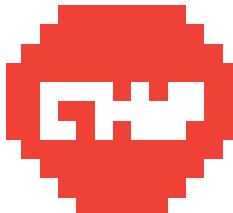


## POISON CONTROL CENTERS

In case of an emergency you can contact your local Poison Control Center by dialing 1-800-222-1222. When you dial this number, you will reach the center for the area from which you called. This number is the same throughout the United States.



For damage caused by an accident involving transportation of pesticides or other possible emergencies, phone the toll free number for the Pesticide Safety Team Network (PSTN).

The PSTN of the National Agricultural Chemicals Association (NACA) represents a joint effort of technically qualified manufacturers to respond to emergency situations where the involuntary release of agricultural chemicals has occurred. The PSTN can be reached by telephone 24 hours a day through this CHEMREC number.

### four keys to pesticide safety

1. **READ THE LABEL ON EACH PESTICIDE CONTAINER BEFORE EACH USE.** Follow instructions; heed all cautions and warnings. Why read the label each time? Because the chemical nature of pesticides and their uses vary greatly. You should refresh your mind each time on the material's specific uses.
2. **DISPOSE OF EMPTY CONTAINERS SAFELY.** It is almost impossible to remove all material from a container. "Empty" containers contain a small amount of pesticides which could harm children or animals who might get into them. Refer to label instructions for proper disposal directions.
3. **STORE PESTICIDES IN THEIR ORIGINAL, LABELED CONTAINERS.** Keep them out of reach of children and irresponsible people. They cannot be properly identified unless they are in the original labeled containers. Lock pesticides in a shed away from feed, seed and other farm supplies.
4. **SPILLS.** First contact the local sheriff, then your State Department of Agriculture.

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## POISON CONTROL CENTERS

**In case of an emergency you can contact your local Poison Control Center by dialing 1-800-222-1222. When you dial this number, you will reach the center for the area from which you called. This number is the same throughout the United States.**



## LOVELAND PRODUCTS 2015 PESTICIDE HANDBOOK FORWARD



### Introduction:

This guide was prepared in the Fall of 2014. It is a quick reference guide on pesticide use and is not intended to replace product labels. Always read the product label for complete information on product use.

Information contained in this guide is believed to be accurate, but cannot be guaranteed. Since publication, there may have been product label cancellations, new product labels or changes in current product labeling. Correct and safe use of pesticides is a responsibility we all have.

### Note:

All information contained in this handbook is subject to change at anytime and is contingent on continued Federal and State registration of pesticides listed. In addition to information contained in this Handbook, LABELS OF EACH PRODUCT MUST BE CONSULTED BEFORE USE OF SUCH PRODUCT. Responsibility cannot be assumed by Loveland Products, Inc. for any results that may follow or any conclusions or inferences that may be drawn following the use of the material presented here. No person has authority to make any representation not contained on individual pesticide labels. Refer to the end of this handbook for conditions of sale and limitations of warranty and liability statements. **Replace any and all Loveland Products Pesticide Handbooks with the most recent version of the Loveland Products Pesticide Handbook.**

### Symbols:

The following symbol has been used throughout this guide:



**RU** Restricted use pesticide - applicator must be licensed for use.

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## Soil Classification:

The importance of understanding a field's soil characteristics can not be understated. Start with a soil test that gives soil organic matter, pH, and texture. Always follow a product's label for its interpretation on soil classification. For this handbook the following classifications have been used:

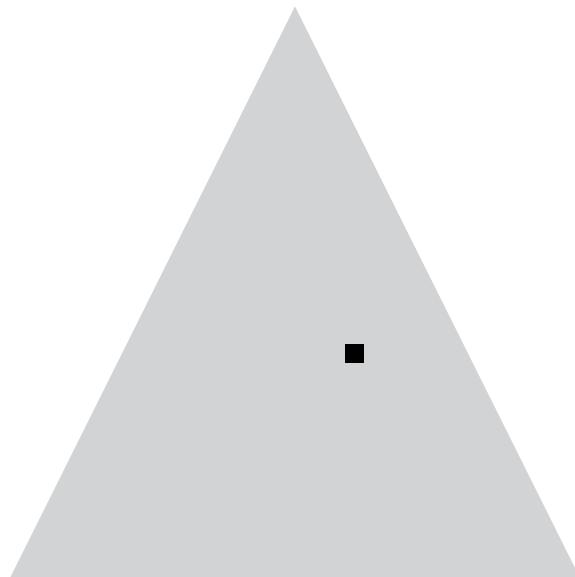
**Coarse Soils:** Sand, Loamy sand, and Sandy loam.

**Medium Soils:** Loam, Silt loam, Silt

**Fine Soils:** Silty clay loam, Clay loam, Sandy clay, Silty clay, Clay

**Soil Texture:** Texture refers to the relative proportions of sand, silt and clay in the soil. Texture has a great influence on the performance of most soil-applied herbicides.

---





**Table 1. Vegetative and reproductive stages of a corn plant.\***

**Vegetative Stages**

VE Emergence

V1 First leaf

V2 Second leaf

V3 Third leaf

•

•

•

V(n) nth leaf

VT Tasseling

**Reproductive Stages**

R1 Silking

R2 Blister

R3 Milk

R4 Dough

R5 Dent

R6 Physiological maturity

\*This system accurately identifies the stages of a corn plant. However, all plants in a given field will not be in the same stage at the same time. When staging a field of corn, each specific V or R stage is defined only when 50% or more of the plants in the field are in or beyond that stage.

**Figure 1.**  
The V2 Corn Plant  
(Two Leaf Collars Visible).

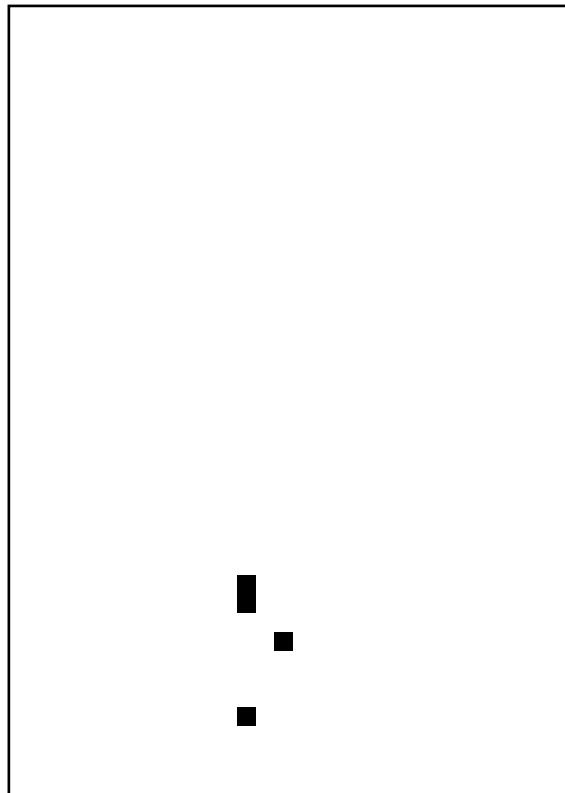


**Table 2. Vegetative and reproductive stages of a soybean plant.\***

<b>Vegetative Stages</b>		<b>Reproductive Stages</b>	
VE	Emergence	R1	Beginning bloom
VC	Cotyledon	R2	Full bloom
V1	First-node	R3	Beginning pod
V2	Second-node	R4	Full pod
V3	Third-node	R5	Beginning seed
•		R6	Full seed
•		R7	Beginning maturity
•		R8	Full maturity
V(n)	nth-node		

\*This system accurately identifies the stages of a soybean plant. However, all plants in a given field will not be in the same stage at the same time. When staging a field of soybeans, each specific V or R stage is defined only when 50% or more of the plants in the field are in or beyond that stage.

Figure 2.  
Nearing The  
V2 Soybean Plant  
(Two fully developed  
Trifoliolates).





## NOTES







## ADJUVANT/SPECIALTY PRODUCTS

Product	Description	General Use Rates	Notes
Actamaster®	Water conditioner with spray grade AMS using the finest grind for the best mixability.	The AMS equivalent of Actamaster is 3.4 lbs./gal. Please check herbicide label for recommended use rates.	Excellent grade of fine, sprayable ammonium sulfate.
Activator 90	90% NIS. No alcohol in formulation. Good penetrant.	Usually 1-2 qts./100 gal. of spray solution. Refer to label for details.	Can be used in all situations that call for a non-ionic surfactant.
Amaze Gold®	Water conditioner AMS-based product plus deposition aid. Liquid formulation.	Glyphosate, glufosinate, and other non-selective herbicides: 2.5 gals./100 gal. for 8.5 lbs. AMS/100 gal.	Maximizes glyphosate, glufosinate, and other non-selective herbicide activity adversely affected by hard water calcium cations.
Choice® Weather Master	Water conditioner product that contains AMS. Very easy to use formulation.	2-4 pts./100 gal. of spray solution. .5 pts./A has demonstrated performance equal to 2 lbs. AMS. Refer to label for details.	Can replace AMS in many situations.
Choice® Trio	Non-AMS liquid water conditioner designed to aid in the performance of herbicides susceptible to the negative effects of hard water.	1-2 qts./100 gallons of spray solution. Refer to label for details.	Three modes of action: sequestering, chelating and complexing of all hard water cations.
Compadre®	Deposition aid. Concentrated product with anti-foaming ability. Utilizes LECI-TECH Technology.	1 pt./100 gal. of spray solution. Refer to label for details.	Prevents fan angle pinching. Increases droplet adhesion. Designed for use with all glyphosates, including K-salt technology.
Effective™	Blend of premium oil surfactant and conditioning components.	2.5 pts./A. Refer to label for details.	COC and water conditioner in one package.
Flame®	Non-ionic Surfactant. Wetting agent and penetrant. Ammonium sulfate product. For use with glyphosate formulations.	1-4 qts./100 gal. of spray solution depending on water hardness. Refer to label for details.	Reduces surface tension and hard water antagonism. Provides superior penetration with glyphosate products.
Franchise®	100% NIS. Low foam penetrating surfactant for use with strobilurin fungicides. Utilizes LECI-TECH Technology.	1-2 qts./100 gal. of spray solution or Aerial: 1-2 ozs. or Ground: 3-4 ozs.	Enhances uptake, deposition and overall performance of strobilurin chemistries. Refer to label for details.
Gunsmoke®	Activator, acidifier and water conditioner. Liquid formulation.	1-2 qts./100 gal.	Designed to improve performance and speed of control of glyphosate.
Herbimax®	Premium COC surfactant. Fertilizer compatible emulsifiers.	Usually 1-4 pts./A. Refer to label for details.	Safe on crops. Increased penetration provided.
Hi-Wett® Super-Spreader	Non-ionic organosilicone surfactant blend with improved deposition. Liquid formulation.	Glyphosate, glufosinate, and other non-selective herbicides: 2.5 gal./100 gal. for 8.5 lbs. AMS/100 gal.	For use with fungicides, insecticides and PGRs in horticultural and arable crops. Very crop safe.
Infuse	Soil applied preemergence adjuvant	Apply Infuse at 1-4 pints/acre in 5-30 gpa. Aerial: 6-16 ozs/Acre.	See label for further instruction. Not registered in CA.
LI 700	Penetrant, surfactant and acidifier. Droplet size management tool. Contains LECI-TECH.	Use rate varies from .5-4 pts./100 gal. of spray solution. Refer to label for details.	Ideal option for glyphosate, dicamba and 2,4-D based products.

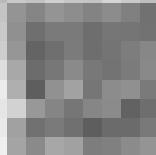


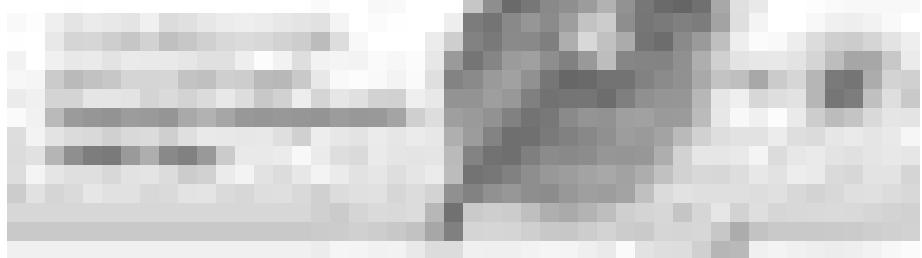
## ADJUVANT/SPECIALTY PRODUCTS



Product	Description	General Use Rates	Notes
Liberate®	100% NIS. Penetrant, deposition aid and drift retardant. Contains LECI-TECH. Utilizes LECI-TECH Technology.	Usually 1-2 qts./100 gal. of spray solution. Refer to label for details.	Can be used in all situations that call for a non-ionic surfactant.
Maximizer®	Premium COC.	Usually 1-4 pts./A. Refer to label for details.	Excellent grade of standard COC.
MSO® Concentrate with LECI-TECH	Methylated seed oil concentrate.	1-2 pts./A. Refer to all labels used in the spray solution for recommended use rates. Refer to label for details.	Strong wax solvent. Good under dry, stressful conditions or when the plant has thick, waxy cuticles. Provides improved plant uptake.
Reign®	Drift retardant and deposition aid. User-friendly product.	1-10 qts./100 gal. of spray solution. Refer to label for details.	-
Reign LC®	Drift retardant and deposition aid. Concentrated, low use rate product.	1-4 ozs./100 gal. (based on PSI) 2 ozs./100 gal. (standard rate) Refer to label for details.	-
Surfate®	Non-ionic surfactant blend containing AMS. Liquid formulation.	1 gal./100 gal. under most conditions.	Designed to maximize the performance of glyphosate, glufosinate and other non-selective herbicides.
Thrust®	AMS-based product. Drift retardant and anti-foaming properties. Dry formulation.	9-17 lbs./100 gal. of spray solution. Standard use rate is 9 lbs./100 gal. of spray solution. Refer to label for details.	Very fine grade of AMS.
Trekker Trax®	Superior foam marker that contains water conditioners.	2-4 pts./30-40 gal. of water depending on water hardness. Refer to label for details.	-
Tuff Trax®	Superior foam marker that contains water conditioners.	2-3 pts./30-40 gal. of water depending on water hardness. Refer to label for details.	-
Unfoamer®	Liquid anti-foam/defoamer agent.	1-6 ozs./100 gal. of spray solution. Refer to label for details.	Designed to control foam in water, oil, fertilizer and pesticide spray mixtures.
Vader®	Non-ionic low foaming penetrant, drift control and deposition agent, and acidifier. Liquid formulation with LECI-TECH chemistry.	With Sherpa® Insecticide (imidacloprid): 1-2 pts./100 gal. Other neonicotinoids: 2-4 pts./100 gal.	Designed to maximize the performance of glyphosate, glufosinate and other non-selective herbicides.
WeatherGard Complete	Water conditioner, anti-foam and drift reduction agent. Utilizes LECI-TECH Technology.	1-2 qts./100 gal. of spray solution. Standard rate is 1 qt./100 gal. of spray solution. Refer to label for details.	All-in-one liquid water conditioner, drift retardant and anti-foam agent.

CHOICE







**Loveland**

PRODUCTS

*Corn Herbicides*



## CORN TYPE HERBICIDE USE

<b>Herbicide</b>	<b>Field</b>	<b>Silage</b>	<b>Sweet</b>	<b>Popcorn</b>
Abundit® Extra	Y	Y	Y	Y
Accent® Q	Y	Y	3	1
Aim®	Y	Y	3	Y
Anthem®	Y	Y	Y	Y
Anthem® ATZ	Y	Y	Y	Y
Armezon®	Y	Y	Y	Y
atrazine/AAtrex®	Y	Y	Y	Y
Balance® Flexx	Y	Y	N	N
Banvel®	Y	Y	N	N
Basis®	Y	Y	N	N
Basis® Blend	Y	Y	N	N
Beacon®	Y	Y	N	2
Bicep®	Y	Y	Y	Y
Breakfree®	Y	Y	4	Y
Broclean®	Y	Y	N	Y
Cadence®	Y	Y	N	Y
Cadet™	Y	Y	Y	Y
Callisto®	Y	Y	4	3
Callisto® Xtra	Y	Y	4	3
Callisto® GT	Y	Y	Y	3
Capreno™	Y	Y	N	N
Cinch®	Y	Y	Y	Y
Clarity®	Y	Y	N	Y
Corvus®	Y	Y	N	N
Degree Xtra®	Y	Y	Y	Y
Distinct®	Y	Y	N	Y
Dual®	Y	Y	Y	Y
Eradicane®	Y	Y	Y	Y
Expert®	Y	Y	Y	Y
Fierce™	Y	N	N	N
FourPower Plus®	Y	Y	Y	Y
FulTime® NXT	Y	Y	Y	Y
Gramoxone® SL 2.0	Y	Y	Y	Y
Halex™ GT	Y	Y	N	N
Harness® or Harness Xtra	Y	Y	Y	Y
Hornet® WDG	Y	Y	N	N
Impact®	Y	Y	Y	Y
Imperium®	Y	Y	N	Y
Keystone® NXT	Y	Y	Y	Y
Keystone® LAN NXT	Y	Y	Y	Y
Laddok S-12	Y	Y	Y	Y
Laudis™	Y	Y	Y	Y
Liberty® 280 SL	Y	Y	1	N
LUMAX® EZ/Lexar® EZ	Y	Y	3	4
Mad Dog®	Y	Y	Y	Y
Mad Dog Plus	Y	Y	Y	Y
Makaze®	Y	Y	Y	Y
Makaze Yield Pro™	Y	Y	Y	Y
NorthStar®	Y	Y	N	Y
OpTill™	Y	Y	N	N
Outlook®	Y	Y	Y	Y
Peak®	Y	Y	N	N
Permit®	Y	Y	Y	Y
Prenual™	Y	Y	N	N

Y = Yes      N = No

1 = Yes N = No

2 = Check for potential sensitivity. Apply post directed after corn is 10" and prior to tassel.

2 = Check for potential sensitivity. Apply  
3 = Consult label for approved varieties.

3 = Consult label for app.  
4 = See label for details.

† Refer to label, not for use in all corn hybrids.



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Aim EC	2 lb. a.i.	<p>.5 - 1 oz. (May use higher rates when needed. Refer to label)</p>			Add to 2,4-D or glyphosate for added speed and spectrum of control.
Alluvex + COC or MSO or NIS + AMS or UAN	33.4% SG	<p>1.5 oz./acre + 1 gal/100 gal or 2 qts/100 gal or 1 qt/100 gal + 2 lbs or 2 qts.</p>			May be applied preplant in early spring up to planting. Do not apply postemergence to corn. May be tankmixed with full or reduced rates of labeled preplant/preemergence grass and broadleaf herbicides.
Anthem	2.15 lb. SE	Coarse $\leq 3\%$ OM 7-8 ozs. $\geq 3\%$ OM 7-8 ozs.	Medium $\leq 3\%$ OM 8-10 ozs. $\geq 3\%$ OM 8-11 ozs.	Fine $\leq 3\%$ OM 9-11 ozs. $\geq 3\%$ OM 10-13 ozs.	Anthem can be applied in all tillage systems (conventional, reduced and no-tillage). Anthem can be applied in the fall or in the spring as a preplant, pre plantincorporated, preemergence, or early post emergence treatment for susceptible grass and broadleaf weeds in field corn, seed corn, sweet corn, and popcorn.
Anthem ATZ	4.505 lb. SE	Coarse $\leq 3\%$ OM 1.5-2 pts. $\geq 3\%$ OM 1.75-2 pts.	Medium $\leq 3\%$ OM 1.75-2.5 pts. $\geq 3\%$ OM 2-2.75 pts.	Fine $\leq 3\%$ OM 2-3 pts. $\geq 3\%$ OM 2.25-4 pts.	Anthem ATZ can be applied in all tillage systems (conventional, reduced and no-tillage). Anthem can be applied in the fall or in the spring as a preplant, pre plant incorporated, preemergence, or early post emergence treatment for susceptible grass and broadleaf weeds in field corn, seed corn, sweet corn, and popcorn.
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> atrazine or AAtrax	4L 90DF	<b>FOR ALL SOIL APPLICATIONS OF AATREX/ATRAZINE PRIOR TO CROP EMERGENCE</b> <ul style="list-style-type: none"> <li>On Highly Erodible Soils (as defined by NRCS) If conservation tillage is practiced, leaving at least 30% of the soil covered with plant residues at planting, apply a maximum of 2.0 lbs. a.i./A (4L: 2 qts./A; 90DF: 2.2 lbs./A) as a broadcast spray. If the soil coverage with plant residue is less than 30% at planting, a maximum of 1.6 lbs. a.i./A (4L: 3.2 pts./A; 90DF: 1.8 lbs./A) may be applied.</li> <li>On Soils Not Highly Erodible Apply 2.0 lbs. a.i./A (4L: 2 qts./A; 90DF: 2.2 lbs./A) as a broadcast spray.</li> </ul>			Avoid incorporation or subsequent tillage operations that move treatment below 2-3" soil depths. For best results, apply within 2 weeks of planting. Apply during or shortly after planting before weed emergence. Rates given are for season long control. Consult label for crop rotation and carry over restrictions. Atrazine gives fair control of yellow foxtail but poor control of giant and green foxtail.
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Balance Flexx	2SC	<b>Early Preplant</b> Coarse      Medium      Fine $\leq 1.5\%$ OM 4 ozs. $\geq 1.5\%$ OM 5 ozs.			For broadleaf and grassy weed control in field silage, and seed corn production including those that are glyphosate, ALS, PPO and triazine resistant. Registered for use in these states: AL, AR, CO, GA, IL, IN, IA, KS, KY, LA, MD, MI, MS, MO, MT, NE, NM, NC, ND, OH, OK, PA, SC, SD, TN, TX, VA, WV, WY. For burndown of emerged weeds prior to crop emergence, include COC, MSO or glyphosate tank mix. May be tank mixed with other labeled preemergence herbicides for broader spectrum weed control and resistance management.
Basis® Blend + COC + AMS	30SG	<b>Preplant, Preemergence or Early POST</b> Coarse      Medium      Fine $\leq 1.5\%$ OM 3 ozs. $\geq 1.5\%$ OM 4 ozs.			Apply after harvest but before ground freezes; EPP, Pre and burndown in the spring. Recrop to soybeans is 15 days when .825 oz/ac used. For fields going to corn, use 1.5 oz. and may be tankmixed with products like Panoflex, Abundit Extra and 2,4-D.

PPI = preplant incorporated • PRE = applied after planting but before emergence • POST = applied after crop or weeds emerge



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
RU Bicep II MAGNUM®	5.5L	Coarse 1.3-1.6 qts.	Medium 1.6-2.1 qts.	Fine 2.1-2.6 qts.	Use lower rates for soils with less than 3% OM.
RU Bicep Lite II MAGNUM®	5.0L	Coarse .9-1.5 qts.	Medium 1.1-1.5 qts.	Fine 1.5-2.2 qts.	Use lower rates for soils with less than 3% OM.
Breakfree NXT	7.0 lbs/gal	Coarse ≤3%OM 1.25-1.75 pts. ≥3%OM 1.75 pts.	Medium ≤3%OM 1.75-2.25 pts. ≥3%OM 1.75-2.25 pts.	Fine ≤3%OM 1.75-2.25 pts. ≥3%OM 2.5-2.75 pts.	Rate ranges: If the weed infestation is light and/or OM content is in the lower end of the range, use a rate at the lower end of the rate range for the soil texture and organic matter content. If the weed infestation is heavier and/or OM content is in the upper end of the range, use the higher rates in the rate range for the soil texture and organic matter. PPI, PRE, postplant-preemergence and early post use.
RU Breakfree NXT ATZ	5.6 lb/gal	Coarse† ≤3%OM 1.4 qts. ≥3%OM 1.7 qts.	Medium† 1.7-2.4 qts. ≥3%OM 2.3-2.6 qts.	Fine† ≤3%OM 2.3-2.6 qts.†† ≥3%OM 2.3-3.0 qts.	If the weed infestation is light and/or OM content is in the lower end of the range, use a rate at the lower end of the rate range for the soil texture and organic matter content. If the weed infestation is heavier and/or OM content is in the upper end of the range, use the higher rates in the rate range for the soil texture and organic matter. ††On highly erodible soils with less than 30% plant residue, do not apply more than 2.5= qts./A. PPI, PRE, early POST use. Apply a minimum of 2.0 lbs. a.i./A as a single preemergence application on soils that are not highly erodible or on highly erodible soil if at least 30% of the soil is covered with plant residues, or apply a maximum of 1.6 lbs. a.i./A as a single preemergence application on highly erodible soils if less than 30% of the soil is covered with plant residues or 2.0 lbs. a.i./A if only applied postemergence.
RU Breakfree NXT Lite	6.0 lbs./gal	Coarse† 1.8 qts.	Medium† 1.8-2.3 qts.	Fine† 2.0-2.3 qts.	If the weed infestation is light and/or OM content is in the lower end of the range, use a rate at the lower end of the rate range for the soil texture and organic matter content. If the weed infestation is heavier and/or OM content is in the upper end of the range, use the higher rates in the rate range for the soil texture and organic matter. PPI, PRE, early POST use. Apply a minimum of 2.0 lbs. a.i./A as a single preemergence application on soils that are not highly erodible or on highly erodible soil if at least 30% of the soil is covered with plant residues, or apply a maximum of 1.6 lbs. a.i./A as a single preemergence application on highly erodible soils if less than 30% of the soil is covered with plant residues or 2.0 pounds a.i./A if only applied postemergence.
Cadence*	6.4 EC	Coarse ≤3%OM 1.5-2.25 pts. ≥3%OM 1.5-2.5 pts. 7%OM 2-3 pts.	Medium ≤3%OM 1.5-2.25 pts. ≥3%OM 1.5-2.5 pts. 7%OM 2.5-3.75 pts.	Fine ≤3%OM 1.5-2.75 pts. ≥3%OM 2-3 pts. 7%OM 3-3.75 pts.	If the weed infestation is light and/or OM is in the lower end of the range, use a rate at the lower end of the rate range for the soil texture and OM content. May be applied up to 30 days before planting. For PPI, may be incorporated up to 14 days before planting.

PPI = preplant incorporated • PRE = applied after planting but before emergence • POST = applied after crop or weeds emerge



## CORN-PREPLANT AND/OR PREEMERGENCE



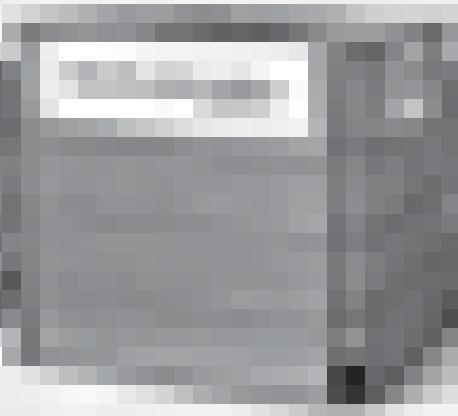
Product	Formulation	Rate Per Acre			Comments
RU	5.25 L	Coarse      Medium      Fine			Acetochlor and atrazine premix. If the OM is in the lower end of the range, use a rate at the lower end of the rates range provided. Can apply up to 30 days before planting but do not apply to coarse soil more than 14 days before planting. †On highly erodible land with less than 30% plant residue do not apply more than 1.6 lbs a.i./A (40 ozs.).
		<3%OM 2.2-2.4 qts.	<3%OM 2.4-2.8 qts.	<3%OM 2.6-3 qts. †	
RU	5.5 L	Coarse      Medium      Fine			Acetochlor and atrazine premix. Can apply up to 30 days before planting but do not apply to coarse soil more than 14 days before planting. †On highly erodible land with less than 30% plant residue do not apply more than 1.6 lbs. a.i./A.
		<3%OM 1.6-1.8 qts.	<3%OM 1.8-2.1 qts.	<3%OM 1.9-2.2 qts. †	
RU	7.64 lb ai/ gal EC	Coarse      Medium      Fine			Use the lower rate on coarse textured soils and the high rate on fine textured soils.
		<3% OM 1.1-1.33 pts.	<3% OM 1.33-1.67 pts.	<3% OM 1.33-1.67 pts.	
RU	5.5 L	Coarse      Medium      Fine			Rates over 4.2 pts./A are only labeled for use on medium and fine textured soils that are not defined as highly erodible land with less than 30% residue cover.
		4.2 pts.	4.2-5.2 pts.	4.2-5.2 pts.	
RU	5 lb. a.i.	Coarse      Medium      Fine			PPI, PRE or early POST.
		3 pts.	3-3.8 pts.	3.8-4.4 pts.	
RU	2.63 SC	Coarse      Medium      Fine			†If soils are ≤2% OM and have a pH of ≥7.5, the rate can be reduced by 0.5 fl. oz. For broadleaf and grassy weed control in field and silage corn in: AL, AR, CO, GA, IL, IN, IA, KS, KY, LA, MD, MI, MS, MO, MT, NE, NM, NC, ND, OH, OK, PA, SC, SD, TN, TX, VA, WV, WY. Apply PRE or PPI. May be applied up to 30 days prior to planting when used in a planned sequential app. program, otherwise 21 days. Corn seed must be covered with > 1.5" soil. For broadleaf and grassy weed control in field, silage and seed corn production including ALS, PPO, triazine and glyphosate resistant biotypes.
		<2%OM † 3.33 ozs.	<2%OM † 5.6 ozs.	<2%OM † 5.6 ozs.	
RU	4.04CS	Coarse      Medium      Fine			In areas of heavy weed infestation up to 4.3 qts./A on medium and fine textured soils.
		2.9 qts.	2.9-3.7 qts	3.2-3.7 qts.	
Distinct® + NIS OR MSO + UAN OR AMS	70DG	4.0 – 6.0 oz. + 0.25% v/v or 1.5 – 2.0 pt./A + 1.25% v/v or 5 lb./100 gallons			7 day preplant interval required. For best performance, apply when weeds are in the 2-4 leaf stage or when rosettes are less than 2 inches across. Any crop may be planted 120 days after application.
Dual IIG MAGNUM®	16G	Coarse      Medium      Fine			Dry granule for direct application. Apply after planting or incorporate into the top 2" of within 14 days of planting.
		<3% OM 6-8 lbs.	<3% OM 8-10 lbs.	<3% OM 8-10 lbs.	

# TRIPLEFLEX<sup>®</sup> HERBICIDE

## FLEXIBLE, CONSISTENT RESIDUAL CONTROL

### Product Advantages and Benefits

- # TripleFLEX<sup>®</sup> II Herbicide contains three modes of action for control of ALS-, glyphosate- or triazine-resistant weeds
- # Flexible application window—preplant, pre-emergence and postemergence, up to 11-inch corn
- # TripleFLEX II Herbicide now offers an updated formulation with a Monsanto-developed safener



### ROUNDUP READY PLUS<sup>®</sup> INCENTIVES

Earn **\$1.00/A cash back** when used with Roundup PowerMAX<sup>®</sup> and **\$1.50/A cash back** when used with Roundup WeatherMAX<sup>®</sup>.

For more details, visit [RoundupReadyPLUS.com](http://RoundupReadyPLUS.com), or contact your local Monsanto representative.

Endorsed by  
**ROUNDUP READY PLUS<sup>®</sup>**  
CROP MANAGEMENT SOLUTIONS

**Roundup Technology<sup>®</sup>** includes Monsanto's glyphosate-based herbicide technologies. **Always read and follow IRM, where applicable, grain marketing and all other stewardship practices and pesticide label directions. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** TripleFLEX<sup>®</sup> II Herbicide is not registered in all states. TripleFLEX<sup>®</sup> II Herbicide may be subject to use restrictions in some states. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local Monsanto dealer or representative for the product registration status in your state. Roundup PowerMAX<sup>®</sup>, Roundup Ready PLUS<sup>®</sup>, Roundup Technology<sup>®</sup>, Roundup WeatherMAX<sup>®</sup> and TripleFLEX<sup>®</sup> are registered trademarks of Monsanto Technology LLC. ©2015 Monsanto Company.



# Balance® flexx

WITH  
CSI  
SAFENER

## Leave nothing to chance.

**Balance® Flexx pre-emergence corn herbicide has the unique ability to reactivate with just a half inch of rain, giving you a second round of weed control.**

That's why you can count on Balance Flexx for:

- ✓ Burndown and control of tough grasses and broadleaf weeds.
- ✓ Reactivation with rain to kill late-emerging weeds.
- ✓ CSITM Safener technology, which enables plants to better withstand herbicidal activity, allowing for safe use on any soil from preplant to early postemergence (V2).
- ✓ Use on ALS-sensitive hybrids.



Bayer CropScience

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CR0115BALFXXA064V00R0 B-27258-1



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Dual II MAGNUM	7.64EC	Coarse	Medium	Fine	May be preplant incorporated into the top 2" of soil.
		<3% OM .67-1 pt. ≥3% OM 1.33 pts.	<3% OM 1.33-1.67 pts. ≥3% OM 1.33-1.67 pts.	<3% OM 1.33-1.67 pts. ≥3% OM 1.67-2 pts.	
Dual II MAGNUM® SI	6.3 lb. a.i.	Coarse  ≤3% OM 1.2-1.6 pts.  ≥3% OM 1.6 pts.	Medium  ≤3% OM 1.6-2 pts.  ≥3% OM 1.6-2 pts.	Fine  ≤3% OM 1.6-2 pts.  ≥3% OM 2-2.4 pts.	Liquid for dry impregnation only.
Durango® DMA®	5.4 WSL	†			†Apply a minimum of 18 ozs./A when tankmixing with N solutions as a spray carrier or Aim, atrazine, or atrazine-containing premixes. Apply a minimum of 21 ozs./A when tankmixing with 1.5 lbs. or more atrazine active ingredient/A. Refer to label for regional restrictions and tankmix partner recommendations. Pre-plant, preemergence and at-plant applications. Apply prior to crop emergence. Many tank mix partner recommendations available on Durango DMA label.
Duramax™	5.4 WSL	†			†Apply a minimum of 18 ozs./A when tankmixing with N solutions as a spray carrier or Aim, atrazine, or atrazine-containing premixes. Apply a minimum of 21 ozs./A when tankmixing with 1.5 lbs. or more atrazine active ingredient/A. Refer to label for regional restrictions and tankmix partner recommendations. Pre-plant, preemergence and at-plant applications. Apply prior to crop emergence. Many tank mix partner recommendations available on Duramax label.
RU Expert®	4.88 lb. a.i.	Coarse  ≤3%OM 2.5-3.75 qts. ≥3%OM 3-3.75 qts.	Medium  ≤3%OM 3-3.75 qts. ≥3%OM 3-3.75 qts.	Fine  ≤3%OM 3-3.75 qts. ≥3%OM 3-3.75 qts.	Apply before planting or PRE but before corn emerges unless the corn is Roundup Ready®. Do not exceed 3 qt./A of Expert when applying to highly erodible land with less than 30% plant residue cover. See label.
Eradicane + atrazine	6.7E 4L	3.75-7.33 pts. + 2-3 pts.			See Eradicane label for incorporation guidelines. Use the lower rate of Eradicane for light infestations and in coarse textured soils. Use the higher rates of atrazine for heavy infestations of broadleaf weeds and for soils with over 5% OM. Consult label for crop rotation and carry over restrictions.
Eradicane	6.7-E	4.75-7.33 pts.			Use 2 pass incorporation. Use the lower rate of Eradicane for light infestations and in coarse textured soils. Incorporate into a dry and well worked soil. Wherever possible, application and first incorporation should be done in the same operation.



# CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Fierce™	76WDG	3 ozs.			For use in minimum or no-till field corn only. Must be applied 7 days prior to planting corn crop. Add 0.5 to 1 lb./A atrazine for additional broadleaf control.
RU FullTime® NXT	4.04CS	Coarse	Medium	Fine	In areas of heavy weed infestation, use up to 4.4 qts./A on medium and fine textured soils. Refer to label for additional information.
		2.9 qts.	2.9-3.7 qts.	3.2-3.7 qts.	
RU Gramoxone SL 2.0™ + NIS or COC or MSO	2L	Weed Ht. 1-3 in. 3-6 in. >6 in.	Gramoxone SL rate/A 2.2-5 pts. 2.5-3 pts. 3-4 pts.	+ 1 pt./100 gal. or 1 gal./100 gal. or 1 gal./100 gal.	Apply in a band over the row or broadcast prior to or after planting but before crop emergence. Avoid any tillage prior to application to permit maximum weed and grass emergence. Weeds and grasses emerging after application will not be controlled. Consult label for restrictions on using fertilizer for carrier. Rainfast in 30 minutes. Refer to label for mixing directions.
		<3%OM 1.25-1.75 pts. ≥3%OM 1.75 pts.	<3%OM 1.75-2.25 pts. ≥3%OM 1.75-2.25 pts.	<3%OM 1.75-2.25 pts. ≥3%OM 2.25-2.75 pts.	Refer to the label for additional information.
Harness®	7EC	Coarse	Medium	Fine	Refer to the label for additional information.
Harness	20G	<3%OM 6-8 lbs. ≥3%OM 8 lbs.	<3%OM 8-10 lbs. ≥3%OM 8-10 lbs.	<3%OM 8-10 lbs. ≥3%OM 10-12 lbs.	
RU Harness + atrazine	7EC 4L	Coarse ≤3%OM 1.25-1.75 pts. ≥3%OM 1.25-1.75 pts.	Medium ≤3%OM 1.25-1.75 pts. ≥3%OM 1.75-2.25 qts.	Fine ≤3%OM 1.75-2.25 pts. ≥3%OM 1.75-2.25 pts.	Apply 7 days prior to planting and shallowly incorporate, or apply after planting within 5 days of last tillage. On highly erodible soils (as defined by the NRCS), do not apply more than 1.6 lbs. atrazine (a.i.)/A as a single preemergence application if less than 30% of the surface is covered with plant residues.
		<3%OM 1.25-2 qt. ≥3%OM 1.25-2 qt.	<3%OM 1.25-2 qt. ≥3%OM 1.5-2 qt.	<3%OM 1.5-2 qt. ≥3%OM 1.5-2 qt.	
Harness + Banvel	7EC 4L	Coarse ≤3%OM 1.25-1.75 pts. ≥3%OM 1.75 pts.	Medium ≤3%OM 1.75-2.25 pts. ≥3%OM 1.75-2.25 pts.	Fine ≤3%OM 1.75-2.25 pts. ≥3%OM 2.25-2.75 pts.	Do not use on sand or sandy loam with less than 2% OM. Refer to the label. Apply preemergence within 5 days of last tillage. Plant corn at least 1½" deep. Refer to labels.
		<3%OM 1 pt. ≥3%OM 1 pt.	<3%OM 1 pt. ≥3%OM 1 pt.	<3%OM 1 pt. ≥3%OM 1 pt.	
RU Harness Xtra®	5.6L	Coarse	Medium	Fine	In areas of heavy weed infestation use up to 2.3 qts./A on coarse textured soils and up to 3 qts./A on medium and fine textured soils. May be used PPI, PRE, & early POST. Do not exceed 2.5 qts./A on highly erodible soils with less than 30% plant residue cover. Do not exceed 2.5 qts./A on highly erodible soils with less than 30% plant residue cover.
		<3%OM 1.4 qts. ≥3%OM 1.7 qts.	<3%OM 1.7-2.4 qts. ≥3%OM 2.3-2.6 qts.	<3%OM 2.3-2.6 qts. ≥3%OM 2.3-3 qts.	

PPI = preplant incorporated • PRE = applied after planting but before emergence • POST = applied after crop or weeds emerge



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
RU	Harness Xtra	6.0	Coarse	Medium	Fine
			1.8 qts.	1.8-2.3 qts.	2-2.3 qts.
Hornet® WDG + Keystone® NXT/ Cadence ATZ NXT* 5.25 SE or other corn grass premixes	0.856WDG	<3%OM 3 ozs. >3%OM 4 ozs.			PPI, PRE. May be applied with liquid fertilizer or impregnated with dry bulk fertilizer by pre-mixing (slurry). Tankmix with an atrazine containing grass herbicide like Fultime® NXT, Keystone® NXT or Bicep II MAGNUM to improve control of velvetleaf, sunflower, and cocklebur.
RU Imperium®	7 lb. a.i.	4.5-8 pts.†			†Imperium use rate dependent on target weed species. State restrictions apply in AZ, CA, and FL. PPI applications only. Not for use in sweetcorn. Refer to label for soil texture/groundwater depth use restrictions and other use restrictions. Apply in 10 to 60 gals. of water or fluid fertilizers/A. Use 20-40 psi. Refer to label for recommended tank mix partners such as Balance or atrazine.
RU Instigate®	45.84 WDG	5.25 – 7.0 oz. ( 6.0 oz most common )			Can be applied burndown, preplant or preemerge; may be tankmixed with full or reduced rates of preemergence corn herbicides such DuPont Cinch and DuPont Breakfree NXT brands. May be applied at 5.25 – 5.4 oz. early postemergence through 2 leaf collars.
RU	Keystone® NXT/ Cadence ATZ NXT	5.6L	Coarse	Medium	Fine
			<3%OM 1.4 qts. ≥3%OM 1.7 qts.	<3%OM 1.7-2.4 qts. ≥3%OM 2.3-2.6 qts.	<3%OM 2.3-2.6 qts. ≥3%OM 2.3-3 qts.
RU	Keystone® LA NXT/ Cadence Lite ATZ NXT	6.0	Coarse	Medium	Fine
			1.8 qts.	1.8-2.3 qts.	2.0-2.3 qts.
LeadOff + COC or MSO or NIS + AMS or UAN	30SG + 1 gal/100 gal or 2 qts/100 gal or 1 qt/100 gal + 2 lbs/A or 2 qts/A	1.5 to 2.7 ozs/A (1.5 ozs/A is most common)			DuPont specifies a use rate of 1.5 ozs/A for most applications. Consult DuPont Technical Bulletins for additional application rates and restrictions. Leadoff may be applied Preplant after fall harvest, through early spring up to planting, whenever the ground is not frozen. Additionally, Leadoff may be applied after planting before corn emerges. Do not apply postemerge to corn. Surfactants are needed for emerged weeds.



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
RU Lexar EZ	3.704 lb/gal ZC	<3%OM		>3%OM	Field corn, silage corn, seed corn, and yellow popcorn. See label for sweet corn.
		3 qts.	3.5 qts.		
RU LUMAX EZ	3.67 lb/gal ZC	<3%OM		>3%OM	Field corn, silage corn, seed corn, and yellow popcorn. See label for sweet corn.
		2.7 qts.	3.25 qts.		
Outlook	6EC	Coarse	Medium	Fine	Preplant up to 45 days before planting. PPI or Pre. May be applied sequentially or tankmixed with many products.
		$\leq 3\%$ OM 12-14 ozs. $\geq 3\%$ OM 14-18 ozs.	$\leq 3\%$ OM 14-18 ozs. $> 3\%$ OM 18-21 ozs.	$\leq 3\%$ OM 14-18 ozs. $> 3\%$ OM 18-21 ozs.	
Outlook + Clarity or Strut	6EC 4SL	Coarse	Medium	Fine	†Do not apply to coarse textured soils or any soil with less than 2.5% OM until after corn emergence. Preplant Application for use in no-till corn only. Refer to label. Rates provided are for preemergence application.
		Do not apply to coarse soils	$\leq 3\%$ OM† 14-18 ozs. $> 3\%$ OM 18-21 ozs. + $> 2.5\%$ OM 1 pt.	$\leq 3\%$ OM† 14-18 ozs. $> 3\%$ OM 18-21 ozs. + $> 2.5\%$ OM 1 pt.	
Outlook + Rifle Plus	6EC 3.2L	Coarse	Medium	Fine	†Do not apply to coarse textured soils or any soil with less than 2.5% OM until after corn emergence. Preplant Application for use in no-till corn only. Refer to label. Rates provided are for preemergence application.
		Do not apply to coarse soils	$\leq 3\%$ OM† 14-18 ozs. $> 3\%$ OM 18-21 ozs. + $> 2.5\%$ OM 3.5 pts.	$\leq 3\%$ OM† 14-18 ozs. $> 3\%$ OM 18-21 ozs. + $> 2.5\%$ OM 3.5 pts.	
Prequel™ + NIST or COCT + AMS† or UANT	45% WDG	1.66 ozs. + Refer to label. or Refer to label. + Refer to label. or Refer to label.			†Use to aid in control of emerged weeds. Prequel is for use in field corn production in certain states only. Refer to label. For broadleaf and grass weed control, may apply preplant surface-applied, PPI, PRE, or preplant/preemerge burndown. Refer to label for activation instructions, potential tankmix partners and other details.
Princep® or Caliber 90®	4L	3.2-8 pts.† or 2.2-4.4 lbs.†			Can be applied preplant, PPI, or preemergence. When used alone, apply prior to weed emergence or remove weed growth prior to application. Controls annual grass and annual broadleaves through root and shoot uptake. Adequate moisture is needed to activate Princep. Can be tankmixed for use in minimum or no-till systems.
RU Princep + Atrazine/ Aatrex	4L 4L	Coarse	Medium	Fine	PPI or PRE. Incorporate within 14 days of planting. Can be used on sweetcorn. Use a 2:1 ratio of Princep to atrazine for heavy infestations of crabgrass, fall panicum or for suppression of quackgrass. Consult label for crop rotation and carryover restrictions. atrazine applied must not exceed 2.5 lbs. a.i./acre per calendar year.
		2 pts. + 2 pts.	2.4 pts. + 2.4 pts.	2.88 pts. + 2.88 pts.	



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Prowl H20		Coarse      Medium      Fine			Corn must be planted at least 1.5" deep and completely covered with soil. Apply preemergence only. Do not apply preplant.
		$\leq 1.5\% \text{ OM}$	$\leq 1.5\% \text{ OM}$	$\leq 1.5\% \text{ OM}$	
		2.0 pints	3.0 pints	3.0	
		1.5% to 3.0% OM	1.5% to 3.0% OM	1.5% to 3.0% OM	
		3.0 pints	3.0	4.0	
		$\geq 3.0\% \text{ OM}$	$>3.0\% \text{ OM}$	$>3.0\% \text{ OM}$	
		3.0 pints	4.0	4.0	
Python® WDG	80WDG	Coarse      Medium      Fine			† See label for weeds controlled by the lower rate ranges. Higher rate ranges will provide broader weed control spectrum. Use higher rate within rate ranges on soils with >3% OM. May be applied with liquid fertilizer or impregnated with dry fertilizer by premixing (slurry).
		.8-1 oz.†	.89-1.33 ozs.†	.89-1.33 ozs.†	
Roundup WEATHER-MAX or Roundup PowerMAX	5.5S	Weeds <6" tall		Weeds >6" tall	Apply before, during, or after planting but before crop emergence as a burndown. See label for further information and guidance.
		22 ozs.		22-32 ozs.	
Saber	3.8S	Coarse      Medium      Fine			Rates provided are for preplant, refer to the label for preemergent or postemergent applications and rates. Use low rate when soil OM is low or on light, sandy textured soils.
		.5-1 pt.	.5-1.5 pts.	.5-1.5 pts.	
Select Max® or Intensity One® + NIS + AMS	.97EC	6 ozs.  + 1 qt./100 gal. + 2.5 lbs.			May be used to kill existing stand of corn prior to planting corn. Do not plant corn for 6 days after application.
Sharpen® + MSO† + AMS† or UAN†	2.85 SC	<u>Residual PRE Rates in a Sequential Program (2-pass) for weed control through early- to mid-season</u> Coarse      Medium      Fine 2.2-5 ozs.    2.5-3 ozs.    3-3.5 ozs.  + 1 gal./100 gals. + 8.5 to 17 lbs./100 gals. or 1.25 to 2.5 gals./100 gals.			†For optimal burndown activity. For use on field corn and popcorn (Before applying to popcorn, verify the selectivity of Sharpen on your hybrid with your local seed company [supplier] to help avoid potential injury to sensitive hybrids). For broadleaf weed control, may apply preplant surface, PPI, PRE, burndown plus residual weed control, or burndown weed control only. Refer to label for activation instructions, potential tankmix partners and other details. 1 hour rainfast.
		Coarse      Medium      Fine	$\leq 3\% \text{ OM}$ 1.5-2 pts. $\geq 3\% \text{ OM}$ 1.5-2 pts.	$\leq 3\% \text{ OM}$ 1.5-2 pts. $\geq 3\% \text{ OM}$ 1.75-3 pts.	$\leq 3\% \text{ OM}$ 2-3 pts. $\geq 3\% \text{ OM}$ 2-3 pts.
SureStart® II	4.25SE	For use on herbicide tolerant and conventional field and silage corn. Apply as close as possible to planting, but prior to crop emergence. PRE: May be surface applied, needs at least 0.25" of water to place herbicide near weed seeds. PPI: Incorporate into the top 1 to 2" layer of soil. No adjuvants required unless tankmixing with certain products. Refer to label for all use restrictions (i.e. soil pH levels) and precautions.			

PPI = preplant incorporated PRE = applied after planting but before emergence POST = applied after crop or weeds emerge



## CORN-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Surpass® NXT	7EC	Coarse	Medium	Fine	Refer to label for additional information
		$\leq 3\%$ OM 1.25-1.75 pts. $\geq 3\%$ OM 1.75 pts.	$\leq 3\%$ OM 1.75-2.25 pts. $\geq 3\%$ OM 1.75-2.25 pts.	$\leq 3\%$ OM 1.75-2.25 pts. $\geq 3\%$ OM 2.25-2.75 pts.	
Touchdown Total	4.17 lb. a.i.	12-35 ozs. See the label.			Apply preplant or preemergent before corn emerges. Rate dependent on weed species to be controlled and weed stage of growth.
TripleFLEX	4.25 lb. a.i.	Coarse	Medium	Fine	May be mechanically incorporated into top 2" of soil by mechanical means any time up to 14 days before planting. May be applied to soil surface as a broadcast or banded app. Refer to Supplemental Label for directions on higher product use rates.
		$\leq 3\%$ OM 1.5 pts. $\geq 3\%$ OM 1.5 pts.	$\leq 3\%$ OM 1.5-1.75 pts. $\geq 3\%$ OM 1.75 pts.	$\leq 3\%$ OM 2 pts. $\geq 3\%$ OM 2 pts.	
Triple FLEX®II	4.25 lb. a.i.	Coarse	Medium	Fine	May be mechanically incorporated into top 2" of soil by mechanical means any time up to 14 days before planting. May be applied to soil surface as a broadcast or banded app. Refer to Supplemental Label for directions on higher product use rates.
$\leq 3\%$ OM 1.5 pts. $\geq 3\%$ OM 1.5 pts.	$\leq 3\%$ OM 1.5-1.75 pts. $\geq 3\%$ OM 1.75 pts.	$\leq 3\%$ OM 2 pts. $\geq 3\%$ OM 2 pts.			
Valor SX or Rowel™	51WDG	2 ozs.			For use in minimum or no-till field corn only. Must be applied 7 days prior to planting corn crop. Add 0.5 to 1 lb./A atrazine for additional broadleaf control.
Verdict™  + MSO† + AMST or UANT†	5.57EC	<u>Residual PRE Rates in a Sequential Program (2-pass) for weed control through early- to mid-season</u> Coarse      Medium      Fine 10-12 ozs. 13-15 ozs. 16-18 ozs. + 1 gal./100 gals. + 8.5 to 17 lbs./100 gals. or 1.25 to 2.5 gals./100 gals.			†For optimal burndown activity. For use on field corn and popcorn (Before applying to popcorn, verify the selectivity of Verdict on your hybrid with your local seed company [supplier] to help avoid potential injury to sensitive hybrids). Dual mode of action. Selective residual herbicide for control of most annual grasses, broadleaf weeds, and sedges. May apply preplant surface, PPI, or PRE. Refer to label for activation instructions and other important details on the label. 1 hour rainfast. Refer to label for potential tankmix partners.
		Coarse      Medium      Fine 1.5-2.75 ozs. 2-3 ozs. 2.5-4 ozs.  Early postemergece application may be reduced by 0.5 oz./A on the low end of rate range.  Lower rates may be used in a planned sequential program. Refer to label.			
Zidua®	85%WG	Coarse      Medium      Fine 1.5-2.75 ozs. 2-3 ozs. 2.5-4 ozs.  Early postemergece application may be reduced by 0.5 oz./A on the low end of rate range.  Lower rates may be used in a planned sequential program. Refer to label.			May be applied preplant surface, PPI, PRE and early POST (spike to V4). Will not control emerged weeds. May be applied in fall or winter after crop harvest for fall/winter weed control. Dry weather following application may reduce effectiveness. Must be applied and activated by at least ½ inch rainfall or irrigation prior to weed germination. Do not apply by air or chemigation. Maximum cumulative rate of Zidua per cropping season is 2.75 oz/A on coarse soils and 5.0 oz/A on medium to fine soils.

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Early-season weed control leads to higher yields. And no early-season corn herbicide kills as many grasses and broadleaf weeds for as long as Lexar EZ. Talk to your Syngenta retailer or visit [www.Lexar-herbicide.com](http://www.Lexar-herbicide.com)

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2 leaf  
corn

Lexar can  
be applied up to

12"  
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 **Lexar® EZ**

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## CORN-POSTEMERGENCE

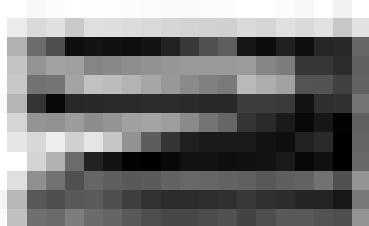


Product	Formulation	Rate Per Acre	Comments
Abundit™ Extra	4 lb. a.i.	16-32 ozs.	Apply up to 30" corn or from VE and up to V8, whichever is more restrictive.
Accent Q + COC or NIS + AMS or UAN	54.5%WDG	.9 oz. + 1 gal./100 gal. of solution or 1 qt./100 gal. + 2 lbs. or 2 qts.	Refer to label for weed and crop stage recommendations. Do not use where Counter® 15G (any application method) or Counter 20CR in furrow was used. Check crop rotational restrictions. Broadcast on corn up to and including 5 leaf collar or less than 20" whichever is more restrictive. Drop nozzle from 20 up to 36 inches tall or that exhibits 10 or more collars, whichever is more restrictive. Higher Accent rates are recommended for larger weeds. Refer to the label.
RU RU Accent Q + atrazine 4L or atrazine 90 + COC or NIS + AMS	54.5%WDG 4L 90DF Herbimax	.9 oz. + .75-1.5 qts. or .83-1.66 lbs. + 1 gal./100 gal. or 1 qt./100 gal. + 2 lbs.	Improves control of broadleaf weeds. Do not apply to corn over 12" tall. 4 lbs./A Actamaster® may be added in place of UAN.
Accent Q + Banvel/Rifle or Clarity/Strut + NIS + AMS	54.5%WDG 4S 4SL	.9 oz. + 2-4 ozs. + 1 qt/100 gal. + 2 lbs.	Improves control of broadleaf weeds. DO NOT ADD CROP OIL CONCENTRATE. 4 lbs./A Actamaster may be added in place of UAN. Broadcast up to 8" or drop nozzle from 8-36".
Accent Q + Broclean + NIS + AMS	54.5%WDG 2EC	.9 oz. + 1-1.5 pts. + 1 qt./100 gal. + 2 lbs.	Improves control of broadleaf weeds. DO NOT ADD CROP OIL CONCENTRATE. A UAN solution at 4 gal./100 or 2 lbs./A Actamaster maybe added to enhance performance on certain weeds. Drop nozzle from 20 up to 36 inches tall or that exhibits 10 or more collars, whichever is more restrictive. Higher Accent rates are recommended for larger weeds. Refer to the label. Do not apply to corn taller than 36". See Accent label for size restrictions.
RU RU Accent Q + atrazine or Brozine + NIS + AMS	54.5%WDG	.9 oz. + 1 qt./100 gal. + 2 lbs.	†3 pts Atrazine or Brozine may be used when corn is at least 4 leaf up to 12" tall. Improves control of broadleaf weeds. DO NOT ADD CROP OIL CONCENTRATE. A UAN solution at 4 gal./100 or 2lbs./A Actamaster may be added to enhance performance on certain weeds.



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Product	Formulation	Rate Per Acre			Comments
RU Accent Q + atrazine + Callisto + COC + AMS	54.5%WDG 90DF	.45 oz. + .33-1 lb. + 1.5-3 ozs. + 1 gal./100 gal. + 2 lbs.			May add 2-4 oz. of Banvel/Clarity/Strut for larger lambsquarters control. Refer to label for further recommendations.
Accent Q + Hornet + COC + AMS	54.5%WDG 85.6 WDG	.9 oz. + 1.6-4 ozs. + 1 gal./100 gal. + 2 lbs.			Improves control of broadleaf weeds. Refer to labels for weed and crop stage recommendations. Actamaster may be added in place of UAN.
Accent Q + Northstar + COC or NIS + AMS	54.5%WDG 70DG	.9 oz. + 2.5-5 ozs. + 1 gal./100 gal. or 1 qt./100 gal. + 2 lbs.			May add 2-4 ozs. of Banvel or Clarity/Strut for larger lambsquarters control. Check label for rate and geographic use area for Northstar and Spirit. Refer to label for further recommendations.
Aim EC + NIS	2 lb. a. i.	.5 -1 oz. (May use higher rates when weeds are tall or under stress. Refer to label) + 1 qt./100 gal.			Apply to corn postemergence up to 14 leaf collar growth stage. Apply to actively growing weeds 1-4" tall. Make directed applications to corn over V8 stage. Use tankmixes with other herbicides for more mature weeds. Aim may be tankmixed with Accent, Banvel, Basis, Beacon, Clarity, Harness, Hornet, Marksman, NorthStar, Prowl/Stealth, Spirit, Steadfast, Strut, Surpass, TopNotch and Touchdown.
Anthem	2.15 lb. SE	Coarse 5-8 ozs.	Medium 6-9 ozs.	Fine 7-12 ozs.	Apply Anthem from crop emergence through V4 stage (visible 4th leaf collar). When applying Anthem alone for post emergent weed control, apply before the weeds have reached the maximum height listed on the label. For control of weeds in post applications larger than listed on the label and for wider spectrum, apply in tank-mixture with herbicide(s) that are labeled for control of targeted weeds.
Anthem ATZ	4.505 lb. SE	Coarse 1.5-2 pts.	Medium 1.75-2.5 pts.	Fine 2-3 pts.	Apply Anthem ATZ from crop emergence through V4 stage (visible 4th leaf collar) and before corn is 12" tall. When applying Anthem ATZ alone for post emergent weed control, apply before the weeds have reached the maximum height listed on the label. For control of weeds in post applications larger than listed on the label and for wider spectrum, apply in tank-mixture with herbicide(s) that are labeled for control of targeted weeds.







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Product	Formulation	Rate Per Acre	Comments												
Armezon® + MSO + UAN or AMS	2.8 SC	0.75 – 1.0 oz. + 1.0– 1.5% v/v + 1.25 – 2.5% v/v or 8.5-15 lb./100 gallons	Standard rate is 0.75 oz./A. See supplemental label for additional grass weeds at 1.0 oz./A. POST application on all types of corn. Do not apply after V8 growth stage. Tank mix with 0.25 – 1.5 lb. atrazine to increase weed control spectrum.												
RU atrazine + Emulsifalbe oil or COC or AAtrex Nine-O® + COC or MSO	4L	<u>Broadleaf weeds</u> 2.4 pts. <u>Broadleaf and grass weeds</u> 4 pts. + 1 gal. or 1 gal. or <u>Broadleaf weeds</u> 1.3 lbs. + 1 qt. or 1 qt.	Apply before corn reaches 12" tall. Apply before pigweed and lambsquarters reach 6" in height and before other broadleaves reach 4" in height. A cultivation may be necessary if all weeds are not controlled or if regrowth occurs. Apply before grasses are 1½" tall. Apply in a minimum of 10 gals. water. Adjust water volume and pressure for heavy weed and/or crop residue situations. Consult label for crop rotation restrictions and for recommendations on Canada thistle, yellow nutsedge, and quackgrass. 4 hour rainfast. <b>FOR POSTEMERGENCE APPLICATION OF ATRAZINE/AATREX:</b> If no atrazine was applied prior to corn emergence, apply a maximum of 2.0 lbs. a.i./A broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs. active ingredient per acre per calendar year.												
RU Balance Flexx	2 SC	<u>Early Preplant</u> <u>Coarse      Medium      Fine</u> <table border="1"><tr><td>&lt;1.5%OM 4 ozs.</td><td>&lt;1.5%OM 6 ozs.</td><td>&lt;1.5%OM 6 ozs.</td></tr><tr><td>&gt;1.5%OM 5 ozs.</td><td>&gt;1.5%OM 6 ozs.</td><td>&gt;1.5%OM 6 ozs.</td></tr></table> <u>Preplant, Preemergence or Early POST</u> <u>Coarse      Medium      Fine</u> <table border="1"><tr><td>&lt;1.5%OM 3 ozs.</td><td>&lt;1.5%OM 5 ozs.</td><td>&lt;1.5%OM 6 ozs.</td></tr><tr><td>&gt;1.5%OM 4 ozs.</td><td>&gt;1.5%OM 6 ozs.</td><td>&gt;1.5%OM 6 ozs.</td></tr></table>	<1.5%OM 4 ozs.	<1.5%OM 6 ozs.	<1.5%OM 6 ozs.	>1.5%OM 5 ozs.	>1.5%OM 6 ozs.	>1.5%OM 6 ozs.	<1.5%OM 3 ozs.	<1.5%OM 5 ozs.	<1.5%OM 6 ozs.	>1.5%OM 4 ozs.	>1.5%OM 6 ozs.	>1.5%OM 6 ozs.	May be applied alone or in tank mix with atrazine up to the 2 leaf collar growth stage (V2). Do not use any other tankmix partner on emerged corn
<1.5%OM 4 ozs.	<1.5%OM 6 ozs.	<1.5%OM 6 ozs.													
>1.5%OM 5 ozs.	>1.5%OM 6 ozs.	>1.5%OM 6 ozs.													
<1.5%OM 3 ozs.	<1.5%OM 5 ozs.	<1.5%OM 6 ozs.													
>1.5%OM 4 ozs.	>1.5%OM 6 ozs.	>1.5%OM 6 ozs.													
Banvel or Rifle	4SC	<u>Rate Information</u> Spike to 5th true leaf or 8" tall, whichever comes first. <u>Coarse      Medium      Fine</u> .5 pt.    1 pt.    1 pt.  8"-36" tall corn or 15 days prior to tassel emergence, whichever comes first. Use drop nozzles, see label. <u>Coarse      Medium      Fine</u> .5 pt.    .5 pt.    .5 pt.	Apply to actively growing annual and certain perennial broadleaf weeds. Consult label for broadleaf weeds controlled. Avoid cultivating for 7 days following application. Use nozzles designed for coarse sprays at lower pressures. Consult label for detailed restrictions on drift and sensitive crops in the vicinity. Drop nozzles are recommended for late post applications to improve weed coverage and to reduce the potential for crop injury. Adding Choice, Weather Master, 28% or AMS may enhance control. Under dry conditions add a NIS such as Activator 90 or Liberate.												



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Product	Formulation	Rate Per Acre	Comments
Banvel or Rifle + 2,4-D Amine (Tankmix)	4SC  4L	.5 pt.  .25 pt.	Broadcast on corn up to 8" tall. Early postemergence applications are not recommended. Drop nozzles are to be used when corn height is 8" or taller. Keep spray off corn leaves and out of the whorl to lessen crop injury potential and for improved weed coverage. DO NOT APPLY IF: corn is more than 24" tall. Consult labels for additional precautionary statements on drift, crop injury and use directions. Delay cultivation for at least 7 days or until corn is growing normally. 2 to 4 hour rainfast.
Basis® Blend + COC or MSO or NIS + AMS	30SG	0.825-1.65 oz. + 1 gal/100 gal or 2 qts/100 gal or 1 qt/100 gal + 2 lbs/A	Apply POST to corn in the spike through 2 collar stage. Do not apply to corn having 3 fully emerged collars or over 6" tall. (Recrop to soybean is 15 days when 0.825 oz/a used; 30 days to STS soybean when using up to and including 1.25 oz
RU atrazine or Banvel or Clarity/Strut or RU Rifle Plus or Callisto + NIS + UAN	30SG  90DF  4SC  4SL  3.2F  4SC	.825 oz. + .33-1 lb. or .25-.5 pt. or .25-.5 pt. or 1 pt. or 2-3 ozs. + 1-2 pts./100 gal. + 2-4 qts.	Apply up to 3 collar corn. Do not apply to corn over 6" tall. For increased control of broadleaf weeds. See above comments and label for additional information. If using high rate of Banvel/Clarity, Strut, or Marksman replace COC with 2 qt./100 gal. NIS to increase crop safety.
Beacon + COC or NIS + AMS	75DF	.76 oz. + 1 qt. or 1 qt./100 gal. + 2-4 lbs.	See label for weed/corn height range. Do not use on Counter treated fields unless IR corn. Check rotational guidelines. Can be tankmixed with Buctril or Broclean and atrazine. Marksman (Rifle Plus), Banvel/Clarity or Rifle/Strut or 2,4-D see label for rates and directions.
Beacon + Accent or Accent Q + COC or NIS + AMS	75DF  75DF  54.5%WDG	.38 oz. + .33 oz. or .45 oz. + 1 qt. or 1 qt./100 gal. + 2-4 lbs.	For use following a preemergence treatment of a grass herbicide as a rescue treatment for escaped grasses and broadleaf weeds. Use a nonionic surfactant or COC with or without liquid nitrogen or ammonium sulfate. 1/8 pt. of Banvel/Clarity or Rifle/Strut can be added while still using COC and nitrogen.
RU atrazine + COC or NIS + AMS	75DF  4L	.38 oz. + 2-3 pts. + 1 qt. or 1 qt./100 gal. + 2-4 lbs.	Use a nonionic surfactant or COC with or without liquid nitrogen or ammonium sulfate.



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Product	Formulation	Rate Per Acre			Comments
Beacon + Banvel or Rifle or Clarity/Strut + NIS + AMS	75DF  4S  4SL	.38 oz. + 2-8 ozs. or 2-8 ozs. or 2-8 ozs. + 1 qt./100 gal. + 2-4 lbs.			Use only a nonionic surfactant when using more than 1/8 pt./A of Banvel/Rifle or Clarity/Strut.
<b>RU</b> Bicep II MAGNUM®	5.5L	Coarse 1.6 qts.	Medium 2.1 qts.	Fine 2.1-2.58 qts.†	†Refer to label for details. Apply before grass and broadleaf weeds reach the 2-leaf stage. Consult label for corn height restriction.
<b>RU</b> Bicep II Lite MAGNUM®	5.0L	Coarse 1.1 qts.	Medium 1.5 qts.	Fine 1.5-1.9 qts.†	†Refer to label for details. Apply before grass and broadleaf weeds reach the 2-leaf stage. Consult label for corn height restriction.
<b>RU</b> Atrazine or <b>RU</b> Brozine + Accent Q + NIS + UAN or AMS	3F  54.5%WDG	1.5-2 pts.† or 3 pts.††  + .9 oz. + 1 qt./100 gal. + 2-4 qts. or 2-4 lbs.			†Apply 1½ - 2 pts. PRE or postemergence before corn is 12" tall. ††Apply 3 pts. at 4 leaf stage, but before corn is 12" tall. For optimum weed control, treat when weeds are in recommended growth stage. Refer to label.
Broclean + Accent Q + NIS + UAN or AMS	2EC  54.5%WDG	1 pt.† or 1.5 pts.†† + .9 oz. + 1 qt./100 gal. + 2-4 qts. or 2-4 lbs.			†Apply to field corn PRE or postemergence, use 1 pt. Buctril/Broclean when corn is up to 36" tall. ††Use 1½ pts. from the 4-leaf stage up to 36" tall. Use drop nozzles when corn is 24 – 36" tall. The use of N solution may result in more leaf burn.
<b>RU</b> Broclean + atrazine	2EC  4L or 90DF	.75-1 pt.† or 1.5 pts.†† + 1-2.4 pts. or .5-1.66 lbs.			†Apply ¾-1 pt. to field corn postemergence before corn is 12" tall. ††Use 1½ pts. from the 4-leaf stage up to 12" tall.
Broclean + Banvel/Rifle	2EC  4L	1 pt.† or 1.5 pts.†† + .125 - .5 pt.			†Apply to field corn postemergence, use 1 pt. Buctril/Broclean when corn is up to 36" tall or less than 15 days prior to tassel emergence. ††Use 1½ pts. from the 4-leaf stage up to 36" tall or less than 15 days prior to tassel emergence. Use drop nozzles when corn is 24 – 36" tall. Use the most restrictive crop stage. For control of annual broadleaf weeds plus Canada thistle when applied from the 8" to bud stage and field bindweed up to the midbloom stage.



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Product	Formulation	Rate Per Acre	Comments		
Broclean + Beacon + NIS	2EC 75DF Various	1 pt. + .38-.76 oz. (1-2 pkg/4 acres) + 1 qt./100 gal.	Apply to field corn from 4-20" in height.		
Broclean + 2,4-D	2EC 4 lb. a.i.	1 pt.† or 1.5 pts.†† + .125 -.25 lb. a.i.	†Apply to field corn postemergence, but prior to tassel emergence, use 1 pt. Buctril/Broclean. ††Use 1½ pts. from the 4-leaf stage but prior to tassel emergence. Use drop nozzles if crop is taller than 8". Controls annual broadleaf weeds. At recommended rates improves pigweed and kochia control. For Canada thistle burndown and field bindweed suppression up to the midbloom stage use 1/8 -1/4 lb. a.i./A of 2,4-D with Buctril.		
Broclean + Stinger	2 EC 3S	1 pt.† or 1.5 pts.†† + .33 -.66 pt.	†Apply to field corn postemergence, up to 24" tall, use 1 pt. Buctril/Broclean. ††Use 1½ pts. from the 4-leaf stage up to 24" tall. Use on corn for broadleaf weed control and improved Canada thistle control. Refer to label for crop and weed sizes for optimum control.		
Cadence	6.4EC	Coarse ≤3%OM 1.5-2.25 pts. 3-7%OM 1.5-2.5 pts. ≥7%OM 2-3 pts.	Medium ≤3%OM 1.5-2.5 pts. 3-7%OM 1.5-2.5 pts. ≥7%OM 2.5-3.75 pts.	Fine ≤3%OM 1.5-2.75 pts. 3-7%OM 2-3 pts. ≥7%OM 3-3.75 pts.	DO NOT apply to corn greater than 11" tall. Refer to label for additional information. Does not control emerged weeds. See label for tankmix partners.
Cadet + NIS or COC + UAN or AMS	.91EC	.6 -.9 oz.† + 1 qt./100 gal. or 1-2 pts. + 1-2 qts. or 2-2.5 lbs.	Apply to corn from preplant until the corn is 48 inches tall or tasseling, whichever comes first. Cadet may be applied with burndown herbicides to improve weed control.		
Callisto + COC + UAN or AMS	4SC	3 ozs. + 1 gal./100 gal. + 2.5 gals./100 gal. or 8.5 lbs./100 gal.	May be applied with a preemergence grass herbicide such as Dual II MAGNUM. May be mixed with atrazine for improved control of many broadleaf weeds. Add aerial application if not tank mixed with atrazine. See state for label. Do not apply in close timing with O.P. insecticides.		
RU Callisto + atrazine + COC + UAN or AMS	4SC 4L	3 ozs. + .5-1 pt. + 1 gals./100 gal. + 2.5 gals./100 gal. or 8.5 lbs./100 gal.	May be applied with a preemergence grass herbicide such as Dual II MAGNUM. Tankmix with atrazine provides for improved control of many broadleaf weeds. Do not apply in close timing with O.P. insecticides. Do not use if corn is over 12" tall.		
Callisto GT	4.18 lbs./gal	2 pt/A	Apply before corn reaches 30" corn or V8, Requires the use of an adjuvant for optimum control, Add AA-TREX® 4L herbicide or dicamba as a tank mix partner for resistance management, 2PT= 3oz Calisto and 29oz of Touchdown Total.		



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Product	Formulation	Rate Per Acre	Comments						
<b>RU</b> Callisto Xtra + COC† + UAN† or AMS†	3.7SC	20-24 ozs. + 1 gal./100 gal. + 2.5 gals./100 gal. or 8.5-17 lbs./100 gal.	†For use in field corn, seed corn, field corn grown for silage. May be applied with a preemergence grass herbicide (i.e. Dual II MAGNUM). Tankmixing with atrazine improves control of many broadleaf weeds. Do not apply in close timing with O.P. insecticides. Do not use if corn is over 12" tall. 24 oz. of Callisto Xtra = 3 ozs. Callisto + 1.2 pts. (.6 lb.) of atrazine.						
Capreno™ + COC† + UAN or AMS	3.45 SC	3 ozs. + 1 gal./100 gal. + 1.5 qts or 8.5 lbs./100 gal.	†For maximum control. Broadcast apps. must be made to corn from V1 through V6 stages of growth only. Suggested tankmix partners include atrazine, Buctril/Broclean, glyphosate, Liberty 280 SL and Laudis. Refer to label for details. Also, see label for OP insecticide restrictions.						
Capreno + Clarity/Strut or Banvel/Rifle + COC + UAN or AMS	3.45 SC	3 ozs. + 4-16 ozs. + 1 gal./100 gal. + 1.5 qts or 8.5 lbs./100 gal.	"Post on field, silage, and seed corn for control of many broadleaf and grassweeds. Tankmixing with atrazine improves the spectrum and residual control. Apply from crop emergence V1 to V6 for field corn for control of difficult or resistant weeds."						
Capreno + atrazine + COC + UAN or AMS	3.45 SC	3 ozs. + .5-1 lb. + 1 gal./100 gal. + 1.5 qts or 8.5 lbs./100 gal.	Post on field, silage, and seed corn for control of many broadleaf and grassweeds. Apply from crop emergence to V6 for field corn. Follow atrazine height restrictions.						
Cinch®	7.64 lb ai/ gal EC	1-2 pt.	Will not control emerged weeds. Apply to corn up to 40" tall. Many tankmix partners are available.						
Clarity or Strut + NIS + UAN or AMS	4SL	<table border="1"> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> <tr> <td>½ pt.</td> <td>1 pt.</td> <td>1 pt.</td> </tr> </table> + 1-2 pts./100 gal. + 2-4 qts. or 2.5 lbs.  Spike to 5th true leaf stage or 8" tall, whichever comes first. 6th leaf emerging from whorl or if corn is taller than 8" up to 36" or 15 days before tassel emergence: 1/2 pt.†	Coarse	Medium	Fine	½ pt.	1 pt.	1 pt.	†Drop nozzles are recommended for late post applications to improve weed coverage and to reduce the potential for crop injury. Adding NIS, UAN, or AMS may enhance control. Apply to actively growing annual and certain perennial broadleaf weeds. Consult label for broadleaf weeds controlled. Avoid cultivating for 7 days following application. Use nozzles designed for coarse sprays at lower pressures. Consult label for detailed restrictions on drift and sensitive crops in the vicinity.
Coarse	Medium	Fine							
½ pt.	1 pt.	1 pt.							
Clarity or Strut + Hornet WDG or Stinger	4SL .856 lb. a.i. 3S	See rates for "Clarity" and "Strut" in above box.  + .6-1.2 ozs. or 1.5-3 ozs.	For control of broadleaf weeds including waterhemp, velvetleaf, ragweed, and improved Canada thistle control as well as provide residual broadleaf control. Apply early post (up to 8" corn) when weeds are actively growing and Canada thistle plants are between 4" and bud stage. Use 1-2 qts. of UAN or 1-2 lbs. of AMS with this tankmix. NIS at 1 qt./100 gal. may be added to improve broadleaf control under dry conditions. DO NOT use COC as severe crop injury may occur.						



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Product	Formulation	Rate Per Acre			Comments		
RU	Corvus™	2.63 SC	Coarse	Medium	Fine	May be applied alone or in tank mix with atrazine up to the 2 leaf collar growth stage (V2).. Do not use any other tankmix partner on emerged corn	
			<2%OM † 3.33 ozs. ≥2%OM 5.6 ozs.	<2%OM † 5.6 ozs. ≥2%OM 5.6 ozs.	<2%OM † 5.6 ozs. ≥2%OM 5.6 ozs.		
Dual II MAGNUM	7.64E	1-2 pts.			Will not control emerged weeds. Apply to corn up to 40" tall. Many tankmix partners are available.		
Dual II MAGNUM or Cinch + Accent or Accent Q + NIS + UAN or AMS	7.64E 75WG 54.5%WDG	1-1.67 pts.  .33-.45 oz. or .45-.6 oz. + 1 qt./100 gal. + 2-4 qts. or 8.5-17 lbs./100 gal.			Apply on corn up to 20" tall. Direct spray to the base of corn plants in excess of 5" tall. Will not control emerged weeds. Can add several other products including Clarity/Strut and atrazine to burn down existing growth.		
RU Fultime® NXT	4.04CS	Coarse 2.9 qts.	Medium 2.9-3.7 qts.	Fine 3.2-3.7 qts.	Do not apply postemergence after corn is 11" tall. Must be applied prior to weed emergence or a tankmix controlling emerged weeds must be used.		
Harness	7EC	Coarse 1.25-1.75 pts. ≥3%OM 1.75 pts.	Medium 1.75-2.25 pts. ≥3%OM 1.75-2.25 pts.	Fine 1.75-2.25 pts. ≥3%OM 2.25-2.75 pts.	Refer to label for rates for soils with 6% OM or more. Apply before corn reaches 11" in height. Weeds emerged at the time of application are not controlled by this product. See label for tankmix options.		
RU Harness Xtra	5.6 L	Coarse ≤3%OM 1.4 qts. ≥3%OM 1.7 qts.	Medium ≤3%OM 1.7-2.4 qts. ≥3%OM 2.3-2.6 qts.	Fine ≤3%OM 2.3-2.6 qts. ≥3%OM 2.3-3 qts.	Refer to label for rates for soils with 6% OM or more. Apply before corn reaches 11" in height. Weeds emerged at the time of application are not controlled by this product. Apply before weeds reach the 2-leaf stage. See label for tankmix options.		
RU Harness Xtra	6 L	Coarse 1.8 qts.	Medium 1.8-2.3 qts.	Fine 2-2.3 qts.	Can use up to 2.7 qts./A on medium and fine textured soils in areas of heavy weed infestations.		
Hornet WDG + COC or MSO or NIS + UAN or AMS	.856 lb. a.i.	1.6-4 ozs. + 1 gal./100 gal. or 1 gal./100 gal. or 1 qt./100 gal. + 2.5 gal./100 gal. or 2-4 lbs.			Apply from the time corn emerges (spike) until corn reaches 20" in height or the V6 stage, whichever occurs first. May be applied as a directed postemergent application to corn that is 20-36" in height or has more than 6 leaf collars. Use only drop nozzles and direct spray as low as possible to avoid corn plants. For control of grass weeds, Hornet WDG can be tankmixed with Accent, Basis Gold, or Steadfast. For an expanded spectrum of broadleaf weed control, Hornet WDG can be tankmixed with Atrazine, Banvel/Rifle, Buctril/Broclean, Callisto, Clarity/Strut, Distinct, or 2,4-D. Refer to the label for weeds controlled and application timings. Avoid cultivating for 7 days following application. Apply in a minimum 20 gals. water. Use nozzles designed for coarse sprays at lower pressures. Consult label for detailed restrictions on drift and sensitive crops in the vicinity. Formulation provides reduced vapor drift and can be used where sensitive nearby plants are a concern.		



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Product	Formulation	Rate Per Acre			Comments						
Impact + MSO + UAN or AMS + <b>RU</b> Atrazine	2.8 SC  4L	<p>.75-1 oz.† + 1 gal./100 gal. + 1.25-2.5 gal. or 8.5-17 lbs./100 gal. + .25-1 lb. a.i.</p>			<p>†See supplemental label for use of 1 oz/A to control additional grasses. POST on all types of corn including inbreds. May be applied up to 45 days preharvest. Tank-mix with atrazine up to 12" corn height for improved weed control. No restrictions following insecticides applied at planting. Tank-mix with glyphosate at 0.75 oz/A for control of tolerant broadleaf weeds. Rainfast in one hour. Even though the 0.5 oz rate is labeled with glyphosate, we are recommending 0.75 fl oz/a for resistance management. MSO is the preferred recommendation due to best performance.</p>						
<b>RU</b> Keystone® <b>RU</b> NXT/ Cadence* ATZ NXT	5.6L	<table> <thead> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> </thead> <tbody> <tr> <td>≤3%OM 1.4 qts. 3%OM+ 1.7 qts.</td> <td>&lt;3%OM 1.7-2.4 qts. 3%OM+ 2.3-2.6 qts.</td> <td>&lt;3%OM 2.3-2.6 qts. 3%OM+ 2.3-3.0 qts.</td> </tr> </tbody> </table>			Coarse	Medium	Fine	≤3%OM 1.4 qts. 3%OM+ 1.7 qts.	<3%OM 1.7-2.4 qts. 3%OM+ 2.3-2.6 qts.	<3%OM 2.3-2.6 qts. 3%OM+ 2.3-3.0 qts.	<p>Do not apply postemergence after corn is 11" tall. Must be applied prior to weed emergence or in a tank mixture for optimal control of emerged weeds. Refer to label for additional information.</p>
Coarse	Medium	Fine									
≤3%OM 1.4 qts. 3%OM+ 1.7 qts.	<3%OM 1.7-2.4 qts. 3%OM+ 2.3-2.6 qts.	<3%OM 2.3-2.6 qts. 3%OM+ 2.3-3.0 qts.									
<b>RU</b> Keystone® LA NXT/ <b>RU</b> Cadence Lite ATZ NXT	6.0	<table> <thead> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> </thead> <tbody> <tr> <td>1.8 qts.</td> <td>1.8-2.3 qts.</td> <td>2.0-2.3 qts.</td> </tr> </tbody> </table>			Coarse	Medium	Fine	1.8 qts.	1.8-2.3 qts.	2.0-2.3 qts.	<p>Do not apply postemergence after corn is 11" tall. Must be applied prior to weed emergence or in a tank mixture for optimal control of emerged weeds. Refer to label for additional information.</p>
Coarse	Medium	Fine									
1.8 qts.	1.8-2.3 qts.	2.0-2.3 qts.									
<b>RU</b> Laddok S-12 + COC + UAN or AMS	5.0F	<p>1.33-2.33 pts. + 1 qt. + 2-4 qts. or 2.5 lbs.</p>			<p>For control of grass and broadleaf weeds in corn. Apply POST to corn up to 12" in height. Always add AMS at 2.5 lbs./A. May be tank-mixed with atrazine or Callisto for residual weed control. Rainfast in 4 hours. Increase spray volume improves weed control especially under dense weed pressure.</p>						
<b>RU</b> Laddok S-12 + Banvel/Rifle or Clarity/Strut + UAN or AMS	5.0F 4S 4SL	<p>1.33-2.33 pts. + up to 1 pt. or up to 1 pt. + 2 qts. or 2.5 lbs.</p>			<p>For control of grass and broadleaf weeds in corn. Apply POST to corn from spike to 5th true leaf or 8" tall, whichever comes first. Always add AMS at 2.5 lbs/A. May be tank-mixed with atrazine or Callisto for residual weed control. Rainfast in 4 hours. Increase spray volume improves weed control especially under dense weed pressure.</p>						
Laudis + MSO + AMS or UAN	3.5SC	<p>3 ozs. + 1 gal./100 gal. + 1.5 lbs. or 1.5 qts.</p>			<p>Post on field, silage, seed corn and sweet corn for control of many broadleaf and grass weeds. Tankmixing with atrazine improves the spectrum of control. Apply from crop emergence to V8 for field corn or popcorn and up to V7 for sweet corn.</p>						
Laudis + Clarity/Strut or Banvel/Rifle + MSO + AMS or UAN	3.5SC	<p>3 ozs. + 4-16 ozs. + 1 gal./100 gal. + 1.5 lbs. or 1.5 qts.</p>			<p>Post on field, silage, seed corn and sweet corn for control of many broadleaf and grass weeds. Tankmixing with atrazine improves the spectrum of control. Apply from crop emergence to V8 for field corn or popcorn and up to V7 for sweet corn.</p>						



## CORN-POSTEMERGENCE



Product	Formulation	Rate Per Acre		Comments	
Laudis + atrazine + MSO + AMS or UAN	3.5SC	3 ozs. + .5-1 lbs. + 1 gal./100 gal. + 1.5 lbs. or 1.5 qts.		Post on field, silage, seed corn and sweet corn for control of many broadleaf and grass weeds. Tankmixing with atrazine improves the spectrum of control. Apply from crop emergence to V8 for field corn or popcorn and up to V7 for sweet corn.	
<b>RU</b> Lexar EZ	3.7 lb. a.i.	$\leq 3\% \text{OM}$ 3 qts.† $\geq 3\% \text{OM}$ 3.5 qts.†		†Recommended to apply Lexar early POST at a rate down to 2.25 qts./A in tank mixture with a solo glyphosate product that is registered for use over-the-top in glyphosate tolerant field corn. Consult label for details and other tankmix options. Apply before corn reaches 12" in height.	
Liberty 280 SL + AMS	2.34SL	22 ozs. + 3 lbs.† †Refer to label.		"For post-emergence broadcast use on Liberty-Link corn. Apply over-the-top from emergence until corn is 24" tall or in the V7 stage of growth, whichever occurs first.	
<b>RU</b> Lumax EZ	3.94 lb. a.i.	$\leq 3\% \text{OM}$ 2.7 qts.† $\geq 3\% \text{OM}$ 3.25 qts.†		†Recommended to apply Lumax early POST at a rate down to 2 qts./A in tank mixture with a solo glyphosate product that is registered for use over-the-top in glyphosate tolerant field corn. Consult label for details and other tankmix options. Apply before corn reaches 12" in height.	
Metribuzin	DF 75%	Refer to label for Sencor and tankmix partner rates.		Apply after emergence up to just prior to tasseling (tankmix partner may have earlier restrictions, refer to label). Refer to label to alleviate off target crop and desirable plant risks. Tankmix partners include: atrazine, Banvel/Rifle, Clarity/Strut, Basagran, Buctril/Broclean, Laddok S-12, Marksman/Rifle Plus, Resource and many others. Follow usage rates and restrictions found on these labels.	
Metribuzin + Buctril/Broclean	DF 75% 2 EC	1.6-2 ozs. + 1 pt.		Apply when corn is fourth true leaf (V4) or greater, but before the crop canopy closes the row. Do not use on corn grown for seed, sweetcorn or popcorn. Do not use liquid fertilizer or adjuvants.	
Metribuzin + Banvel/Rifle or Clarity/Strut	DF 75% 4 SC 4 SL	Coarse 2 ozs. + 0.5 pt. or 0.5 pt.	Medium 2 ozs. + 0.5-1 pt. or 0.5-1 pt.	Fine 2 ozs. + 0.5-1 pt. or 0.5-1 pt.	Apply from emergence through 5th true leaf or 8" tall, whichever comes first.
NorthStar + COCT or NIS + UAN or AMS	39.9% a.i.	5 ozs. + 1 qt. or 1 qt./100 gal. + 2-4 qts. or 2-4 lbs.		For broadleaf control with grass activity. Apply to corn 4-20" tall (V2-V6). †Use COC or MSO up to 12" tall corn, NIS thereafter. May be applied over-the-top directed, or semi-directed when weeds are at specified stage of growth (see label) and when corn is 4-20" (V2-V6) tall. May be applied from 20" tall (V6), up to 36" tall, or 15 days prior to tasseling, whichever comes first if directed or semi-directed using drop nozzles. Can be tankmixed with Accent for additional grass control.	



## CORN-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Outlook	6 EC	Coarse	Medium	Fine	May be used post on up to 12" tall corn. Lay-by applications are permissible when corn is greater than 12" tall up to 36" tall; direct the application beneath the corn canopy. Outlook may be applied tankmixed or applied sequentially with many products. Use the most restrictive labeling when using tankmixes. Refer to the labels.
		<3%OM 12-14 ozs. ≥3%OM 14-18 ozs.	<3%OM 14-18 ozs. ≥3%OM 18-21 ozs.	<3%OM 14-18 ozs. ≥3%OM 18-21 ozs.	
Permit + COC or NIS	75% WDG	.66-1.33 ozs. + 1 gal./100 gal. or 1-2 qts./100 gal.			Use following a Pre-herbicide program for control of annual broadleaf weeds, such as cocklebur and velvetleaf. Also excellent on yellow nutsedge. Rate dependent on weed species and weeds stage of growth. Refer to label. Can be applied over the top or with drop nozzles spike through lay-by stage of growth. See the label for tankmix options.
Prowl or Stealth + Accent Q + NIS + UAN	3.3 EC 54.5%WDG	1.8-3.6 pts. + .45-.9 oz. + 1 qt./100 gal. + 2 qts.			Apply to corn at 1-5 leaf stage when weeds are 2-4" tall. Additional Tankmixes can be used, see label for products, rates, and more information. As a post-directed spray, can be used until corn is 30" tall or V8, whichever comes first. Do not apply in liquid fertilizer.
Prowl H2O	3.8 CS	Coarse	Medium	Fine	Apply post until field corn is 30" tall or in the V8 stage, whichever is more restrictive. If corn canopy prevents application from reaching the soil, use drop nozzles and apply as a directed spray.
Prowl or Stealth + Rifle Plus	3.3 EC	1.8-3.6 pts. +			Apply post (spike) until 5-leaf stage or 8" tall, whichever comes first. Plant corn at least 2" deep. Cultivate or rotary hoe if rain is not received within 7 days.
	3.2 F	Coarse	Medium	Fine	
Realm® Q + COC or NIS + AMS or UAN	38.75% WDG + 1 gal/100 gal or 1 qt/100 gal + 2 lbs/A or 2 qts/A	4 oz			Apply POST to field corn up to 20" tall or up to and including V6, whichever is more restrictive. Do not apply to corn >20" or exhibiting 7 or more leaf collars, whichever is more restrictive.



## NOTES





## WELCOME TO THE CORVUS ZONE.

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**Corvus®** is the only corn herbicide that delivers 3 levels of defense against grass and broadleaf weeds, including tough-to-control and resistant weeds.

- Burndown** takes out early weeds.
- Residual** prevents new weeds.
- Reactivation** with rain gets late weeds.

Keep it weed-free all season with Corvus, the #1 pre-emergence corn herbicide.

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## CORN-POSTEMERGENCE



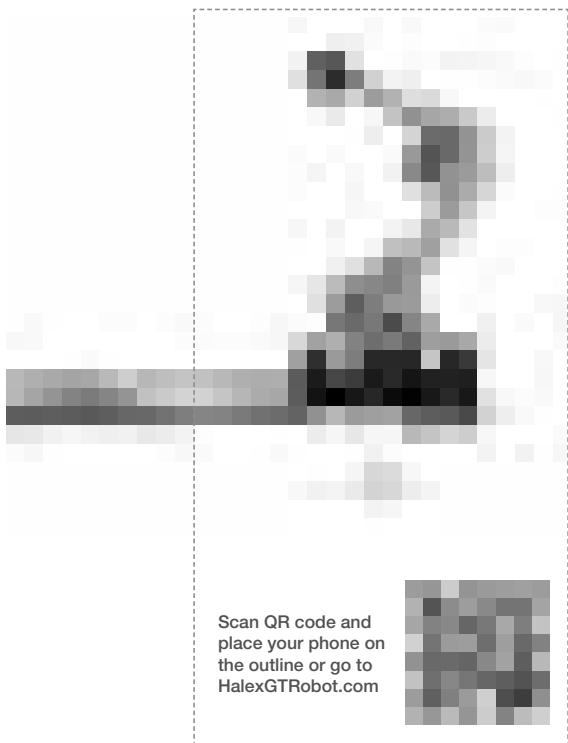
Product	Formulation	Rate Per Acre	Comments
Resolve® Q + COC	22.4 DF	1.25 ozs.† + 1 gal./100 gals.†  †Refer to label.	Do not exceed 2.5 ozs./season. Apply to corn up to 20" tall. Do not apply to corn >20" tall or exhibiting 7 or more leaf collars; whichever is more restrictive. Tankmix options available such as Resolve Q plus glyphosate on glyphosate tolerant corn or with glufosinate or LibertyLink corn.
Resource + COC + AMS or UAN	.86 EC	4-6 ozs. (8 ozs. can be used post-directed with drop nozzles) + 1-2 pts. + 2-2.5 lbs. or 1-2 qts.	Excellent control of velvetleaf and fair control of common lambsquarters. Apply to field corn from 2 to 10 leaf at up to 6 ozs./A broadcast over the top. Use drop nozzles at 8 ozs./A. Do not apply more than 8 ozs./A per season. Registered tankmixes include: Accent, Atrazine, Banvel/Rifle, Beacon, Buctril/Broclean, Clarity/Strut, Hornet, Liberty 280 SL, Laddok, Marksman/Rifle Plus, Permit, Stinger and 2-4-D. See label for rates, weeds controlled and application methods.
RU Rifle Plus	3.2 F	Coarse 2 pts. Medium 3.5 pts. Fine 3.5 pts.	Apply between spike and 5-leaf stage or 8" tall, whichever occurs first.
RU Rifle Plus + UAN or AMS	3.2F	Coarse 2 pts. Medium 3.5 pts. Fine 3.5 pts.  + 2-4 qts. or 2.5 lbs.	Apply to broadleaf weeds. Apply from spike to 5th true leaf stage of corn or 8" tall, whichever comes first. Apply in 10 to 50 gals. of water with nozzles designed for coarse sprays at lower pressures (maximum 20 PSI).
RU Rifle Plus + Hornet or Stinger + UAN or AMS	3.2F .856 lb. a.i. 3S	Coarse 2 pts. Medium 3.5 pts. Fine 3.5 pts.  + .6-1.6 ozs. or 1.5-3 ozs. + 2-4 qts. or 2.5 lbs.	For control of broadleaf weeds including waterhemp, velvetleaf, ragweed, and improved Canada thistle control as well as provide residual broadleaf control. Apply early post (up to 8" corn or 5th true leaf stage of growth) when weeds are actively growing and Canada thistle plants are between 4" and bud stage. Use the higher rate in areas of heavy weed infestations.
RU Rifle Plus + Outlook	3.2F 6 EC	Coarse 2 pts. Medium 3.5 pts. Fine 3.5 pts.  Coarse ≤3%OM 12-14 ozs. ≥3%OM 14-18 ozs. ≤3%OM 14-18 ozs. ≥3%OM 18-21 ozs. ≤3%OM 18-21 ozs.	Apply early post before field corn is beyond the 5 leaf stage or 8" tall, whichever comes first. Not as effective when grass weeds are beyond 1". Broad spectrum broadleaf and grass control.
Saber	4 lb. a.i.	Spike to 4-leaf or up to 8" tall, whichever occurs first 5-1 pt. 8-36", but before tassel† 5-1 pt.	†Directed spray, use drop nozzles. Ground application only. Apply early postemergence to actively growing broadleaf weeds. Use low rate only on small, succulent annual broadleaf weeds. Can be used late post prior to tassel emergence. See label for rates, precautions and further instructions.
Solstice + COC + UAN or AMS	4.0 SC	2.5 – 3.15 oz + 1 gal./100gal. + 2.5% v/v or 8.5 lbs./100gal.	Apply Early Post up to V8 stage corn: Weeds up to 5" tall. 10 GPA minimum. Medium spray droplets, good pressure to penetrate weed canopy and get good coverage. Do not use UAN or AMS in applications to Sweet Corn or Yellow Popcorn. NIS is recommended with Sweet Corn or Yellow Popcorn applications. Refer to label for insecticide precautions and read and follow all label directions.

## CORN-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Solstice + Atrazine + COC + UAN or AMS	4.0 SC	2.5 – 3.15 oz + 1 gal./100gal. + 2.5% v/v or 8.5 lbs./100gal.	Apply Early Post up to V8 stage corn but before 12" tall corn: Weeds up to 5" tall. 10 GPA minimum. Medium spray droplets, good pressure to penetrate weed canopy and get good coverage. Do not use UAN or AMS in applications to Sweet Corn or Yellow Popcorn. NIS is recommended with Sweet Corn or Yellow Popcorn applications. Refer to label for insecticide precautions and read and follow all label directions.
Salvo	5E	<u>Spike to 4-leaf or up to 8" tall, whichever occurs first</u> 3.2-9.6 ozs. or <u>8-36", but before tassel†</u> 4.8-9.6 ozs.	†Directed spray, use drop nozzles. Ground application only. Apply early postemergence to actively growing broadleaf weeds. Use low rate only on small, succulent annual broadleaf weeds. Can be used late post prior to tassel emergence. See label for rates, precautions and further instructions.
Spirit + COC or NIS† + AMS or UAN	57 WG	1 oz. + 1-4 pts. or 1-2 qts./100 gal. + 2-4 lbs. or 2-4 qts.	Apply POST broadcast when corn is 4-24" tall. Applications made when corn height is 20-24" or exhibits more than 6 leaf collars (V6), whichever comes first; should be directed using drop nozzles. See label for state and pH restrictions. †In drier climates (i.e., the western cornbelt), COC is preferred when applying Spirit alone.
Starane® Ultra	2.8 EC	0.4 pt.	Apply POST broadcast on corn up to V5 and may be applied beyond V5 if a directed spray using drop nozzles. Include NIS under dry conditions. Some hybrids that are sensitive to phenoxy herbicides may show injury.
Status + NIS or COC or MSO + UAN or AMS	56% WG	5-10 ozs. + 1 qt./100 gal. or 1-2 pts. or 1-2 pts. + 5 qts./100 gal. or 5-17 lbs./100 gal.	Apply POST to corn from 4-36" tall (V2-V10) or within 15 days before tassel emergence, whichever occurs first. Refer to product label for restrictions and adjuvant recommendations.
Steadfast Q + COC or MSO + UAN or AMS	37.7%WDG	1.5 ozs. + 1 gal./100 gal. or .5 gal./100 gal. + 2 qts. or 2 lbs.	Apply Steadfast to field corn (see label for restrictions) from emergence up to 20" height or 6 collar stage, whichever is more restrictive (In KS, OK and TX, limit Steadfast applications to corn that is up to 12" tall, up to and including 5 leaf collars, whichever is more restrictive). See label for soil insecticides precaution. May be tankmixed with: atrazine, dicamba, Marksman/Rifle Plus, Hornet, or Callisto. See label for additional tankmix options and restrictions. When tankmixing with Callisto, MSO at 0.5 gal./100 gal. may be substituted for COC provided the Callisto rate is not over 1.5 ozs./A.

A corn herbicide with the work ethic of a machine.



Halex® GT is Glyphosate with Residual.™ It combines three powerful modes of action to provide your best opportunity for one-pass weed control with a single product. Growers using a planned two-pass program should consider Halex GT as your post-emerge partner following Lexar® EZ or Lumax® EZ. To learn more, visit us online at [HalexGT-herbicide.com](http://HalexGT-herbicide.com) or talk to your Syngenta retailer.

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**more**  
CORN

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## CORN-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Steadfast Q + Callisto + COC + UAN or AMS	37.7%WDG  4 SC	1.5 ozs. + 1.5-3 ozs.  + 1 gal./100 gal. + 2 qts. or 2 lbs.			Apply Steadfast to field corn (see label for restrictions) from emergence up to 20" height or 6 collar stage, whichever is more restrictive (In KS, OK and TX, limit Steadfast applications to corn that is up to 12" tall, up to and including 5 leaf collars, whichever is more restrictive). See label for soil insecticides precaution. May be tankmixed with: atrazine, dicamba, Marksman/Rifle Plus, Hornet, or Callisto. See label for additional tankmix options and restrictions. When tankmixing with Callisto, MSO at 0.5 gal./100 gal. may be substituted for COC provided the Callisto rate is not over 1.5 ozs./A.
Steadfast Q + Clarity/Strut + COC + UAN or AMS	37.7%WDG  4 SL	1.5 ozs. + 2-4 ozs. + 1 gal./100 gal. + 2 qts. or 2 lbs.			
Steadfast Q + Status + COC + UAN or AMS	37.7%WDG  56% WG	1.5 ozs. + 2.5-5 ozs. + 1 gal./100 gal. + 2 qts. or 2 lbs.			
Stinger®	3S	Field Corn: .25-.66 pt. (or 4-11 ozs.)			Apply postemergence to corn through 24". Controls Canada thistle (at higher rate in the rate range), cocklebur, sunflower, Jerusalem artichoke, ragweeds and others. For Canada thistle, apply when at least 4" tall, but before the bud stage. Use higher rates for greater stand reduction.
		Pop and Sweet Corn: .33-.66 pt. (or 5.5-11 ozs.)			
SureStart® II	4.25 SE	Coarse	Medium	Fine	May be applied early POST to corn up to 11" tall. Applications may be made from prior to weed emergence up to 1-2" weeds. Will provide limited activity on small emerged broadleaf weeds, but won't control established or germinated grass weeds present at application.
		<3%OM 1.5-2 pts. ≥3%OM 1.5-2 pts.	<3%OM 1.5-2.5 pts. ≥3%OM 1.75-3 pts.	<3%OM 2-3 pts. ≥3%OM 2-3 pts.	
Surpass® NXT	7EC	Coarse	Medium	Fine	Do not apply postemergence after corn is 11" tall. Must be applied prior to weed emergence or in a tank mixture for optimal control of emerged weeds. Refer to label for additional information.
		<3%OM 1.25-1.75 pts. ≥3%OM 1.75 pts.	<3%OM 1.75-2.55 pts. ≥3%OM 1.75-2.25 pts.	<3%OM 1.75-2.55 pts. ≥3%OM 1.75-2.25 pts.	



## CORN-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
TripleFLEX	4.25 lb. a.i.	Coarse ≤3%OM 1.5 pts. ≥3%OM 1.5 pts.	Medium ≤3%OM 1.5-1.75 pts. ≥3%OM 1.75 pts.	Fine ≤3%OM 2 pts. ≥3%OM 2 pts.	May be applied early POST to corn up to 11" tall. Applications may be made from prior to weed emergence up to 1-2" weeds. Will provide limited activity on small emerged broadleaf weeds, but won't control established or germinated grass weeds present at application. See Supplemental Label for higher use rates in fine soil types.
Triple FLEX®II	4.25 lb. a.i.	Coarse ≤3%OM 1.5 pts. ≥3%OM 1.5 pts.	Medium ≤3%OM 1.5-1.75 pts. ≥3%OM 1.75 pts.	Fine ≤3%OM 2 pts. ≥3%OM 2 pts.	May be applied early POST to corn up to 11" tall. Applications may be made from prior to weed emergence up to 1-2" weeds. Will provide limited activity on small emerged broadleaf weeds, but won't control established or germinated grass weeds present at application. See Supplemental Label for higher use rates in fine soil types.
WideMatch®	1.5 EC	1.33 pts.			Apply as a broadcast or band treatment to field corn up to and including 5 fully exposed leaf collars (V5 growth stage). Applications beyond the V5 growth stage should be made as a directed spray using drop nozzles. Apply when broadleaf weeds are actively growing but before weeds are 8 inches tall. Only weeds emerged at the time of application will be controlled or suppressed.
Yukon + NIS or COC	67.5% WG	4-8 ozs. + 1-2 qts./100 gal. or 1 gal./100 gal.†			†COC may cause injury at higher Yukon rates. Apply from spike to 36" corn. Optimal when corn is less than 12" tall and weeds are small. May apply 2 applications with a total application not to exceed 8 ozs. of product by weight. Allow at least 2 weeks between applications. Refer to label for sensitive crop precautions and drift control recommendations. Tankmixes include: atrazine, Accent and Beacon.
Zemax	67.5% WG	 ≤3%OM 2 qt/A  ≥3%OM 2.4 qt/A			Do not apply to corn >30" tall or 8 leaf stage, do not graze or harvest within 45 days following post emergence application, do not make tank mix applications with any organophosphate or carbamate insecticide or severe corn injury may occur. Zemax applied postemergence to corn that received an application of Counter® or other organophosphate insecticide can result in severe corn injury, postemergence corn applications of any organophosphate or carbamate insecticide within 7 days before or after application can result in severe corn injury
Zidua®	85% WG	Coarse 1.0 – 2.75 oz.	Medium 1.5 – 3.0 oz.	Fine 2.0 – 4.0 oz.	Apply POST (spike to V4). Will not control emerged weeds. Must be applied and activated by at least ½ inch rainfall or irrigation prior to weed germination. Do not apply by air or chemigation.
2,4-D (also see Salvo, Saber)	4 lb. Amine	.5-1 pt.†			†Apply to corn up to 8" tall at 0.5 to 1.0 pt./A. Apply to corn from 8" to tasseling at 1 pt./A (directed spray, drop nozzles only). See the label for further directions or restrictions.
	LV-4 Ester	.5-1 pt. (annuals .5 pt., perennials 0.75-1 pt.)†			†Do not apply from 2 weeks before tasseling to the dough stage. See the label for further directions or restrictions. Use drop nozzles for corn greater than 8" in height or the V5 stage, whichever is more restrictive.
	LV-6 Ester	.33 pt.†			†Do not apply from 2 weeks before tasseling to the dough stage. See the label for further directions or restrictions. Use drop nozzles for corn greater than 8" in height or the V5 stage, whichever is more restrictive.







## CORN-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Armezon + Atrazine + Glyphosate + MSO + AMS	2.8 SC + 4L + various	0.5 – 1.0 oz. + 0.5 – 2.0 pints + Labeled rate + 1.0– 1.5% v/v + 8.5-15 lb./100 gallons	Apply to corn from spike to V8. For improved control of pigweed spp. and certain grasses. Standard rate is 0.75 oz./A. See supplemental label for additional grass weeds at 1.0 oz./A. Tank mix with 0.25 – 1.5 lb. atrazine to increase weed control spectrum.
Abundit® Extra	3 lb./gal a.i.	24-32 ozs.	Apply postemergence to RR corn from emergence through the V8 stage or until corn height reaches 30 inches, whichever comes first. Single in-crop applications of this product are not to exceed 1 quart per acre. Sequential in-crop applications of this product from emergence through the V8 stage or 30 inches must not exceed 2 quarts per acre per growing season. Apply to RR 2 corn from emergence through 24 to 30 inches (free standing), for optimum spray coverage and weed control, drop nozzles are recommended. For corn heights 30 to 48 inches tall. Apply this product only using ground application equipment with the drop nozzles. Single in-crop applications of this product should not exceed 48 fluid ounces per acre.
Cadet + glyphosate + adjuvants	.91EC	.4 -.9 ozs. + Refer to labels + Refer to labels	Cadet may be applied postemergence in a tankmix with glyphosate as long as it is registered for use over-the-top in glyphosate tolerant corn. Follow all tankmix partner labels and follow the most restrictive statements.
Capreno + glyphosate + AMS	.91EC	3 ozs. + Refer to labels + 1.5 lbs.	"Post on field, silage, and seed corn for control of many broadleaf and grassweeds. Tankmixing with atrazine improves the spectrum and residual control. Apply from crop emergence to V6 for field corn for control of difficult or resistant weeds."
Callisto + glyphosate + AMS	4SC various	3 ozs. + Recommended rate + 8.5 - 17 lbs./100 gal.	Callisto may be applied postemergence in a tank mix with a glyphosate product that is registered for use over-the-top in glyphosate tolerant corn. Follow the glyphosate product label for rates, restrictions and adjuvant recommendations.
Callisto GT	4.18 lbs./gal	2 pt/A	Apply before corn reaches 30" corn or V8, Requires the use of an adjuvant for optimum control, Add AA-Trex® 4L herbicide or dicamba as a tank mix partner for resistance management, 2PT= 3oz Calisto and 29oz of Touchdown Total.
Cinco® + Surfactants	5.4 lb. a.i.	<u>Emergence to V8 or up to 30" tall corn, whichever is more restrictive.</u> Up to 24 ozs. + See label for LP1 recommended additives.	For use on glyphosate resistant corn with the Roundup Ready gene only (I.e. Roundup Ready corn). Please see the label for recommended surfactants and water conditioning agent as well as recommended tank mix partners and rates.
Duramax	5.4 WSL	RR Corn: 18-24 ozs.† RR 2 Corn: 18-36 ozs.††	†Apply to RR Corn from emergence through the V8 stage or until height reaches 30" (free standing), whichever comes first. Drop nozzles recommended when corn height is 24-30" tall. ††Apply to RR 2 Corn from emergence through 48" tall. Drop nozzles recommended when corn height is 24-48" tall. The addition of AMS at 8.5 to 17 lbs./100 gal. of water is recommended for improved performance under certain conditions. Refer to label for adjuvant application details.



## CORN-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Durango DMA	5.4 WSL	RR Corn: 18-24 ozs.† RR 2 Corn: 18-36 ozs.††	†Apply to RR Corn from emergence through the V8 stage or until height reaches 30" (free standing), whichever comes first. Drop nozzles recommended when corn height is 24-30" tall. ††Apply to RR 2 Corn from emergence through 48" tall. Drop nozzles recommended when corn height is 24-48" tall. The addition of AMS at 8.5 to 17 lbs./100 gal. of water is recommended for improved performance under certain conditions. Refer to label for adjuvant application details.
Four Power Plus®	4 lb. a.i.	Emergence to 12 leaf stage or up to 30" tall corn, whichever comes first Up to 32 ozs. Emergence to 48" tall corn Drop nozzle application only: Up to 32 ozs.	For use in glyphosate resistant corn with the Roundup Ready gene only (i.e Roundup Ready corn). Refer to label for tankmix recommendations.
Halex GT + Northstar or Clarity or Status + NIS + AMS	4.39SC	3.6-4 pts.  + 1-2 qt./100 gal. + 8.5-17 bs./100 gal.	Apply to emerged corn up to 30 inches in height or the 8-leaf stage of corn growth. It is commonly recommended to apply a product such as Lumax, Lexar or a Dual or Bicep product at a reduced rate prior to a Halex GT application. Tankmixing with atrazine (1-2 pts./A) provides improved control of many broadleaf weeds. Use high rate if weeds are >10' tall or under environmental stress or to extend the residual when app. is being made to small corn (V2-V4). Do not apply in close timing to O.P. insecticides.
Laudis + AMS + glyphosate	3.5SC	3 ozs. + 1.5 lbs. + various	For improved control of giant ragweed, lambsquarters and waterhemp. Follow all other directions on the glyphosate label including required adjuvants and mixing instructions. Rain fast in 1 hour.
RU Lumax EZ or Lexar EZ + glyphosate + Adjuvants	3.94 lb. a.i.	2 qts.† or 2.25 qts.† + various + See label for recommended additives.	†Apply early postemergence to glyphosate tolerant corn at a rate down to 2 qts./A for Lumax and 2.25 qts./A for Lexar. Do not apply to corn that is greater than 12 inches tall. Alternately, Lumax may be applied preemergence at a rate down to 2 qts./A, or Lexar down to 2.25 qts./A, as part of a two-pass weed control system when followed by a postemergence application of a glyphosate based product in glyphosate tolerant corn. Refer to labels of all products used.
Mad Dog + Adjuvants	4 lb. a.i.	Emergence to V8 or up to 30" tall corn, whichever is more restrictive. 24-32 ozs. + See label for LPI recommended additives.	For use on glyphosate resistant corn with the Roundup Ready gene only (i.e. Roundup Ready corn). Refer to label for tankmix partner recommendations, rates and surfactant recommendations.
Mad Dog® Plus + Adjuvants	4 lb. a.i.	Emergence to 12 leaf stage or up to 30" tall corn, whichever occurs first. Up to 32 ozs. V8 or up to 30" tall corn through 48" tall corn (Use with drop nozzles only) Up to 32 ozs. + See label for LPI recommended additives.	For use on glyphosate resistant corn with the Roundup Ready gene only (i.e. Roundup Ready corn). Refer to label for adjuvant application details.
Makaze or Makaze Yield Pro + Adjuvants	4 lb. a.i.	Emergence to 12 leaf stage or up to 30" tall corn, whichever occurs first. Up to 32 ozs. V8 or up to 30" tall corn through 48" tall corn (Use with drop nozzles only) Up to 32 ozs. + See label for LPI recommended additives.	For use on glyphosate resistant corn with the Roundup Ready gene only (i.e. Roundup Ready corn). Makaze Yield Pro contains IBA and kinetin which promotes plant health for increased yields. Refer to label for adjuvant application details.



## CORN-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Realm® Q + glyphosate + Adjuvants	38.75% WDG	4 oz + Recommended rate + Recommended rate	Apply POST to field corn up to 20" tall or up to and including V6, whichever is more restrictive. Do not apply to corn >20" or exhibiting 7 or more leaf collars, whichever is more restrictive.
Resolve® Q + COC + glyphosate + Adjuvants	22.4 DF	1.25 ozs.† + 1 gal./100 gals.† + Recommended rate + Recommended rate †Refer to label.	Do not exceed *2.5 ozs./a/season. Apply to corn up to 20" tall. Do not apply to corn >20" tall or exhibiting 7 or more leaf collars, whichever is more restrictive. Tankmix options available such as Resolve Q plus glyphosate on glyphosate tolerant corn or with glufosinate or LibertyLink corn. *If glyphosate-resistant weeds are present, then do not use less than 5 oz/A.
Resource + glyphosate + Adjuvants	.86EC	2-4 ozs. + Recommended rate + Recommended rate	Resource may be applied postemergence in a tankmix with glyphosate as long as it is registered for use over-the-top in glyphosate tolerant corn. Follow all tankmix partner labels and follow the most restrictive statements.
Roundup WEATHERMAX or Roundup PowerMAX	5.5S	22-32 oz	Apply to glyphosate tolerant corn from emergence through the V8 stage (8 leaves with collars) or until corn height reaches 24" (free standing), whichever occurs first. Drop nozzles are recommended after corn is 24" in height and drop nozzles are required on 30-48" tall corn.
Solstice + glyphosate + adjuvants	4.0 SC	2.5 – 3.15 oz + Recommended rates + Refer to labels	Apply Early Post up to V8 stage corn: Weeds up to 5" tall. 10 GPA minimum. Medium spray droplets, good pressure to penetrate weed canopy and get good coverage. Do not use UAN or AMS in applications to Sweet Corn or Yellow Popcorn. NIS is recommended with Sweet Corn or Yellow Popcorn applications. Refer to label for insecticide precautions and read and follow all label directions.
Solstice + Atrazine + glyphosate + adjuvants	4.0 SC	2.5 – 3.15 oz + 0.5 – 1 lbs. + Recommended rates + Refer to labels	Apply Early Post up to V8 stage corn but before 12" tall corn: Weeds up to 5" tall. 10 GPA minimum. Medium spray droplets, good pressure to penetrate weed canopy and get good coverage. Do not use UAN or AMS in applications to Sweet Corn or Yellow Popcorn. NIS is recommended with Sweet Corn or Yellow Popcorn applications. Refer to label for insecticide precautions and read and follow all label directions.
Status + glyphosate	56% WG various	2.5 ozs.- 5 ozs. + Recommended rate	Apply POST to corn 4-36" tall (V2-V10). Do not apply within 15 days before tassel emergence, whichever occurs first. For use only on glyphosate tolerant corn (i.e. Roundup Ready, LibertyLink). Refer to all labels for recommended additives. If glyphosate resistant weeds are present, do no use less than 5.0 ozs./A.
SureStart + Durango DMA	4.25	Coarse ≤3%OM 1.5-2 pts.	Medium ≤3%OM 1.5-2.5 pts. 2-3 pts.
		Fine ≤3%OM ≥3%OM + 1.5-2 pts. 1.75-3 pts. + RR Corn: 18-24 ozs. RR2 Corn: 18-36 ozs.	≤3%OM ≥3%OM + 2-3 pts.



## CORN-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Touchdown HiTech or Touchdown Total + NIS <sup>†</sup> + AMS	5 lb. a.i. 4.17 lb. a.i.	20 ozs. or 24 ozs. + 1 qt. <sup>†</sup> + 8.5 - 17 lbs./100 gal.	†Touchdown HiTech only. Apply POST to glyphosate tolerant corn up to V8 or 30" with no more than 35 oz./A of Touchdown Total or 30 oz./A of Touchdown HiTech. Do not apply more than 70 ozs./A of Touchdown Total over the top in a single season. Do not apply more than 57.6 ozs./A of Touchdown HiTech over the top in a single season. Either product can be used on glyphosate tolerant corn 30"-48" in height with drop nozzles.
Yukon® + glyphosate + Adjuvants	67.5 WSG	2-8 ozs. <sup>†</sup> + Recommended rate + Recommended rate	†Common use rate is 2-4 ozs./A Yukon when tank mixing with glyphosate. This tank mixture is for use in glyphosate-tolerant field corn ONLY. For enhanced knockdown and residual control of annual broadleaf weeds and nutsedge. For use in CO, IL, IA, KS, KY, MI, MN, MO, NE, ND, OH, SD, WI, and WY.

## CORN-LIBERTY TOLERANT

Liberty + atrazine + AMS	2.34 SL	22 ozs. + 1-1.5 lbs. + 8.5-17 lbs./100 gal.	Apply from emergence to V7 corn in a minimum of 15 gpa of water. May be tank mixed with residual corn products up to the labeled rates and crop stage.
Liberty + Capreno + AMS	2.34 SL	22 ozs. + 3 ozs. + 8.5-17 lbs./100 gal.	Apply from emergence to V7 corn in a minimum of 15 gpa of water. May be tank mixed with residual corn products up to the labeled rates and crop stage.
Liberty + Clarity/Strut or Banvel/ Rifle + AMS	2.34 SL	22 ozs. + 4-16 ozs. + 8.5-17 lbs./100 gal.	Apply from emergence to V7 corn in a minimum of 15 gpa of water. May be tank mixed with residual corn products up to the labeled rates and crop stage.
Liberty + Laudis + AMS	2.34 SL	22 ozs. + 3 ozs. + 8.5-17 lbs./100 gal.	Apply from emergence to V7 corn in a minimum of 15 gpa of water. May be tank mixed with residual corn products up to the labeled rates and crop stage.
Liberty + Status + AMS	2.34 SL + 56% WG	0.5 – 1.0 oz. + 2.5 to 10 oz + 8.5-17 lbs./100 gal.	Apply to corn from spike to V8. For improved control of pigweed spp. and certain grasses. Standard rate is 0.75 oz./A. See supplemental label for additional grass weeds at 1.0 oz./A. Tank mix with 0.25– 1.5 lb. atrazine to increase weed control spectrum.

## CORN-FALL APPLICATIONS

Authority MTZ	.45 lb. DF	Coarse	Medium	Fine	May be applied as a postharvest fall treatment for burndown of existing vegetation and PRE control of susceptible weeds the following spring. Rotation to field corn (grain, silage, pop and seed corn) is 4 months where product was applied at 14 ozs./A or less. Rotation to soybeans is anytime.
		1-2%OM 8 ozs.	1-2%OM 8-10 ozs.	1-2%OM 10-12 ozs.	
		2-4%OM + 8-10 ozs.	2-4%OM + 10-12 ozs.	2-4%OM + 12-14 ozs.	



## CORN-FALL APPLICATIONS



Product	Formulation	Rate Per Acre			Comments
Autumn Super + COC + AMS or UAN	51% WDG	0.3 - 0.5 oz. + 1 gal./100 gal. + 1.5 - 3 lbs. or 1.5 - 2 qts.			Apply after fall harvest up to 30 days prior to planting field corn, 60 days prior to planting sweet corn, popcorn, or corn grown for seed. Should be tankmixed with 2,4-D or glyphosate for broader weed control. Tank mix with glyphosate, Strut, Rifle, Rifle D, Salvo or other 2,4-D and/or dicamba products for broader spectrum. Rate may be reduced to 0.3 ounces on soils with pH between 7 and 8.
Basis Blend + COC or MSO or NIS + AMS	30SG	0.825-1.65 oz. + 1 gal/100 gal or 2 qts/100 gal or 1 qt/100 gal + 2 lbs/A			Apply after harvest but before ground freezes. EPP, PRE and burndown in spring. Recrop to soybeans is 15 days when .825 oz/acre used. For fields going to corn, use 1.25 oz. acre + Panoflex .33 oz/acre + 2,4-D + glyphosate as needed.
Cinch	7.64 EC	Coarse	Medium†	Fine†	†Minimum and no-till rates. Apply after September 30 in ND, SD, MN, WI and north of Route 30 in IA. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA. Apply after October 31st north of route 136 in IL. In all applications, apply to crop stubble after harvest when the sustained soil temperature at a 4" depth is less than 55 degrees F and falling. See label for details, including crop rotation restrictions.
Distinct® + NIS or MSO + UAN or AMS	70 DG	2.0 – 8.0 oz. + 0.25% v/v or 1.5 – 2.0 pt./A + 1.25% v/v or 5 lb./100 gallons			Following crop harvest and prior to a killing frost, apply 2.0-8.0 oz./A to control broadleaf weeds. For best performance, apply when weeds are in the 2-4 leaf stage or when rosettes are less than 2 inches across. Any crop may be planted 120 days after application.
Dual IIG MAGNUM	16%	Coarse	Medium†	Fine†	†Minimum and no-till rates. Apply after September 30 in ND, SD, MN, WI and north of Route 30 in IA. Apply after October 15 north of Route 91 in NE and south of Route 30 in IA. Apply after October 31 north of route 136 in IL. In all applications, apply to crop stubble after harvest when the sustained soil temperature at a 4" depth is less than 55 degrees F and falling but before ground freezes. Tillage depth after application should not be deeper than 2-3". Dual II MAGNUM SI is specifically to be used with dry impregnation. See label for details, including crop rotation restrictions and applications dates for other areas.
Express SG + 2,4-D + COC	50%SG LV4	.25-.5 oz. + 1-2 pts. + 1 gal./100 gal.			For control of winter annual broadleaf weeds. Corn or soybeans can be planted the following spring. Consult the label for further directions and tankmix partners.
Harness	20G	Coarse	Medium	Fine	May be applied following soybean harvest in the fall in MN, ND, SD, IA, WI, NE (north of Route 20) and IL (north of Route 136). Apply to soybean stubble after October 15, when the sustained soil temperature at a 4" depth is below 50 degrees F, but before ground is frozen. Apply to crop stubble or tilled ground (clumps should be leveled out).



## CORN-FALL APPLICATIONS



Product	Formulation	Rate Per Acre			Comments
Outlook	6 EC	Coarse		Medium	Fine
		Do not apply	≥2.5%OM Up to 21 ozs.	≥2.5%OM Up to 21 ozs.	Apply after October 1 in ND, SD, MN, WI, IA, NE north of highway 136 in IL, and north of highway 91 in NE. Apply when soil temperature at the 4" depth are sustained at less than 55 degrees F and before ground freezes. Tillage may be performed before or after application. After application, tillage should be at no more than 2-3" deep and uniform in the upper surface of the soil.
Princep or Princep Caliber 90®	4L or 90DF	1 qt. or 1.1 lbs.			
Sharpen® + glyphosate + 2,4-D + MSOT + AMS†	2.85 SC + various	1.0 – 2.0 oz. + refer to label + refer to label + 1 gall./100 gal + 8.5-17 lbs./100 gal		†For optimum burndown activity. Improves burndown of winter annual broadleaf weeds.	
Surpass® NXT	7EC	Coarse	Medium	Fine	For use in IA, MN, ND, SD, WI, north of Route 91 in NE and north of Route 136 in IL. Following soybean harvest, apply to soybean stubble after September 30. Only corn may be planted the following spring. Refer to label for additional information.
SureStart® II	4.25 SE	Coarse	Medium	Fine	Following soybean harvest, apply to soybean stubble after Oct. 15, when the sustained soil temp. at a 4" depth is <50°F, but before ground freezes. Use on medium and fine textured soils with >2.5% OM. Refer to label for additional information.
TripleFLEX	4.25 lb. a.i.	Coarse	Medium	Fine	Following soybean harvest, apply to soybean stubble after Oct. 15, when the sustained soil temp. at a 4" depth is <50°F, but before ground freezes. Use on medium and fine textured soils with >2.5% OM.
Triple FLEX® II	4.25 lb. a.i.	Coarse	Medium	Fine	Following soybean harvest, apply to soybean stubble after Oct. 15, when the sustained soil temp. at a 4" depth is <50°F, but before ground freezes. Use on medium and fine textured soils with >2.5% OM.
Valor SX or Rowel™ + glyphosate or 2,4-D + COC + UAN or AMS	51 WDG various LVE	2-3 ozs. + refer to label or refer to label + 1 gal./100 gal. + 2 qt. or 2 lbs.		†Do not apply to coarse soils with less than 1% OM. Always add glyphosate and/or 2,4-D to control emerged weeds. Apply as a fall burndown after harvest for corn before the ground freezes. Do not apply to field corn grown for seed, popcorn or sweet corn. Refer to label for geographic restrictions.	



**Loveland**  
PRODUCTS

*Cotton Herbicides*





## COTTON PREPLANT-BURNDOWN



Product	Formulation	Rate Per Acre	Comments
Assure II + COC or NIS	0.88EC	5 – 10 ozs + 2 – 4 qts/100 gal or 1 qt/100 gal	Use COC at 2 qts/100 gal aerial and 1 gal/100 gal ground application.
Flexstar GT 3.5		3.5 – 5.3 pts	Can be used for preplant or preemergence burndown of existing weeds. The addition of MSO or COC is recommended. Do not exceed 3.5 pts/A on medium or fine-textured soils. DO NOT apply over the top of cotton or plant death will occur.
Fusion		6 – 12 ozs	Add 2 – 4 qts COC or 1 qt NIS per 100 gal of spray solution.
Glyphosate	4 lbs./gal	1 – 4 pts	Adding a residual herbicide like Caparol, Valor, Cotoran or Direx may provide residual control of horseweed. Add a surfactant and water treatment product to improve glyphosate performance.
Glyphosate + 2,4-D	4 lbs + 4 lbs	1 – 4 pts + 1 qt	Add a surfactant and water treatment product to improve glyphosate performance. Add 2,4-D for improved control of horseweed.
Glyphosate + Aim	4 lbs + 2EC	1 – 4 pts + 1 oz	Add a surfactant and water treatment product to improve glyphosate performance.
Glyphosate + dicamba	4 lbs + 4 lbs	1 – 4 pts + 8 ozs	Add a surfactant and water treatment product to improve glyphosate performance. 8 oz dicamba requires a preplant interval of 21 days after 1" accumulation of rainfall or overhead irrigation. Do not make preplant applications to cotton in areas with average annual rainfall less than 25".
Glyphosate + Distinct	4 lbs/gal + DG	1 – 4 pts + 2 – 4 oz	Minimum of 30-day preplant interval after accumulating 1" of rainfall or overhead irrigation.
Glyphosate + Valor 51 WDG	4 lbs + WDG	1 – 4 pts + 1-2 ozs	Add a surfactant and water treatment product to improve glyphosate performance.
Glyphosate + Reflex, Rowel or Top Gun	4 lbs + 2SL	1 – 4 pts + 1 – 1.5 pts	Add a surfactant and water treatment product to improve glyphosate performance.
Glyphosate + Valor	4 lbs + 51 WDG	1 – 4 pts + 2 ozs	Add a surfactant and water treatment product to improve glyphosate performance.
Gramoxone or Rowel	SL 2.0	2.5 – 4.0 pts	Apply for knockdown of existing vegetation prior to before, during, or after planting but before crop emergence. Add 2,4-D or dicamba for improved broadleaf control. When tank-mixing with other herbicides consult Syngenta's recommended tank-mixing guide.
Liberty	280 SL	40 ozs	Apply for knockdown of existing vegetation prior to planting. Add 2,4-D or dicamba for improved broadleaf control.
Reflex or Top Gun	2 SL	1 pt	Apply up to 21 days prior to planting on medium or fine-textured soils. Apply after the last tillage operation is complete.
Select Max or Intensity One + NIS or COC	1EC 1EC	9 – 32 ozs 12 – 32 ozs + 0.25% v/v (1qt/100gl) or 1 gal/100 gal	See label directions on use rates for different grasses and surfactant rates. Liberate is recommended with Intensity One.



# COTTON PREPLANT-BURNDOWN



Product	Formulation	Rate Per Acre			Comments
Warrant®	3 ME	Coarse	Medium	Fine	Not to exceed 4 qt. per acre when applying additional applications.
		<1.5% OM 1.25-1.6 qts ≥1.5% OM 1.25-1.7 qts	<1.5% OM 1.25-1.7 qts ≥1.5% OM 1.25-1.9 qts	<1.5% OM 1.25-1.9 qts ≥1.5% OM 1.25-2.0 qts	

## COTTON PREPLANT INCORPORATED

Prowl or Stealth	3.3 EC or 3.3 EC	Coarse	Medium	Fine	Immediately prior to planting.
		1.2-2.4 pts	1.8-3 pts	2.4-3.6 pts	
Prowl H2O	3.8 CS	Coarse	Medium	Fine	Immediately prior to planting. Do not exceed 1.6 pts/A on coarse soils in California. May be used as preplant surface or preplant incorporated.
		1.0-2.0 pts	2 pts	3 pts	
Reflex or Top Gun	2 SL	12 ozs			For maximum control of Palmer amaranth, apply 12 oz Reflex PPI followed by 12 oz preemergence.
Trifluralin	4 EC	Coarse	Medium	Fine	Immediately prior to planting.
		1.0 pt	1.25-1.5 pts	1.5-2.0 pts	

## COTTON PREEMERGENCE

Caparol 4L	4 L	3.2 – 4 pts				
Direx	80DF or 4L	Coarse	Medium	Fine	Use the lowest rate on low organic sandy loam and silt loam soils. Crop injury may occur when OP insecticides are used.	
		Do not use	1-1.25 lbs 0.8-1 qt	1.8-2.75 lbs 1.6 qts		
Prowl H2O	3.8 CS	Conventional or Min-Till			Apply at planting or up to 2 days after planting. Do not exceed 1.6 pts/A on coarse soils in California.	
		Coarse	Medium	Fine		
		1 to 2 pts	2 pts	3 pts		
		No-Till				
		Coarse	Medium	Fine		
Cotoran	4L	2 pts	3 pts	4 pts		
		Coarse	Medium	Fine		
Reflex or Top Gun	2 SL	2 pts	3 pts	4 pts	Apply to coarse-textured soils only. Tank mixes with Staple and/or pendimethalin may increase crop injury.	
		12-16 ozs				
Staple LX	3.2 L	1.3-2.1 ozs			Temporary stunting or yellowing may occur following preemergence applications especially in cool, wet conditions.	
Staple LX + Cotoran	3.2L + 4L	1.3 ozs + 1.6 – 2 pts				
Staple LX + Direx	3.2L + 4L	1.3 ozs + 1.0 – 1.5 pts				
Warrant®	3 ME	Coarse	Medium	Fine	Not to exceed 4 qt per acre when making a second application later in the season.	
		<1.5% OM 1.25-1.6 qts ≥1.5% OM 1.25-1.7 qts	<1.5% OM 1.25-1.7 qts ≥1.5% OM 1.25-1.9 qts	<1.5% OM 1.25-1.9 qts ≥1.5% OM 1.25-2.0 qts		



## COTTON POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Assure II + COC or NIS	0.88EC	5 – 10 ozs + 2 – 4 qts/100 gal or 1 qt/100 gal	Use COC at 2 qts/100 gal aerial and 1 gal/100 gal ground application.
Envoy + NIS	75DG	0.10 – 0.15 ozs + 1 qt	For improved control of morning glory.
Fusilade DX + COC or NIS	2 EC	6 – 12 ozs + 1 gal/100 gal or 1 qt/100 gal	Do not apply a total of more than 48 fl oz per acre per season.
Fusion + COC or NIS	2.56 EC	6 – 12 ozs + 1 gal/100 gal or 1 qt/100 gal	
Glyphosate	4 lb	1 qt	Roundup Flex varieties only.
Glyphosate + Dual Magnum	4 lb 7.62EC	1 qt + 1.0 – 1.25 pts	Roundup Flex varieties only.
Glyphosate + Staple LX	4 lb 3.2LX	1 qt + 0.8 – 1.7 ozs	Add a surfactant and water treatment product to improve glyphosate performance.
Liberty	280 SL	23 – 29 ozs	Liberty Link varieties only.
Liberty	280 SL	43 ozs	Liberty Link varieties only. This rate is for salvage situations. Slight cotton stunting may occur.
Liberty + Dual Magnum	280 SL 7.62EC	23 – 29 ozs + 1.0 – 1.25 pts	Liberty Link varieties only. Some leaf speckling may occur.
Liberty + Staple LX	280 SL 3.2LX	23 – 29 ozs + 0.8 – 2.7 ozs	Liberty Link varieties only. May cause temporary yellowing and stunting.
Prowl H2O	3.8 CS	Conventional or Min-Till Coarse      Medium      Fine 1.0 to 2.0 pts   1.5 to 2.0 pts   2.0 pts	Apply after cotton reaches 4-leaf stage but not after the 8-leaf stage. Does not control emerged weeds. Do not apply broadcast postemerge with Caporal, Cotoran, Dual, Sequence, or Staple herbicides. Do not exceed the maximum cumulative seasonal rate of 4.2 pts/A for sequential preplant/preemergence and postemerge applications.
Select Max or Intensity One + NIS or COC	1EC 1EC	9 – 32 ozs 12 – 32 ozs + 1qt/100gal or 1 gal/100 gal	See label directions on use rates for different grasses and surfactant rates. Liberate is recommended with Intensity One.
Sequence		2.5 – 2.75 pts	Roundup Ready Flex varieties: apply from emergence through the 10-leaf stage. Roundup Ready Cotton Only: make post emergence applications from 3" tall up to the 4-leaf stage of cotton. DO NOT exceed 3.5 pts/Ac per season.



Product	Formulation	Rate Per Acre			Comments
Warrant®	3 ME	Coarse	Medium	Fine	
		<1.5% OM 1.25-1.6 qts ≥1.5% OM 1.25-1.7 qts	<1.5% OM 1.25-1.7 qts ≥1.5% OM 1.25-1.9 qts	<1.5% OM 1.25-1.9 qts ≥1.5% OM 1.25-2.0 qts	

## COTTON POSTEMERGENCE DIRECTED SPRAY

Aim EC + COC	EC	0.8 – 1.6 ozs + 1 gal/100 gal	Apply as directed spray after cotton has reached 12" in height. Do not allow spray solution to contact cotton foliage or green stem tissue. Refer to label for specific label instructions.
Anthem Flex	4 SE	1.4 -3.8 oz/A	<ul style="list-style-type: none"> <li>• Apply as a hooded/shielded application or directed spray.</li> <li>• Do not apply to coarse soils.</li> <li>• Do not apply more than 3.8 oz/A in a single application.</li> <li>• Cotton must be planted a minimum of 1 in. deep.</li> <li>• Use of an adjuvant is recommended for consistent control.</li> <li>• Refer to label for specific label instructions</li> </ul>
Caparol	4L	2.4 – 3.2 pts	
Cobra		12.5 pts	
Envoké		0.1 – 0.25 oz	
Goal 2XL		1 – 2 pts	Apply as a directed spray after cotton height exceeds 6". Do not apply within 90 days of harvest.
Gramoxone	SL 2.0	1.2 – 2.0 pts	Apply as a hooded or shielded spray only.
Layby Pro		1.0 – 2.4 pts	Use only as a post-directed spray. Rates vary by weed size, cotton height and soil type. When cotton is less than 12" tall use NIS. When cotton is greater than 12" tall use NIS or COC.
Prefix		2 – 2.33 pts	
Reflex or Top Gun	2 SL	1 – 1.5 pts	Apply as a post-directed spray. Cotton must be at least 6" tall. Use NIS at 1 – 2 qts./100 gal water or COC at 1 gal/100 gal water on emerged weeds.
Suprend (Caparol + Envoké)		1 – 1.5 pts	Apply as a directed spray only. Do not exceed a total of 2.7 pts./A per season.
Valor SX or Rowel		1 – 2 ozs	Apply as a directed spray only. Do not exceed a total of 2.7 pts./A per sea Post directed to cotton at least 6" tall. Do not allow spray solution or drift to come into contact with cotton or severe injury may occur. son.
Zidua	Dg	Coarse    Medium    Fine DO NOT USE    0.75 – 1.5 oz    1.5 – 2.1 oz	Apply as a directed spray only to cotton from 5-leaf stage to beginning bloom. Do not use on coarse textured soils.



**Loveland**  
PRODUCTS

*Soybean Herbicides*





## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED

PPI = preplant incorporated      PRE = surface applied before crop emergence



Product	Formulation	Rate Per Acre			Comments
Afforia®	50.8%DG	Coarse	Medium	Fine	
		2.5 ozs.	2.5-3.75 ozs.	2.5-3.75 ozs.	Afforia may be applied any time from fall through spring. Apply Afforia at 2.5 oz. per acre 1 day prior to planting soybeans. Apply Afforia at 2.5 - 3.75 oz. per acre at least 7 days prior to planting soybeans.
Authority® Assist	4 SC	Coarse†	Medium	Fine	†Do not use on coarse soils classified as sand, which have <1% OM. Use higher rates for soils of pH <7 and lower rates for soils of pH >7 within the rate range. ††Use higher rate in rate range if applying >30 days preplant. Apply from 45 days prior to planting up to 3 days after planting. Do not apply more than 3 days after planting or if seedlings are emerging as crop injury may occur. Refer to label for regional restrictions.
		<u>1-2% OM</u> 6-8 ozs.††	<u>1-2% OM</u> 8-10 ozs.††	<u>1-2% OM</u> 10-12 ozs.††	
Authority First	70DF	<u>2-4% OM</u> 8-10 ozs.	<u>2-4% OM</u> 10-12 ozs.	<u>2-4% OM</u> 12 ozs.	†Do not apply to sand soils with <1% OM. Apply preplant or preemergence within 3 days after planting. If used PPI, incorporate into the top 1-3 inches of soil. Use COC or NIS plus AMS for applications with emerged weeds. May apply ½ rate premerge for suppression of weeds in Roundup Ready soybeans.
		<u>3% or less OM†</u> 6.45 ozs.			
Authority Elite	7EC	Coarse	Medium	Fine	May be applied in the Fall, early preplant, PPI, or preemergence within 3 days after planting. Do not use on soils classified as sand with less than 1% OM. See label for details on other restrictions and weeds controlled.
		<u>&lt;1.5% OM</u> 19-25 ozs.	<u>&lt;1.5% OM</u> 25-32 ozs.	<u>&lt;1.5% OM</u> 32-38.7 ozs.	
Authority Maxx	66DF	Coarse	Medium	Fine	May be applied in the Fall, early preplant, PPI, or preemergence within 3 days after planting. Do not apply to soils with a soil pH greater than 7.6. See label for details on other restrictions and weeds controlled.
		<u>0.5 - 2% OM</u> 5-6 ozs.	<u>0.5 - 2% OM</u> 6.7-5 ozs.	<u>0.5 - 2% OM</u> 7-8ozs.	
RU Authority MTZ (early pre-plant) + COC or NIS	0.45 lb. a.i.	<u>2-4% OM</u> 6-7 ozs.	<u>2-4% OM</u> 7-8 ozs.	<u>2-4% OM</u> 8-9.6 ozs.	†Refer to label for rate restrictions on high pH soils. ††Do not apply to coarse soils with less than 1% OM. May be applied early preplant, PPI, or preemergence. Early preplant: apply up to 30-45 days prior to planting in minimum or no-till cropping systems. PPI: Do not incorporate deeper than 2". Early Preplant and Preemergence: May be applied from 30 to 45 days early preplant before planting and preemergence 30 days before planting up to 3 days after planting, but before crop seed germinates. Standard rate program and a reduced rate program for glyphosate tolerant soybean systems are labeled. Refer to label for details and for tankmix partner recommendations.
		Standard Rate Program†			
RU Authority MTZ (reduced rate program for glyphosate system)	0.45 lb. a.i.	Coarse†† Medium Fine			May be applied fall, early preplant or preplant. Use lower rate for glyphosate setup or higher rate when used alone for longer residual and/or heavy weed pressure.
		<u>1-2% OM</u> 8 ozs.	<u>1-2% OM</u> 8-10 ozs.	<u>1-2% OM</u> 10-12 ozs.	
Authority XL	DF	Coarse	Medium	Fine	May be applied fall, early preplant or preplant. Use lower rate for glyphosate setup or higher rate when used alone for longer residual and/or heavy weed pressure.
		<u>.05-2% OM</u> 3-6 ozs.	<u>.05-2% OM</u> 3.2-7.5 ozs.	<u>.05-2% OM</u> 4-8 ozs.	
Boundary®	6.5 EC	<u>2-4% OM</u> 3.2-7 ozs.	<u>2-4% OM</u> 3.2-8 ozs.	<u>2-4% OM</u> 4-9.6 ozs.	†Do not use on sand soils. Do not use on loamy sand soils with less than 2% OM. ††For PPI applications, use lower rate. PPI or PRE. Base Foundation Rate for Boundary in GT Soybeans is 1.5 pt/A. From 30 days before planting to prior to crop emergence. See label for restrictions including high pH and sandy soils.
		<u>5-3%OM</u> 1.2-1.5 pts.	<u>.5-3%OM</u> 1.8-2.1 pts.	<u>.5-3%OM</u> 2.4-2.7 pts.	
		<u>&gt;3%OM††</u> 1.5-1.8 pts.	<u>&gt;3%OM††</u> 2.1-2.4 pts.	<u>&gt;3%OM††</u> 2.4-3 pts.	



## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED

PPI = preplant incorporated      PRE = surface applied before crop emergence



Product	Formulation	Rate Per Acre			Comments		
	75%DF	Coarse	Medium	Fine	For burndown and residual control. For central region states, Canopy may be applied at planting or up to 45 days before planting. Refer to label for geographic region categorized as central states. Contains the active ingredients of Sencor and Classic herbicides. See label for specific use rates, and information on pH and crop rotation restrictions.		
		5-4%OM 4-5 ozs.	5-4%OM 5-6 ozs.	5-4%OM 5-7 ozs.			
Canopy® EX	29.5% WDG	1.1-3.3 ozs. †This rate range includes all geographical areas within the outlined central region, soil textures, soil OM content and soil pH levels. Refer to label for specific rate for your geographical region and soil characteristics.			For burndown and residual control. Contains the active ingredients found in Classic and Express® herbicides. See label for details on weeds controlled and restrictions, including high pH and coarse textured soils. For 1.1 up to and including 2.2 oz/ac Canopy EX, plant soybeans a minimum of 7 days after Canopy EX application. For >2.2 up 3.3 oz/ac Canopy EX, plant soybeans at minimum of 14 days after Canopy EX application.		
Command®	3ME®	1.67-2.67 pts. Upper rate is northern area rate, see label			PPI. Tankmixes include: Dual products, Prowl/Stealth, Sencor, Sonalan, and Trifluralin.		
Dual II MAGNUM, Dual MAGNUM, or Cinch	7.64E 7.62E 7.64	Coarse ≤3% OM 1-1.33 pts.	Medium ≤3% OM 1.33-1.67 pts.	Fine ≤3% OM 1.33-1.67 pts.	Refer to label for rates on soils with 6-20% OM. PPI in the top 2 inches of soil PRE. Use higher rates for control of yellow nutsedge or black nightshade. See the label for many suitable tankmix partners including Sencor.		
Duramax™	5.4 WSL	Apply a minimum of 18 ozs./A when tankmixing with Aim, Authority, Canopy XL, Valor, Gangster, or Gauntlet herbicides. Can apply up to 2.25 pts./A for difficult to control annual weeds. Refer to label for regional restrictions and tankmix recommendations.			Preplant, preemergence and at-plant applications. Apply prior to crop emergence. Many tankmix partner recommendations available on the Duramax label.		
Durango® DMA	5.4 WSL	Apply a minimum of 18 ozs./A when tankmixing with Aim, Authority, Canopy XL, Valor, Gangster, or Gauntlet herbicides. Can apply up to 2.25 pts./A for difficult to control annual weeds. Refer to label for regional restrictions and tankmix recommendations.			Preplant, preemergence and at-plant applications. Apply prior to crop emergence. Many tankmix partner recommendations available on the Durango DMA label.		
Enlite™ + COC† or NIS†	47.8% DG	2.8 - 4.25 ozs. + 1-2 gals./100 gal. (2 gal. rate for arid conditions) or 1 qt./100 gal.			†Required for burndown applications. Three-way premix including two modes of action for fall or spring applications. Provides selective burndown and preemergence weed control. Controls broadleaves in addition to partial control of annual grasses. Refer to label for suggested tankmix partners.		
Envive®	41.3% DG	Rate Per Acre† Medium & Fine soils - 0.5-5% OM <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">No soil pH restriction</td> <td style="padding: 5px;">Composite soil pH of 7 or less</td> </tr> </table> Central Region 2.5 ozs. or Southern Region 2.5-4 ozs.			No soil pH restriction	Composite soil pH of 7 or less	†Rate dependent on geographic use region, soil pH and soil type, and weed species. See <i>Geographic Use Regions</i> for state specific restrictions on the product label. For burndown applications, best results are achieved with the addition of 2,4-D LVE and is required for control of certain weeds. Pre-plant, pre-plant burndown and preemergence for selective burndown and residual control of broadleaf weeds and partial control of nutsedge and annual grasses. Three-way premix providing two modes of action.
No soil pH restriction	Composite soil pH of 7 or less						
Extreme® + NIS + AMS	2.17L	3 pts. + 1 pt./100 gal. + 8.5-17 lbs./100 gal.			Preplant or Preemergence for no-till soybeans & stale seedbed. Burndown and residual for many weeds. Add NIS and AMS (or other water conditioner), to aid in control of emerged weeds.		



## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED

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Product	Formulation	Rate Per Acre			Comments
Fierce®	76WDG	3 ozs.- 3.75 ozs./A			Preplant, Preemergence, and up to 3 days after planting. Provides residual control of grass and small seeded broadleaf weeds. Refer to label for suggested tank mix partners.
Fierce XLT	62WDG	4 ozs.- 5.25 ozs./A†			†Do not use more than 3.75ozs./A on soils with a composite pH of greater than 6.8. Preplant, Preemergence, and up to 3 days after planting. Provides residual control of grass and broadleaf weeds. Rates dependent on geographic region, pH, soil type. Refer to label for state specific restrictions. For burndown applications, best results are achieved by tankmixing with 2,4-D LVE and is required for control of certain species.
FirstRate®	84WDG	3% OM or less .6 ozs.† ≥3% OM .75 ozs.† † Specific geographical area, refer to label.			PPI in the top 1-3" or PRE. Giant ragweed and common cocklebur may require higher rates or sequential POST applications. Add adjuvant to aid in control of emerged weeds.
Gangster® (Gangster V & Gangster FR)	WSP	≤ 5% OM 2.4-3.6 ozs.†			†Consult label for details on rate. PPI or PRE. Apply before soybeans crack the soil surface. Add surfactants to aid in control of emerged weeds.
Intimidator	EC	0 – 4.48 pts †			†Intimidator rate and restrictions are designated by Region, organic matter and soil type, refer to the label for your specific area.
Linex®	4L	Coarse 1-3%OM 1-1.25 pts. 3-6%OM 1.25-2 pts.	Medium 1-3%OM 1-2 pts. 3-6%OM 1.5-2 pts.	Fine 1-3%OM 1.25-2 pts. 3-6%OM 2 pts.	PRE before soybeans emerge. Plant seed at least 1.5" deep. Consult label for details on crop injury and rotational restrictions. Helps control many broadleaf weeds and annual grasses.
Lorox®	50DF	Coarse ≤3%OM 1-1.25 lbs. 3-6%OM 1.25-2 lbs.	Medium ≤3%OM 1-2 lbs. 3-6%OM 1.5-2 lbs.	Fine ≤3%OM 1.25-2 lbs. 3-6%OM 2 lbs.	PRE before soybeans emerge. Plant seed at least 1.5" deep. Consult label for details on crop injury and rotational restrictions. Helps control many broadleaf weeds and annual grasses.



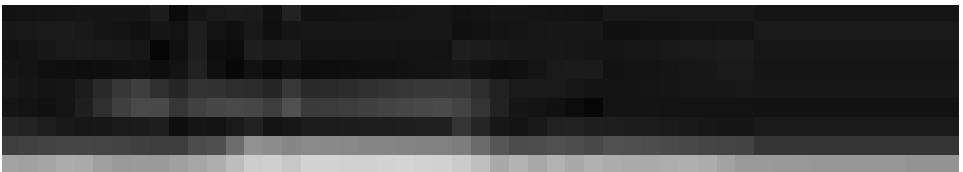
## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED



PPI = preplant incorporated      PRE = surface applied before crop emergence

Product	Formulation	Rate Per Acre			Comments									
<b>Matador</b>  <b>(Matador-S</b> is a more concentrat- ed product than Mata- dor. To find the equiva- lent rate of Matador-S, multiply Matador rate by .75. 4 pts of Matador is equivalent to 3 pts of Matador-S)	EC	Soil Texture (OM)			<p>This product may be applied preplant incorporated, preplant surface or preemergent surface, or as a sequential preemergent application. Do not apply Matador preemergence to Soybeans in CA, ND and MN north of Highway #210. Refer to label for complete instructions and further restrictions.</p> <p><b>Preplant Surface Application.</b> Matador may also be used in reduced-till and no-till systems. Applications may be made up to 30 days before planting or after planting, but before soybean emergence. Residual herbicides such as Canopy, FirstRate, Command, Python, and Stealth may be tank mixed for additional weed control. If weeds are present at time of application, burndown herbicides may be added to the tank mixes (see Burndown Weed Control section). Refer to the tank mix partner product labels for specific rates and use directions. Refer to label for complete instructions and restrictions.</p>									
		Coarse <sup>1</sup>	Medium	Fine <sup>2</sup>										
		.5-2%OM na <sup>1</sup> 1.6-2 pts. <sup>4</sup> 2-3%OM 1.6-2 pts. <sup>4</sup> >3%OM <sup>3</sup> 2-2.4 pts.	.5-2%OM 2.4-2.7 pts. 2-3%OM 2.4-2.7 pts. ≥3%OM <sup>3</sup> 2.7-3.1 pts.	.5-2%OM 3.1-3.5 pts. 2-3%OM 3.1-3.5 pts. ≥3%OM <sup>3</sup> 3.5-3.9 pts.										
		<p><sup>1</sup> Do not use on sand soils. On coarse-textured soils, do not use on loamy sand with less than 2%OM.</p> <p><sup>2</sup> Silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions of the U.S.</p> <p><sup>3</sup> For preplant incorporated application, use the lower rate.</p> <p><sup>4</sup> For AL, AR, FL, GA, LA, MS, MO, NC, OK, SC, TN, TX, VA. See section below IN COARSE (Light) SOILS.</p>												
		<p>(Rates when used alone in preplant or preemergence application on coarse soils in the states of AL, AR, FL, GA, LA, MS, MO, NC, OK, SC, TN, TX, VA)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="3">Soil Texture (OM) Pts Matador/A<sup>2</sup></td> </tr> <tr> <td>Coarse</td> <td></td> <td></td> </tr> <tr> <td>.5-1%OM na<sup>1</sup> 1.6-2.7 pts. 1% or &gt;OM 1.6-2.7 pts.</td> <td></td> <td></td> </tr> </table> <p><sup>1</sup> Do not use on sand with less than 1%OM. The 1.6-2.7 pts is for Sandy loam or loamy sand.</p> <p><sup>2</sup> Use the higher rate under heavy weed pressure and/or soils higher in OM.</p>				Soil Texture (OM) Pts Matador/A <sup>2</sup>			Coarse			.5-1%OM na <sup>1</sup> 1.6-2.7 pts. 1% or >OM 1.6-2.7 pts.		
Soil Texture (OM) Pts Matador/A <sup>2</sup>														
Coarse														
.5-1%OM na <sup>1</sup> 1.6-2.7 pts. 1% or >OM 1.6-2.7 pts.														
Metribuzin	DF75%	Coarse	Medium	Fine	<p>Refer to label for state exceptions.</p> <p>PPI or PRE but before crop emerges. Do not apply to sandy or low OM soils (&lt;2%OM). Crop injury is more likely on soils of pH 7.5 or greater. Refer to label for sensitivity of soybean varieties to Sencor applications. Helps control many broadleaf weeds and grasses. Watch for weeds resistant to triazine herbicides. Labeled for many tankmixes.</p>									
		<2%OM Do not use! 2-4%OM .5 lb. >4%OM .66 lb.	<2%OM .5-.66 lb. 2-4%OM .66-.83 lb. >4%OM .83-1 lb.	<2%OM .66-.83 lb. 2-4%OM .83-1 lb. >4%OM 1-1.16 lb.										







## CLEAN FIELDS ADD UP TO STRONG YIELDS

### Product Advantages and Benefits

#### Rowel™ Herbicide

- # Flumioxazin-based pre-emergence residual herbicide for use in **soybeans and cotton**
- # Provides outstanding residual control of tough-to-control, large- and small-seeded broadleaf weeds

#### Rowel™ FX Herbicide

- # Flumioxazin and Chlorimuron-based pre-emergence residual herbicide for use in **soybeans**
- # Two modes of action for enhanced residual control of tough-to-control, large- and small-seeded broadleaf weeds

### ROUNDUP READY PLUS® INCENTIVES

Earn up to **\$4.50/A cash back** when used with Roundup WeatherMAX® or Roundup PowerMAX®.

For more details, visit [RoundupReadyPLUS.com](http://RoundupReadyPLUS.com), or contact your local Monsanto representative.

Endorsed by  
**ROUNDUP READY PLUS.**  
CROP MANAGEMENT SOLUTIONS

ROUNDUP TECHNOLOGY® includes Monsanto's glyphosate-based herbicide technologies. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** **ALWAYS READ AND FOLLOW IRM, WHERE APPLICABLE, GRAIN MARKETING AND ALL OTHER STEWARDSHIP PRACTICES AND PESTICIDE LABEL DIRECTIONS.** Rowel™ Herbicide and Rowel™ FX Herbicide are not registered in all states. Rowel™ Herbicide and Rowel™ FX Herbicide may be subject to use restrictions in some states. The distribution, sale, or use of an unregistered pesticide is a violation of federal and/or state law and is strictly prohibited. Check with your local Monsanto dealer or representative for the product registration status in your state. **TANK MIXTURES:** The applicable labeling for each product must be in the possession of the user at the time of application. Follow applicable use instructions, including application rates, precautions and restrictions of each product used in the tank mixture. Monsanto has not tested all tank mix product formulations for compatibility or performance other than specifically listed by brand name. Always predetermine the compatibility of tank mixtures by mixing small proportional quantities in advance. Rowel™, Roundup PowerMAX®, Roundup Ready PLUS®, Roundup Technology® and Roundup WeatherMAX® are registered trademarks of Monsanto Technology LLC. ©2015 Monsanto Company.

## **NOTES**



## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED



PPI = preplant incorporated      PRE = surface applied before crop emergence

Product	Formulation	Rate Per Acre	Comments																								
OpTill + MSO† + AMST† or UANT	68% WG	2 ozs. + 1 gal./100 gals. + 8.5 to 17 lbs./100 gals. or 1.25 to 2.5 gals./100 gals.	†For optimum burndown activity. OpTill provides both contact burndown and residual preemergence broadleaf and grass weed control. Minimal preplant interval required between OpTill app. and soybean planting is 30 days for coarse soils with ≤ 2% OM (no restriction for medium and fine soils or coarse soils with >2% OM). Apply preplant up to preemerge. Residual preemergence applications must be activated with moisture; refer to label. Rainfast in 1 hr. Always include glyphosate for optimum burndown.																								
OpTill® PRO  + MSO + AMS or UAN	68% WG + 6.0EC Dual Chambered Jug	One dual-chambered jug will treat 20 acres. For less than 20 acres, apply 2 oz./A of the Dry component and 10.0 fl. oz./A of the Liquid component.  + 1.0% v/v + 8.5–17 lb./ 100 gal or 1.25–2.5% v/v	May be applied in the fall and/or spring in reduced or no-till soybean. OpTill PRO provides both contact burndown and premium residual preemergence broadleaf and grass weed control. Minimum preplant interval required between application and soybean planting is 30 days for coarse soils with <2% OM (no restriction for medium and fine soils or coarse soils with >2% OM). Apply preplant up to preemerge. Residual preemergence applications must be activated with moisture; refer to label. Rainfast in 1 hour. Always include glyphosate for optimum burndown.																								
Outlook®	6EC	Coarse      Medium      Fine  ≤3%OM      ≤3%OM      ≤3%OM 12-14 ozs.      14-18 ozs.      14-18 ozs. ≥3%OM      ≥3%OM      ≥3%OM 14-18 ozs.      18-21 ozs.      18-21 ozs.	Preplant, preemergence, and postemerge (from emergence through 5th trifoliolate). Outlook does not control emerged weeds.																								
Outlook	6EC	Coarse      Medium      Fine  ≤3%OM      ≤3%OM      ≤3%OM 12-14 ozs.      14-18 ozs.      14-18 ozs. ≥3%OM+      ≥3%OM+      ≥3%OM+ 14-18 ozs.      18-21 ozs.      18-21 ozs.	PPI into the top 2" of soil or PRE for annual grasses and small seeded broadleaf weeds. See label for soil type rates. Incorporation is not recommended on coarse soils with less than 1.5% OM. Tankmixes include Sencor, Pursuit and many others.																								
Prefix™	5.29 lb. a.i.	2 pts.† †Rates vary according to soil texture, OM content, and geographical region. Refer to label for details.	Apply 14 days preplant or PRE on all soils to control or suppress weeds for 4-5 weeks when followed by a planned postemergence herbicide. May be tank- mixed postemergence with glyphosate in glyphosate tolerant soybeans up to 3rd trifoliolate. Do not apply Flexstar or Reflex in the same season to fields treated with Prefix.																								
Prowl or Stealth	3.3EC	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Preplant Surface or PPI</th> </tr> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> </thead> <tbody> <tr> <td>≤3%OM 1.8 pts.</td> <td>≤3%OM 3 pts.†</td> <td>≤3%OM 3.6 pts.</td> </tr> <tr> <td>≥3%OM 2.4 pts.</td> <td>≥3%OM 3.6 pts.</td> <td>≥3%OM 3.6 pts.</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Preemergence</th> </tr> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> </thead> <tbody> <tr> <td>≤3%OM 1.8 pts.</td> <td>≤3%OM 2.4 pts.</td> <td>≤3%OM 2.4 pts.</td> </tr> <tr> <td>≥3%OM 1.8 pts.</td> <td>≥3%OM 2.4 pts.</td> <td>≥3%OM 3 pts.</td> </tr> </tbody> </table>	Preplant Surface or PPI			Coarse	Medium	Fine	≤3%OM 1.8 pts.	≤3%OM 3 pts.†	≤3%OM 3.6 pts.	≥3%OM 2.4 pts.	≥3%OM 3.6 pts.	≥3%OM 3.6 pts.	Preemergence			Coarse	Medium	Fine	≤3%OM 1.8 pts.	≤3%OM 2.4 pts.	≤3%OM 2.4 pts.	≥3%OM 1.8 pts.	≥3%OM 2.4 pts.	≥3%OM 3 pts.	†For heavy clay soils, use 3.6 pts./acre broadcast rate. Rate restriction applies in certain regions, see label. Preplant surface: Apply up to 15 days prior to planting. May apply up to 45 days prior to planting when used in a tankmix or applied sequentially with appropriate tankmix partner. PPI: Apply up to 60 days prior to planting. Incorporate within 7 days of application. Preemergence: Apply at planting or 2 days after planting. Do not make applications preemergence north of Interstate 80, except as specified in supplemental labeling. Refer to Prowl or Stealth label for applications in this geographical area (IN, MI, OH only).
Preplant Surface or PPI																											
Coarse	Medium	Fine																									
≤3%OM 1.8 pts.	≤3%OM 3 pts.†	≤3%OM 3.6 pts.																									
≥3%OM 2.4 pts.	≥3%OM 3.6 pts.	≥3%OM 3.6 pts.																									
Preemergence																											
Coarse	Medium	Fine																									
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## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED

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Product	Formulation	Rate Per Acre			Comments	
Prowl H20	3.8CS	Preplant Surface or PPI			<small>†Rate restriction applies in southern states, see label. ††For heavy clay soils, use 3.2 pts./A.</small> <small>Preplant surface: Apply up to 15 days prior to planting. May apply up to 45 days prior to planting when used in a tankmix or applied sequentially with appropriate tankmix partner.</small> <small>PPI: Apply up to 60 days prior to planting.</small> <small>Preemergence: Apply at planting or 2 days after planting. Do not make applications preemergence north of Interstate 80, except in the states of IN, MI, and OH, or as specified in other supplemental labeling.</small>	
		Coarse	Medium	Fine		
		<3%OM	<3%OM	<3%OM		
		1.5 pts.	2.5 pts.†	3 pts.		
		>3%OM	>3%OM	>3%OM		
	80WDG	Preemergence			<small>PPI into the top 2-3" or PRE. Apply early preplant to emergence. Can be tankmixed with many products for grass and additional broadleaf control. Additional broadleaf weeds controlled with higher rates. Add adjuvants to aid in control of emerged weeds.</small>	
		Coarse	Medium	Fine		
		<3%OM	<3%OM	<3%OM		
		1.5 pts.	2 pts.†	2 pts.		
		>3%OM	>3%OM	>3%OM		
Python®	80WDG	1.5 pts.	2 pts.	2.5 pts.††	<small>PPI into the top 2-3" or PRE. Apply early preplant to emergence. Can be tankmixed with many products for grass and additional broadleaf control. Additional broadleaf weeds controlled with higher rates. Add adjuvants to aid in control of emerged weeds.</small>	
		1 oz.	1.33 ozs.	1.33 ozs.		
Roundup WEATHER-MAX or Roundup PowerMAX	5.5S	16-32 ozs.†			†Dependent on weed species and height. Apply before or after planting, but before soybeans emerge. Controls many annual grasses and broadleaf weeds, and perennials. Consult labels for details on rates and weed sizes. The addition of AMS or a water conditioner may increase the performance of Roundup brands. Surfactants may also increase performance.	
Sequence® + AMS	5.25 EW	Coarse	Medium	Fine	<small>PRE. Apply before soybeans emerge. Burndown and residual for many grasses and broadleaf weeds. Can be applied up to the 3rd trifoliolate in GT soybeans</small>	
		<3%OM 2.5-3.5 pts.	<3%OM 3.5-4 pts.	<3%OM 3.5-4 pts.		
Sharpen® + glyphosate + MSOT + AMST	2.85 SC	<small>3.5%OM+ 3.5 pts.</small> <small>+ 8.5-17 lbs./100 gals.</small>			<small>For optimum burndown activity.</small> <small>††30 preplant interval required for coarse soils ≤2.0% OM.</small> <small>Accelerates burndown of labeled broadleaf weeds. Always include glyphosate for optimum burndown. Additional tank-mix partners include dicamba, 2,4-D, pendimethalin, imazethapyr (Pursuit) and others. 1 hour rainfast.</small>	
		<small>1.0 oz. 14 days Preplant††</small> <small>1.5 oz labeled rate</small> <small>+ 1 gall/100 gall</small> <small>+ 8.5-17 lbs/100 gal.</small>				
Sonalan®	HFP 3 lb. a.i.	Coarse	Medium	Fine	PPI in the top 1-3" of soil within 48 hours of application. Apply within 21 days of planting. Can be 1 or 2 pass incorporated, unless rainfall or irrigation incorporated (see label for details). See label for restrictions, rates, and specific rates for partial control of eastern black nightshade and ground cherry.	
Sonalan®	10G	1.5-2 pts.	2-3 pts.	2.5-3.5 pts.	<small>PPI in the top 1-3" of soil within 48 hours of application. Apply within 21 days of planting. Two incorporation passes are needed for Sonalan 10G, unless rainfall or irrigation incorporated (see label for details). See label for restrictions, rates, and specific rates for partial control of eastern black nightshade and ground cherry.</small>	
		5.5-7.5 lbs.	7.5-9.5 lbs.	9.5-11.5 lbs.		



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Always read and follow label instructions.



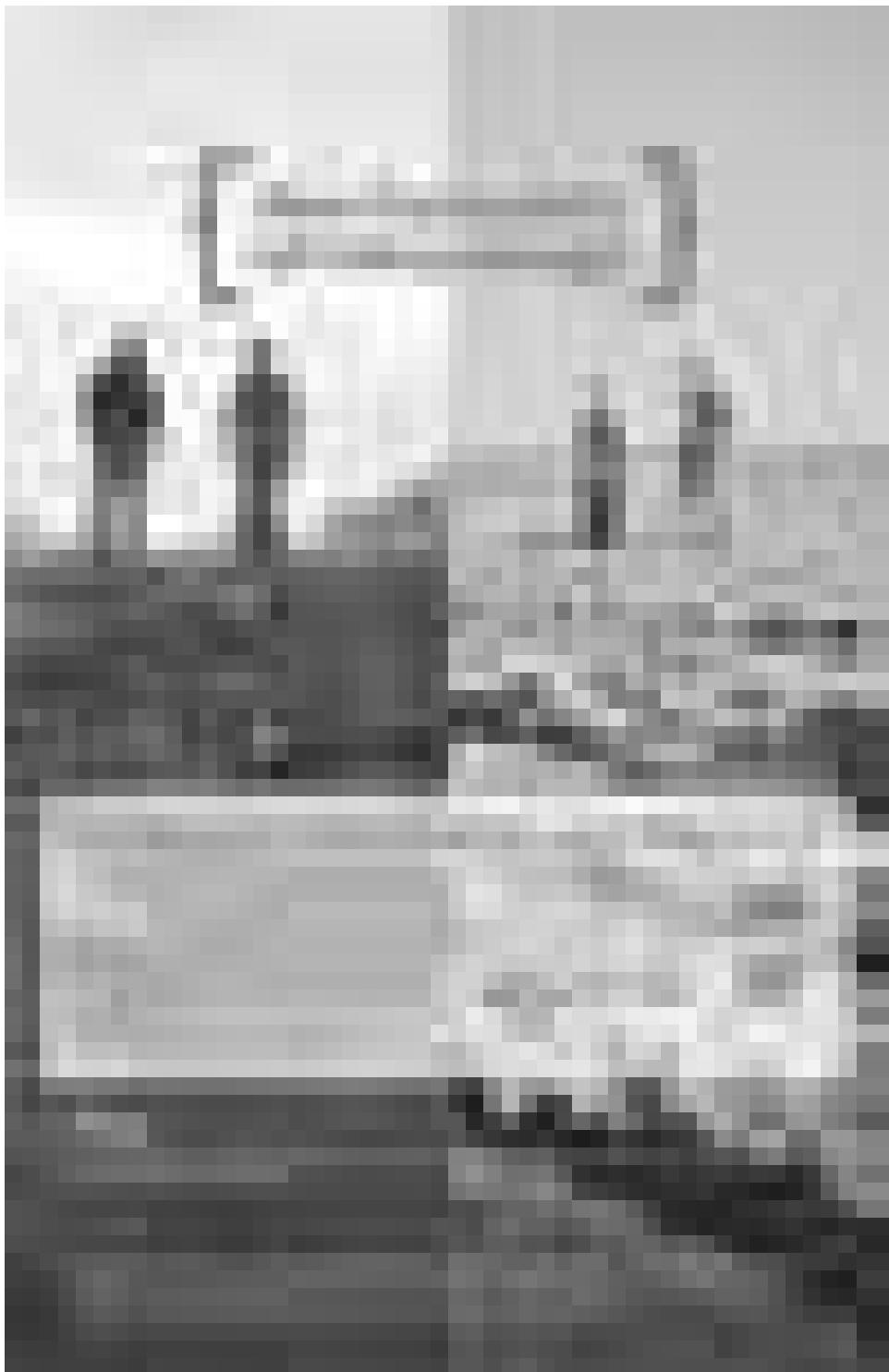
## LONG-LASTING, BROAD SPECTRUM RESIDUAL WEED CONTROL.

See for yourself at [www.valent.com/fierce](http://www.valent.com/fierce)

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Work. From People Who Care is a registered trademark of Valent U.S.A. Corporation.

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Fierce Herbicide is registered for use on no-till and reduced tillage field corn.  
Fierce Herbicide is pending EPA registration on soybeans and is anticipated on time for the 2013 season.





# SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED



PPI = preplant incorporated      PRE = surface applied before crop emergence

Product	Formulation	Rate Per Acre			Comments
Sonic®	70%DF	<u>3%OM or less</u> <u>6.45 ozs.</u> <u>&gt;3%OM</u> <u>8 ozs.</u>			<b>Preemergence application:</b> Apply at planting or within 3 days after planting. Do not apply later than 3 days after planting or crop injury may result. <b>Preplant incorporated application:</b> Apply Sonic alone or in a tankmix combination (see label). Incorporate into the top 1-3" of the final seedbed using equipment that provides thorough soil mixing. <b>Preplant surface application:</b> Apply Sonic alone or in a tankmix combination (see label). Consult the label for further rates and details, including reduced rate recommendations for suppression of weeds in Roundup Ready soybeans.
Spartan®	4F	Coarse	Medium	Fine	PPI or PRE for control of waterhemp, lambsquarters and nightshade. Tank mixes include: Dual, Prowl/Stealth, Domain, and Boundary. See label for additional information.
		<u>&lt;1%OM</u> <u>4.5-6 ozs.</u> <u>1-3%OM</u> <u>6-8 ozs.</u> <u>&gt;3%OM</u> <u>8-10.1 ozs.</u>	<u>&lt;1%OM</u> <u>6-8 ozs.</u> <u>1-3%OM</u> <u>8.0-10.1 ozs.</u> <u>&gt;3%OM</u> <u>10.1-12 ozs.</u>	<u>&lt;1%OM</u> <u>8 ozs.</u> <u>1-3%OM</u> <u>10.1 ozs.</u> <u>&gt;3%OM</u> <u>12 ozs.</u>	
Spartan Charge	3.5 lb. a.i. suspoemul-sion	Coarse†	Medium†	Fine†	†Use higher rates for soils of pH <7.0 and lowest rate for pH >7.0 within the rate range. Refer to label for precautions. Provides postemergent contact and soil residual weed control. May be applied preplant burndown, early PRE, or PRE before or after weed emergence for broadleaf weed control. Tankmix with herbicides such as glyphosate, glufosinate, or paraquat for optimum broad-spectrum control.
Surveil™ co-pack (Surveil™ V & Surveil™ FR)	Co-pack	1.8 – 3.6 oz†			†Consult label for details on rate. Fall, Preplant, or PRE. Apply up to 3 days after planting and prior to soybean emergence. Add surfactants to aid in control of emerged weeds.
Touchdown HiTech + NIS + AMS or equivalent	5 lbs. gly. acid	20-96 ozs. + 1-2 qts./100 gal. + Recommended rate			Apply before crop emerges. Use for control of many emerged weeds. Refer to label for specific rates for specific target weeds.
Touchdown Total + AMS or equivalent	4.17 lbs. gly. acid	24-115.2 ozs. + Recommended rate			Apply before crop emerges. Use for control of many emerged weeds. Refer to label for specific rates for specific target weeds.
Treflan or Trifluralin	4EC	Coarse	Medium	Fine	PPI in the top 3" within 24 hours of application. Two pass incorporation is best. See label for details and information on many tankmixes.
		<u>&lt;2%OM</u> <u>1 pt.</u> <u>2-5%OM</u> <u>1.5 pts.</u> <u>5-10%OM</u> <u>2-2.5 pts.</u>	<u>&lt;2%OM</u> <u>1.5 pts.</u> <u>2-5%OM</u> <u>1.5 pts.</u> <u>5-10%OM</u> <u>2-2.5 pts.</u>	<u>&lt;2%OM</u> <u>2 pts.</u> <u>2-5%OM</u> <u>2 pts.</u> <u>5-10%OM</u> <u>2-2.5 pts.</u>	



## SOYBEAN PREPLANT AND/OR PREEMERGENCE APPLIED

PPI = preplant incorporated      PRE = surface applied before crop emergence



Product	Formulation	Rate Per Acre	Comments									
Trivence	61.3% DG	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; padding: 2px;">6.0 - 10 oz.</td> </tr> <tr> <td style="width: 50%;">On COARSE soil use 7.25 oz. or less</td><td style="width: 50%;">On MEDIUM soil use 8.7 oz. or less</td></tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">In the Central Region, do not exceed 6.0 oz. on soils with a composite pH greater than 7.0.</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">In the Southern Region, do not exceed 9.0 oz. on soils with a composite pH greater than 7.0.</td> </tr> </table>	6.0 - 10 oz.		On COARSE soil use 7.25 oz. or less	On MEDIUM soil use 8.7 oz. or less	In the Central Region, do not exceed 6.0 oz. on soils with a composite pH greater than 7.0.		In the Southern Region, do not exceed 9.0 oz. on soils with a composite pH greater than 7.0.		May be applied anytime from fall through spring, up to 3 days after planting. Applications for burndown must include either a crop oil concentrate or a non-ionic surfactant.	
6.0 - 10 oz.												
On COARSE soil use 7.25 oz. or less	On MEDIUM soil use 8.7 oz. or less											
In the Central Region, do not exceed 6.0 oz. on soils with a composite pH greater than 7.0.												
In the Southern Region, do not exceed 9.0 oz. on soils with a composite pH greater than 7.0.												
Valor® SX or Rowel + Metribuzin	51%WDG	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">2-3 ozs.† + 75 4 -6 oz</td><td style="width: 50%; text-align: center; padding: 2px;">3-5 ozs.†</td></tr> </table>	2-3 ozs.† + 75 4 -6 oz	3-5 ozs.†	†Rates vary according to weeds species and soil OM content (refer to Valor SX label). Apply PRE but before crop emerges. Do not apply Metribuzin to sandy or low OM soils (<2%OM). Refer to label for sensitivity of soybean varieties to Sencor applications. Helps control many broadleaf weeds including kochia and grasses. Watch for weeds resistant to triazine herbicides.							
2-3 ozs.† + 75 4 -6 oz	3-5 ozs.†											
Valor® XLT or Rowel FX™	40.3%WDG	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">3-5 ozs.†</td><td style="width: 50%; text-align: center; padding: 2px;">†Do not use more than 2.5 ozs./A on soils with a pH of ≤6.8. This rate will provide suppression of certain weeds. Refer to label. Add 0.5 to 1.0 oz. Valor SX for additional control when Valor XLT is applied at 2.5 ozs./A. Rates dependent on geographic region, pH, soil type and weed species. Refer to label for state specific restrictions. For burndown applications, best results are achieved by tankmixing with 2,4-D LVE and is required for control of certain species.</td></tr> </table>	3-5 ozs.†	†Do not use more than 2.5 ozs./A on soils with a pH of ≤6.8. This rate will provide suppression of certain weeds. Refer to label. Add 0.5 to 1.0 oz. Valor SX for additional control when Valor XLT is applied at 2.5 ozs./A. Rates dependent on geographic region, pH, soil type and weed species. Refer to label for state specific restrictions. For burndown applications, best results are achieved by tankmixing with 2,4-D LVE and is required for control of certain species.								
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Verdict® + MSOT + AMS or UAN††	5.57 EC	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center; padding: 2px;"><u>Spring Applications</u>††† 5-10 ozs.</td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 2px;"><u>Fall Applications</u> 5-10 ozs.</td> </tr> <tr> <td style="width: 33%; text-align: center; padding: 2px;">+ 1 gal./100 gal.</td><td style="width: 33%; text-align: center; padding: 2px;">+ 8.5 to 17 lbs./100 gal. or</td><td style="width: 33%; text-align: center; padding: 2px;">+ 1.25 to 2.5 gals./100 gal.</td></tr> </table>	<u>Spring Applications</u> ††† 5-10 ozs.			<u>Fall Applications</u> 5-10 ozs.			+ 1 gal./100 gal.	+ 8.5 to 17 lbs./100 gal. or	+ 1.25 to 2.5 gals./100 gal.	†Refer to label for details. ††For optimum burndown activity. †††Verdict may be applied in the spring early preplant or preemergence for burndown in reduced till soybeans. <b>Planting restrictions (intervals) are as follows:</b> For 5 ozs./A at 30 days for coarse soils with ≤2% OM. 0 days for all other soils. For 7.5 ozs./A at 30 days for coarse soils with ≤2% OM. 14 days for all other soils. For 10 ozs./A at 44 days for coarse soils with ≤2% OM. 30 days for all other soils. Always include glyphosate for optimum burndown. Improves burndown of many broadleaf weeds. Tank-mix additional Outlook for residual control of grasses and pigweed spp. Not for use in CA.
<u>Spring Applications</u> ††† 5-10 ozs.												
<u>Fall Applications</u> 5-10 ozs.												
+ 1 gal./100 gal.	+ 8.5 to 17 lbs./100 gal. or	+ 1.25 to 2.5 gals./100 gal.										
Warrant®	3CS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Coarse</th><th style="width: 33%;">Medium</th><th style="width: 33%;">Fine</th></tr> <tr> <td style="text-align: center; padding: 2px;">≤1.5%OM 1.25-1.6 qts</td><td style="text-align: center; padding: 2px;">≤1.5%OM 1.25-1.7 qts</td><td style="text-align: center; padding: 2px;">≤1.5%OM 1.25-1.9 qts</td></tr> <tr> <td style="text-align: center; padding: 2px;">≥1.5%OM 1.25-1.7 qts.</td><td style="text-align: center; padding: 2px;">≥1.5%OM 1.25-1.9 qts.</td><td style="text-align: center; padding: 2px;">≥1.5%OM 1.25-2.0 qts.</td></tr> </table>	Coarse	Medium	Fine	≤1.5%OM 1.25-1.6 qts	≤1.5%OM 1.25-1.7 qts	≤1.5%OM 1.25-1.9 qts	≥1.5%OM 1.25-1.7 qts.	≥1.5%OM 1.25-1.9 qts.	≥1.5%OM 1.25-2.0 qts.	May be applied Preplant, At-Planting, and Preemergence. Mechanical incorporation is not recommended. See label for additional instructions and restrictions.
Coarse	Medium	Fine										
≤1.5%OM 1.25-1.6 qts	≤1.5%OM 1.25-1.7 qts	≤1.5%OM 1.25-1.9 qts										
≥1.5%OM 1.25-1.7 qts.	≥1.5%OM 1.25-1.9 qts.	≥1.5%OM 1.25-2.0 qts.										



## SOYBEANS-POSTEMERGENCE

AMS = Ammonium sulfate such as Actamaster

COC = Crop oil concentrate such as Herbimax MSO = Methylated seed oil

NIS = Nonionic surfactant such as Activator 90 or Liberate UAN = Urea ammonium nitrate solution=28 -32%



Product	Formulation	Rate Per Acre	Comments
Abundit™ Extra	4 lb. a.i.	16-32 ozs.	This product may be applied post-emergence to Roundup Ready Soybeans from the cracking stage throughout flowering. Refer to label for specific rates, instructions and precautions as well as adjuvant information.
Assure® II or Targa® + COC or NIS or MSO	8.8 EC	4-12 ozs. + 1 gal./100 gal. or 1 qt./100 gal. or 1 gal./100 gal.	Can be tankmixed with other conventional soybean herbicides. Consult product labels for further directions.
Assure II or Targa + Glyphosate	8.8 EC	4-8 ozs. + varies	Tankmix Assure II with glyphosate for control of volunteer glyphosate tolerant corn. Consult product labels for directions for additives and further instructions.
Basagran® + COC and/or UAN or AMS	4L	1-2 pts. + 1-2 pts. and/or 4-8 pts. or 2.5 lbs.	Apply to small actively growing weeds between the 18th and 25th day after planting. Consult label for rate to use based on weed species and stage of growth at application. See the label for Basagran split-shot recommendations on Canada thistle and yellow nutsedge. Apply in 20-40 gals. water at a minimum of 40 PSI. Do not cultivate within 5 days before or 7 days after application. Rainfast in 1 hour.
Basagran + Ultra Blazer® + NIS or COC	4L 2.0 EC	1-2 pts. + .5-1 pt.  + 1-2 pts./100 gal. or 1-2 pts.	See label for COC+AMS or UAN adjuvant option. Apply when weeds are actively growing and at the correct stage of growth for both products. Apply in a minimum of 20 gals. water at a minimum of 40 PSI. Do not cultivate within 5 days before or 7 days after application. Rainfast in 1 hour.
Basagran + COC or MSO or UAN or AMS	4L	1-2 pts. + 2 pts. or 1.5 pts. or 4-8 pts. or 2.5 lbs.	Apply when weeds are actively growing and at the correct stage of growth for both products. See the label for use guidelines.
Basagran + Butyrac	4L 200	1.5-2 pts. + 2 ozs.	Tankmix for morningglory species. Consult label for Basagran rate based on weed species and its stage of growth at application. Use only the amine formulations of 2,4-DB. Apply in a minimum of 20 gals. water at a minimum of 40 PSI. Do not cultivate within 5 days before or 7 days after application. Rainfast in 1 hour. Consult the label for soybean injury potential. Do not add any adjuvants.
Basagran + Pursuit + NIS or COC or MSO + UAN or AMS	4L 2AS	1-1.5 pts. + 4 ozs. + 1 qt./100 gal. or 1.25 gals./100 gal. or 1 gal./100 gal. + 1.25-2.5 gals./100 gal. or 12-15 lbs./100 gal.	Apply when weeds are small and actively growing. Improves control of lambsquarters, Venice mallow, wild sunflowers and black nightshade.



## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Butyrac® (2,4-DB)	200	11.2-14.4 ozs.	For use only in a directed band spray application. Do not allow spray to contact growing terminals as excessive crop injury will result. Apply in a minimum of 10 gals/A water at lower PSI. Most often used as a tankmix at 2 ozs./A. Consult label for applications timing, precautions on soybean injury and drift control. Do not tankmix with Sevin-Carbaryl Insecticide as severe injury may result.
Cadet + NIS or COC + UAN or AMS	.91 EC	.6-.9 oz.† + 1 qt./100 gal. or 1-2 pts. + 1-2 qts. or 2-2.5 lbs.	†A rate of .4-.6 is recommended with use with glyphosate. Apply from preplant to full flowering stage. No antagonism with post grass herbicide tankmix partners.
Classic® + NIS or COC + UAN or AMS or MSO	25%DF	.5-.75 oz. + 1 qt./100 gal. or 1 gal./100 gal. + 2 qts. or 2 lbs. or 1 gal./100 gal.	Do not apply to soils with a pH of 7.0 or greater. Apply to actively growing broadleaf weeds and yellow nutsedge before 1st trifoliolate until within 60 days before harvest. Consult label for rate to be based on weed species and its growth stage at the time of application. Apply in a minimum of 10 gals./A of water at 25-40 PSI (flat fans) or 40-60 PSI (hollow cone). Do not cultivate within 7 days before, during, or 7 days after application. Consult the label for crop rotation and other restrictions. Rainfast in 1 hour. Can be tankmixed with other postemerge soybean herbicides or with glyphosate products on Roundup Ready soybeans. Consult label for tankmix partners.
Cobra® + Adjuvants	2 EC	10-12.5 ozs. + Refer to Cobra label. Recommendations are dependent on relative humidity.	Consult label for weeds controlled and maximum leaf stage. Apply in 20 gals. of water at 40-60 PSI. Do not cultivate within 5 days prior to or during application. Rainfast in 30 minutes. Cobra is labeled for white mold suppression in soybeans at the 6-8 ozs./Arate.
Cobra + Resource + COC or NIS + AMS	2 EC 0.86 lb. ai	10-12.5 ozs. + 4-8 oz. + 1 qt. or 1 qt./100 gal. + 2-4 lbs. Refer to Cobra label. Recommendations are dependent on relative humidity.	For best results, apply to actively growing weeds. Do not apply Cobra + Resource when soybeans and weeds are under stress.
Cobra + FirstRate + COC + AMS	2EC 84 WDG	10-12.5 ozs.† + .3 oz. + 2-4 qts./100 gal. + 2-4 lbs.	Do not apply Cobra + FirstRate when soybeans and weeds are under stress.
Cobra + Select Max/ Intensity One® + COC or NIS + AMS	2EC 0.97 lb. a.i.	10-12.5 ozs.† + 9-20 ozs. + 1 qt. or 1 qt./100 gal. + 2-4 lbs.	For best results apply to actively growing weeds. Do not apply when soybeans and weeds are under stress.



## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Cobra + Select/ Intensity® + COC + AMS	2EC 2EC	10-12.5 ozs. + 4-16 ozs. + 2-4 qts./100 gal. + 2-4 lbs.	Check respective labels for specific rates and weeds controlled.
Dual II Magnum	7.64	1.0-1.33 pts/A	Apply as a postemergence treatment to soybeans from emergence up through the third trifoliolate leaf stage. Dual II Magnum will not control emerged weeds so it must be applied to a weed free surface or in a tank mixture with products that provide postemergence control of weeds present at time of application. Dual II Magnum can also be applied as part of a sequential soybean weed control program. If Dual II Magnum was applied as a preplant surface, preplant incorporated, or preemergence treatment a second treatment of Dual II Magnum can be applied postemergence provided that the total Dual II Magnum rate during any one crop does not exceed 2.5 pts./A
FirstRate® + NIS or COC or MSO + UAN or AMS	84 WDG	.3 oz. + 1-2 pts./100 gal. or 1.2 gals./100 gal. or 1.2 gals./100 gal. + 2.5 gals./100 gal. or 2.5 lbs.	Apply to actively growing broadleaf weeds when soybeans are between 1st trifoliolate and prior to 50% flowering stage. See label for weed heights. Check the label for many tankmix partners, rates and follow the adjuvant recommendations of the tankmix partner.
Flexstar® + MSO or COC + UAN or AMS	1.88	.75-1.3 pts.† + .5-1 gal./100 gal. or .5-1 gal./100 gal. + 1-2.5 gals./100 gal. or 8.5 lbs./100 gal.	†See label for geographic restriction on rates. Controls velvetleaf, cocklebur, lambsquarters, ragweed and pigweed species, plus other broadleaf weeds. For many registered tankmixes see label.
Flexstar + Fusion® + COC + UAN or AMS	1.88 2.56EC	.75-1.25 pts.† + 8-12 ozs. + .5-1 gal./100 gal. + 4 gals./100 gal. or 4 lbs.	†See label for geographic restriction on rates. See label for details as to adjuvant usage and weeds controlled by this tankmix.
Fusilade® DX + COC or NIS + UAN	2EC	8-24 ozs.† + 1-4 qts./100 gal. or 1-2 pts./100 gal. + 1 gal.	†Rates vary according to region and special uses, see label for selected lower rates and conditions where lower rates can be used. Consult label to determine rate based on type of grass and its stage of growth at application. Apply in 5-40 gals. of water at 40-60 PSI. Do not cultivate within 7 days before or 7 days after application. Apply before soybeans bloom. Rainfast in 1 hour.
Fusilade DX + Basagran + COC	2EC 4EC	12 ozs. + 1.5-2 pts. + 2-4 qts./100 gal.	Tankmix only if annual grasses and broadleaf weeds are at the proper stage for both products. See Basagran label for application guidelines.

## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Fusion + COC or NIS††	2.56EC	6-12 ozs.† + 2-4 qts./100 gal. or 2-4 pts./100 gal.	†Rates vary according to region and special uses. ††Some special use applications are to be mixed with a COC only, not for use with NIS. Apply postemergence for annual and perennial grass control. Consult label to determine rate based on type of grass and its stage of growth at application. Must be applied prebloom. Do not cultivate within 7 days before or 7 days after application. Rainfast in 1 hour. Use higher rate if grasses are stressed by drought, temperature, or low soil fertility.
Fusion + Classic® + or Unity™ + NIS	2.56EC 25%DF 75%DF	8-12 ozs. + .25 oz. + .083 oz. + 1-2 pts./100 gal.	Check respective labels for rates and restrictions. Ammonium fertilizer is required for velvetleaf control.
Fusion + Pursuit + COC or NIS + UAN or AMS	2.56EC 2AS	8-12 ozs.† + 4 ozs. + .5-1 gal./100 gal. or 1-2 qts./100 gal. + Up to 4 gals./100 gal. or 4 lbs.	†For control of volunteer corn and shattercane add 6 ozs. of Fusion to Pursuit.
Fusion + Flexstar + COC + UAN or AMS	2.56EC 1.88	8-12 ozs. + .75-1.25 pts.† + .5-1 gal./100 gal. + 4 gals./100 gal. or 4 lbs.	†See label for geographic restriction on rates. See label for details as to adjuvant usage and weeds controlled by this tankmix.
Harmony SG + NIS or + UAN or AMS	50%DF	.125 (1/8th) oz. + 1-2 pts./100 gal. or 4 pts./100 gal. + 4-8 pts. or 2-4 lbs.	Apply anytime after the first trifoliolate has expanded fully. Apply no later than 60 days before harvest. May be tankmixed with a grass herbicide such as Assure II. Refer to Harmony SG and Assure II labels for details.
Intensity + COC + AMS or UAN	2EC	4-16 ozs. + 1 qt. + 2.5-4 lbs. or 1-2 qts.	Intensity can be tankmixed with Basagran, Blazer, Classic, Cobra, glyphosate, Reflex, Pursuit, FirstRate, Raptor, Stellar and other products. Refer to the Intensity and tankmix partner labels for specific rates and adjuvant recommendations.



## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Outlook	6EC	Coarse ≤3%OM 12-14 ozs. ≥3%OM 14-18 ozs.	Can be applied postemerge from emergence (cracking) through 5th trifoliolate. Outlook does not control emerged weeds. If Outlook is applied in split applications and at a minimum of 14 days apart, a seasonal total of 24 oz Outlook can be applied regardless of soil type.
Marvel + NIS Or COC Or MSO + AMS	3SC	5 – 7.25 ozs. + 0.25-0.5% v/v Or 0.5-1% v/v Or 0.5-1% v/v + 8.5 – 17 lbs./100gal.	Apply from preplant through full flowering stage but prior to R3. Do not tank mix with Organo-Phosphate insecticides. Apply in a minimum of 10 gallons of finished spray per acre by ground or 5 gallons by air. Do not apply when crop foliage is wet due to heavy dew, rain, or irrigation moisture. See label for details on other restrictions and weeds controlled.
Phoenix® + NIS or COC + AMS	2EC	10-12.5 ozs. + 1-2 pts.†/100 gal. or 1 pt.†/100 gal. + 2-4 lbs.	†Refer to label for detailed adjuvant rate information and tankmix partners.
Phoenix + Select Max or Intensity One + NIS or COC + AMST†	2EC .97 lb. a.i.	10-12.5 ozs. + 9-20 ozs.  + 1 qt./100 gal. or 1 pt./100 gal. + 2-4 lbs.	†AMST must be used with any of the NIS or COC choices. Refer to label. Postemergence broadleaf herbicides in tankmix combination with Select Max/Intensity One may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone.
Phoenix + Resource + Select Max or Intensity One + NIS + COC + AMST†	2EC .86 lb. a.i. .97 lb. a.i.	10-12.5 ozs. + 4-6 ozs. + 9-20 ozs.  + 1 qt./100 gal. + 1-2 pts./100 gal. + 2-4 lbs.	†AMST must be used with any of the NIS or COC choices. Refer to label. Postemergence broadleaf herbicides in tankmix combination with Select Max/Intensity One may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone.



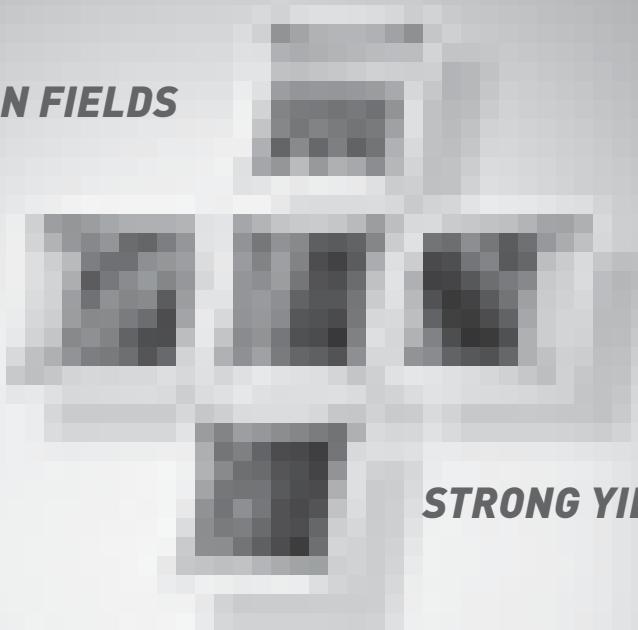
## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Prefix®	-	2-2.33 pts./A	-
Pursuit + NIS + UAN or AMS	2AS	4 ozs. + 1 qt./100 gal. + 1.25-2.5 gals./100 gal.† or 12-15 lbs./100 gal.	†Use higher rate of UAN when weeds are under moisture or temperature stress. Apply early post when weeds are actively growing. See label for weed heights, tank-mixes and adjuvant recommendations.
Raptor + MSO or COC or NIS + UAN or AMS	1AS	4-5 ozs.† + 1-2 gals./100 gal. or 1-2 gals./100 gal. or 1 qt./100 gal. + 2.5 gals./100 gal.†† or 12-15 lbs./100 gal.††	†Use the 4 ozs./A rate when preceded by a full rate of a registered soil-applied grass herbicide such as Stealth. Use the 5 ozs./A rate in a total postemergence herbicide program. ††When weeds are under temperature or moisture stress, use higher N fertilizer rates (UAN at 5% v/v or 20 lbs. AMS/100 gals.). Use 10-20 gpa at a PSI between 20 and 40 lbs. Apply when weeds are 1-4" tall. Rainfast in 1 hour. Refer to label for details.
Reflex® + NIS or COC + UAN or AMS	2 LC	.75-1.25 pts.† + 1-2 qts./100 gal. or .5-1 gal./100 gal. + 2.5 gals./100 gal. or 10 lbs./100 gal.	†Do not apply Reflex to any field more than once every two years. For postemergence control of broadleaf weeds.
Resource® + COC + AMS	.86EC	4-12 ozs. + 1 qt./100 gal. + 2-4 lbs.	Excellent control of velvetleaf up to 24-30" tall. Do not apply within 60 days of harvest. Do not apply more than 12 ozs./A in a single application or more than 16 ozs./A to soybeans during a single growing season.
Resource + Basagran or Classic or Cobra or Pursuit + COC + AMS	.86EC 4L 25%DF 2EC 2AS	4-8 ozs. + 1-2 pts. or .33-0.5 oz. or 10-12 ozs. or 4 ozs. + Varies + 2-4 lbs.	Apply to small actively growing broadleaf weeds. Resource adds excellent control of velvetleaf and up to 3" tall common lambsquarters to the tankmix. Do not apply Resource within 60 days of harvest. Do not apply more than 12 ozs./A in a single application or more than 16 ozs./A to soybeans during a single growing season. Consult labels for adjuvant recommendations.



## CLEAN FIELDS



## STRONG YIELDS

*Roundup Ready PLUS® Crop Management Solutions provides the clean fields necessary to maximize the yield potential of Genuity® Roundup Ready 2 Yield® Soybeans.*

- 
- **Expert Recommendations:** Timely weed management for your crop and region
  - **Education & Training:** Stay up-to-date on important agronomic issues
  - **Cash-Back Incentives:** Use endorsed herbicides with multiple modes of action
- 

### **CROP MANAGEMENT IS YIELD MANAGEMENT**

*For more details, visit [RoundupReadyPLUS.com](http://RoundupReadyPLUS.com) or contact your local Monsanto representative.*

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Roundup Technology® includes Monsanto's glyphosate-based herbicide technologies. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides. Roundup® brand agricultural herbicides will kill crops that are not tolerant to glyphosate. Genuity Design®, Genuity Icons, Genuity® Roundup Ready 2 Yield®, Roundup Ready PLUS®, Roundup Ready®, Roundup Technology® and Roundup® are trademarks of Monsanto Technology LLC. ©2015 Monsanto Company.





## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Select Max or Intensity One + NIS or COC + AMS	0.97EC	6-32 ozs. + 1 qt./100 gal. or 1 qt. or 100 gal. + 2-4 lbs.	†AMS must be used with any of the NIS or COC choices. POST control of many grasses. Can be tankmixed with many broadleaf products including: Cobra, Basagran, FirstRate, glyphosate, Resource, Pursuit and Raptor. Can use 6-12 oz./A rate for control of volunteer corn. When tank mixing with herbicides other than glyphosate, add an additional 2 ozs./A to necessary rate for grass control.
Synchrony XP + COC† or MSO or NIS + UAN or AMS	28.4DF	.375 oz. (all soybeans) > .375-1.125 ozs./ac (STS soybeans only) + 1 gal./100 gal. (STS soybeans only) or 1 gal./100 gal. (STS soybeans only) or 1 qt./100 gal. + 2-4 qts. or 2-4 lbs.	†COC is the required adjuvant on STS soybeans unless tankmix partner requires NIS or forbids COC or MSO, refer to product labels. Can be used on non-STS soybeans with NIS only, however some crop injury may occur. See label for details and registered tankmixes.
Ultra Blazer® + NIS or COC or UAN or AMS	2L	.5-1.5 pts. + 1-2 pts./100 gal. or 1-2 pts. or 4-8 pts. or 2.5 lbs.	Apply to small and actively growing broadleaf weeds. Some grass control can occur (see special weed problems in the label). Consult the label for rates to use based on weed species and its stage of growth at application. Apply in a minimum of 20 gals. water at a minimum of 40 PSI. Do not cultivate within 5 days before or 7 days after application. Rainfast in 1 hour. Adjuvant use: Use lower rates of Liberate or LI700 when weeds are small and actively growing under favorable conditions.
Ultra Blazer + Classic + NIS	2L 25%DF	.5-1.5 pts. + .5-.75 oz. + 1-2 pts./100 gal.	For improved control of cocklebur, bristly starbur, Florida beggarweed, sunflower, and yellow nutsedge. For specific rates on each weed see the Ultra Blazer label.
Ultra Blazer + Unity + NIS	2L 75%DF	.5-1.5 pts. + .083 oz. + 1-2 pts./100 gal.	For enhanced control of cocklebur, some pigweed species, lambsquarters, and velvetleaf with suppression of wild sunflower. For improved control of velvetleaf add 1 gal. UAN/A or 2.5 lbs./A AMS to the tankmix.



## SOYBEANS-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments															
Ultra Blazer + Harmony SG or Unity + NIS	2L 25%SG	.5-1.5 pts. + .125 oz.  + 1-2 pts./100 gal.	For enhanced control of cocklebur, some pigweed species, lambsquarters, and velvetleaf with suppression of wild sunflower. For improved control of velvetleaf add 1 gal. UAN/A or 2.5 lbs./A AMS to the tankmix.															
Ultra Blazer + Pursuit + NIS + UAN or AMS	2L 2AS	8-20 ozs. + 4 ozs. + 1-2 pts./100 gal. + 1-2 qts. or 1-2 lbs.	For improved control of up to 8" cocklebur, palmer and spiny amaranth, redroot and smooth pigweed and tall waterhemp.															
Unity + NIS or COC + UAN or AMS	75%DF	.083 oz.† + .5-4 pts./100 gal. or 1 gal./100 gal. + 2 qts. or 2 lbs.	†Higher rates (0.33 oz.) may be used if soybeans are designated as "STS", consult label for further directions. The use of the higher rates of adjuvants, especially under hot and humid conditions, may increase temporary crop injury. See label for adjuvant recommendation for conditions at time of application and tankmix partners.															
Warrant®	3 ME	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th>Coarse†</th> <th>Medium†</th> <th>Fine†</th> </tr> <tr> <td><math>\leq 1.5\%</math> OM</td> <td><math>\leq 1.5\%</math> OM</td> <td><math>&lt; 1.5\%</math> OM</td> </tr> <tr> <td>1.25-1.6 qts.</td> <td>1.25-1.7 qts.</td> <td>1.25-1.9 qts.</td> </tr> <tr> <td><math>\geq 1.5\%</math> OM</td> <td><math>\geq 1.5\%</math> OM</td> <td><math>\geq 1.5\%</math> OM</td> </tr> <tr> <td>1.25-1.7 qts.</td> <td>1.25-1.9 qts.</td> <td>1.25-2 qts.</td> </tr> </table> <p>†Use the higher rate in the range for areas of heavy weed infestation.</p>	Coarse†	Medium†	Fine†	$\leq 1.5\%$ OM	$\leq 1.5\%$ OM	$< 1.5\%$ OM	1.25-1.6 qts.	1.25-1.7 qts.	1.25-1.9 qts.	$\geq 1.5\%$ OM	$\geq 1.5\%$ OM	$\geq 1.5\%$ OM	1.25-1.7 qts.	1.25-1.9 qts.	1.25-2 qts.	Apply prior to weed emergence. The app. should be made after soybeans are completely emerged but before they reach R2 stage. Apply when crop is small or direct spray to the soil surface. Optimum timing and rate of app. is when soybeans are V2-V3 at 1.5 qt/A. May be applied again when soybeans are V5-V6 if directed to the soil. Weeds emerged at the time of app. are not controlled by this product.
Coarse†	Medium†	Fine†																
$\leq 1.5\%$ OM	$\leq 1.5\%$ OM	$< 1.5\%$ OM																
1.25-1.6 qts.	1.25-1.7 qts.	1.25-1.9 qts.																
$\geq 1.5\%$ OM	$\geq 1.5\%$ OM	$\geq 1.5\%$ OM																
1.25-1.7 qts.	1.25-1.9 qts.	1.25-2 qts.																

## SOYBEANS-NO-TILL BURNDOWN

Aim + NIS	2EC	.5-1.5 ozs. + 1 qt./100 gal.	Apply prior to planting or within 24 hours after planting. Optimum broad spectrum control of weeds requires a tankmix with another burndown herbicide. See label for tankmix options, including glyphosate and 2,4-D. No delay for planting when using Aim alone.
Authority First DF + NIS + AMS or COC + AMS	70 DF	<u>3% or less OM†</u> 6.45 ozs. <u>&gt;3% OM</u> 8 ozs. + 1-2 pts./100 gal.  + 2.5 gals./100 gals.  or 1.2 gals./100 gals.  + 2.5 gals./100 gals.	†Do not apply to soils with less than 1% OM. Good control of marestail, but not ALS resistant. See specific instructions for additives for velvetleaf control.



# SOYBEANS-NO-TILL BURNDOWN



Product	Formulation	Rate Per Acre			Comments
Authority XL + MSO or COC	DF	Coarse	Medium	Fine	May be applied fall, early preplant or pre-plant. Use lower rate for glyphosate setup or higher rate when used alone for longer residual and/or heavy weed pressure.
		0.5-2%OM 3-6 ozs. 2-4%OM 3.2-7 ozs.	0.5-2%OM 3.2-7.5 ozs. 2-4%OM 3.2-8 ozs.	0.5-2%OM 4-8 ozs. 2-4%OM 4-9.6 ozs.	
		+ 1 gal./100 gals. or 1 gal./100 gals.			
RU Authority MTZ (early preplant) + COC or NIS	0.45 lb. a.i.	Standard Rate Program†			Refer to label for rate restrictions on high pH soils. †Do not apply to coarse soils with less than 1% OM. May be used as an early preplant spring treatment (up to 30-45) days prior to planting in no-till or minimum till cropping systems) or a fall treatment (to the stubble of harvested crops for the burndown of existing vegetation and preemergence control of labeled weeds the following spring in no-till and conservation tillage practice systems). Refer to label for details and for tankmix partner recommendations.
		Coarse††	Medium	Fine	
		1-2%OM 12-14 ozs. 2-4%OM 14-16 ozs. + 1 qt. or 1 qt./100 gal.	1-2%OM 14-16 ozs. 2-4%OM 16-18 ozs. + 1 qt. or 1 qt./100 gal.	1-2%OM 16-18 ozs. 2-4%OM 18-20 ozs. + 1 qt. or 1 qt./100 gal.	
RU Authority MTZ (reduced rate program for glyphosate system)	0.45 lb. a.i.	Reduced Rate Program†			A rate of .4-.6 is recommended with use with glyphosate.
		Coarse††	Medium	Fine	
		1-2%OM 8 ozs. 2-4%OM 8-10 ozs.	1-2%OM 8-10 ozs. 2-4%OM 10-12 ozs.	1-2%OM 10-12 ozs. 2-4%OM 12-14 ozs.	
Cadet + Glyphosate + MSO or COC + AMS	.91 EC	.6-9 ozs. + Recommended rates + 1 gal./100 gal. or 1 gal./100 gal. + 8.5-17 lbs./100 gal.			
Canopy	75DG	Medium & fine soils, 1.5-4%OM†			Check label for approved tankmixes, pH and geographical region restrictions and other directions. Fall applications and spring burndown before soybeans emerge.
		No pH restrictions 2.25 ozs.	Composite soil, pH of 7 or less 3-7 ozs.		
Canopy EX + COC or NIS	29.5 WDG	Medium & fine soils, 1.5-4%OM†			Check label for approved tankmixes, pH and geographical region restrictions and other directions. Fall and early preplant burndown with control of many weeds. Apply after harvest up to 7-14 days before planting soybeans, refer to label for details.
		No pH restrictions 1.1 ozs.	Composite soil, pH of 7 or less 1.5-3.3 ozs.		
		+ 1 gal./100 gal. or 1 qt./100 gal. (unless arid conditions)			



## SOYBEANS-NO-TILL BURNDOWN



Product	Formulation	Rate Per Acre	Comments
Distinct + NIS or MSO + UAN or AMS	70 DG	2.0 – 4.0 oz. + 0.25% v/v or 1.5 – 2.0 pt./A + 1.25% v/v or 5 lb./100 gal.	Preplant only. After application and a minimum accumulation of 1 inch of rainfall or overhead irrigation, a 30 day waiting interval is required before planting soybeans. Do not apply Distinct preplant to soybeans in geographic areas with average rainfall less than 25 inches.
Enlite™ + COCT† or NIST†	47.8% DG	2.8 ozs. + 1-2 gals./100 gal. (2 gal. rate for arid conditions) or 1 qt./100 gal.	†Required for burndown applications. Three-way premix including two modes of action for fall or spring applications. Provides selective burndown and preemergence weed control. Controls broadleaves in addition to partial control of annual grasses. Refer to label for suggested tankmix partners. 2,4-D LVE is recommended, and required for control of some weeds.
Envive®	41.3% DG	Rate Per Acre† Medium & Fine soils - 0.5-5% OM	†Rate dependent on geographic use region, soil pH and soil type, and weed species. See <i>Geographic Use Regions</i> for state specific restrictions on the product label. For burndown applications, best results are achieved with the addition of 2,4-D LVE and is required for control of certain weeds. Pre-plant, pre-plant burndown and preemergence for selective burndown and residual control of broadleaf weeds and partial control of nutsedge and annual grasses. Three-way premix providing two modes of action.
Extreme + NIS + AMS	2.17L	3 pts. + 1 pt./100 gal. + 8.5-17 lbs./100 gal.	Combination product containing Pursuit and glyphosate. Use to provide burndown plus residual control for some weeds.
Extreme + Sharpen + MSO† + AMST†	2.17 L 2.85 SC	2-3 pts. + 1 oz. + 1 gal./100 gal. + 8.5 to 17 lbs./100 gal.	†Adjuvants must be included for optimum burndown activity. Apply preplant through PRE only. On coarse textured soils with ≤2% OM, a 30 day preplant interval is required.
Fierce XLT + 2,4-D + COC + AMS	62WDG	4 ozs.- 5.25 ozs./A† + 1-2 pts. + 1 gal./100 gal + 8.5-17 lbs./100 gal.	†Rate should be based on soil characteristics (soil type, pH, %OM), geographic region and weed species to be controlled. Add 0.5 to 1.0 oz. Valor SX for additional control when Fierce XLT is applied at 3.75 ozs./A. Do not use more than 3.75 ozs./A on soils with a composite pH of >6.8. This rate will provide suppression of certain weeds. Refer to label.
FirstRate	84WDG	Refer to label, rates dependent on geographical location, soil OM and target species and stage of growth.	Apply before during or after planting, but prior to soybean emergence. May be tank-mixed with glyphosate or 2,4-D products.



## SOYBEANS-NO-TILL BURNDOWN



Product	Formulation	Rate Per Acre	Comments
Fusion + 2,4-D Ester + COC or NIS	2.56EC	6-12 ozs.† + 1 pt. + 2-4 qts./100 gal. or 1-2 qts./100 gal.	†Rates dependent of geographical location, target species and stage of growth. Refer to product labels for application restrictions, precautions and application timing.
Glyphosate	Various	Rates vary by product & weed targets.	See label for rates, tankmix options and restrictions.
Gramoxone SL 2.0  + NIS or COC or MSO	2L	Weed Height                          Rate/A  1-3"                                  2-2.5 pts. 3-6"                                  2.5-3 pts. 6" plus                                3-4 pts.  + 1 qt./100 gal. or 1 gal./100 gal. or 1 gal./100 gal.	Apply prior to or after planting but before soybean emergence. Avoid any tillage prior to application to permit maximum weed emergence. Weeds emerging after application will not be controlled. Addition of metribuzin will aid in burndown activity. Apply in 20-60 gals of spray at 30-50 PSI. Consult label for restrictions on using fertilizer for carrier. Rainfast in 30 minutes. Refer to label for mixing directions.
2,4-D LV4  + COC or NIS	3.84 lb. a.i.	>7 days prior to planting .75-1 pt.†  >30 days prior to planting 1-2 pts. + 1 gal./100 gal. or 1 qt./100 gal.	†Not for use on sandy soils. Applications should be made prior to planting soybeans to control broadleaf weeds in reduced or no-till systems. May be tankmixed in combination with any other herbicide labeled for preplant use in soybeans.
2,4-D LV6  + COC or NIS	5.5EC	>7 days prior to planting .50-.66 pt.†  >30 days prior to planting .67-1.33 pts. + 1 gal./100 gal. or 1 qt./100 gal.	†Not for use on sandy soils. Applications should be made prior to planting soybeans to control broadleaf weeds in reduced or no-till systems. May be tankmixed in combination with any other herbicide labeled for preplant use in soybeans.
Liberty + Sharpen + MSO + AMS	2.34 SL	29-36 ozs. + 1 oz. + 1 gal./100 gal. + 8.5-17 lbs./100 gal.	Excellent tank mix for control of glyphosate resistant weeds. Apply prior to crop emergence.
Liberty + Metribuzin + MSO + AMS	2.34 SL	29-36 ozs. + 4-8 oz. + 1 gal./100 gal. + 8.5-17 lbs./100 gal.	Excellent tank mix for control of glyphosate resistant weeds. Apply prior to crop emergence.



# SOYBEANS-NO-TILL BURNDOWN



Product	Formulation	Rate Per Acre	Comments									
Matador  <b>(Matador-S</b> is a more concentrated product than Matador. To find the equivalent rate of Matador-S, multiply Matador rate by .75, 4 pts of Matador is equivalent to 3 pts of Matador-S)	4.7 EC (Rates for reduced and no-till)	<table border="1"> <thead> <tr> <th colspan="3">Soil Texture<sup>1</sup> (Pt/A<sup>1</sup>)</th> </tr> <tr> <th>Coarse<sup>2</sup></th> <th>Medium</th> <th>Fine<sup>3</sup></th> </tr> </thead> <tbody> <tr> <td>1.6-2.7 pts.</td> <td>2.7-4 pts.</td> <td>4 pts.</td> </tr> </tbody> </table> <p><sup>1</sup>Use low rate inspecified range for low residue level or soils with less than 3%OM. Use the higher rate in specified range for high residue level or soils with greater than 3%OM.  <sup>2</sup>Do not use on sand soils. On coarse-textured soils, do not use on loamy sand soils with less than 2%OM.  <sup>3</sup>Silty clay loam soils are transitional soils and may be classified as medium-textured soils in some regions of the U.S. When using Matador, treat this soil as fine-textured.</p>	Soil Texture <sup>1</sup> (Pt/A <sup>1</sup> )			Coarse <sup>2</sup>	Medium	Fine <sup>3</sup>	1.6-2.7 pts.	2.7-4 pts.	4 pts.	This product may be applied preplant incorporated, preplant surface or preemergent surface, or as a sequential preemergent application. Do not apply Matador preemergence to Soybeans in CA, ND and MN north of Highway #210. Refer to label for complete instructions and further restrictions.  <b>Preplant Surface Application.</b> Matador may also be used in reduced-till and no-till systems. Applications may be made up to 30 days before planting or after planting, but before soybean emergence. Residual herbicides such as Canopy, FirstRate, Command, Python, and Stealth may be tank mixed for additional weed control. If weeds are present at time of application, burndown herbicides may be added to the tank mixes (see Burndown Weed Control section). Refer to the tank mix partner product labels for specific rates and use directions. Refer to label for complete instructions and restrictions.
Soil Texture <sup>1</sup> (Pt/A <sup>1</sup> )												
Coarse <sup>2</sup>	Medium	Fine <sup>3</sup>										
1.6-2.7 pts.	2.7-4 pts.	4 pts.										
	(Rates when used alone in preplant or preemergence application on coarse soils in the states of AL, AR, FL, GA, LA, MS, MO, NC, OK, SC, TN, TX, VA)	<table border="1"> <thead> <tr> <th colspan="2">Soil Texture (OM) Pts Matador/A<sup>2</sup></th> </tr> <tr> <th>Coarse</th> <th>.5-1%OM na<sup>1</sup> 1.6-2.7 pts. 1% or &gt;OM 1.6-2.7 pts.</th> </tr> </thead> </table> <p><sup>1</sup> Do not use on sand with less than 1%OM. The 1.6-2.7 pts. is for Sandy loam or loamy sand.  <sup>2</sup> Use the higher rate under heavy weed pressure and/or soils higher in OM.</p>	Soil Texture (OM) Pts Matador/A <sup>2</sup>		Coarse	.5-1%OM na <sup>1</sup> 1.6-2.7 pts. 1% or >OM 1.6-2.7 pts.						
Soil Texture (OM) Pts Matador/A <sup>2</sup>												
Coarse	.5-1%OM na <sup>1</sup> 1.6-2.7 pts. 1% or >OM 1.6-2.7 pts.											
Metribuzin + Tankmix partner	DF75%	2-5.33 ozs. + Tankmix partner†	†Tankmixes include: 2,4-D, glyphosate, Gramoxone Inteon, and others. Refer to product labels for rates, timings, restrictions as well as other pertinent information.									
OpTill + glyphosate + MSOT + AMS†	68% WG various	2 ozs. + Refer to label. + 1 gal./100 gal. + 8.5 to 17 lbs./100 gal.	†Adjuvants must be included for optimum burndown activity. Apply preplant through PRE only. On coarse textured soils with ≤2% OM, a 30 day preplant interval is required.									
Optill® PRO + glyphosate + MSO + AMS or UAN	68% WG + 6.0EC Dual Chambered Jug various	One dual-chambered jug will treat 20 acres. For less than 20 acres, apply 2 oz./A of the Dry component and 10.0 fl. oz./A of the Liquid component. + Refer to label. + 1.0% v/v + 8.5-17 lb./100 gal or 1.25-2.5% v/v	May be applied in the fall and/or spring in reduced or no-till soybean. Optill PRO provides both contact burndown and premium residual preemergence broadleaf and grass weed control. Minimum preplant interval required between application and soybean planting is 30 days for coarse soils with <2% OM (no restriction for medium and fine soils or coarse soils with >2% OM). Apply preplant up to premerge. Residual preemergence applications must be activated with moisture; refer to label. Rainfast in 1 hour.									
Panoflex	50%SG	.3 - .6 oz.	Apply as a burndown treatment prior to planting. Apply up to 7 days prior to planting soybeans. Include a spray adjuvant with applications of Panoflex. Can tankmix with Basis Blend .825 oz. + 2,4-D + COC for fields going to corn or soybeans.									



## SOYBEANS-NO-TILL BURNDOWN



Product	Formulation	Rate Per Acre	Comments
Python	80WDG	Coarse .8-1 oz.† Medium .89-1.33 ozs.† Fine .89-1.33 ozs.†	†Use higher rates for control of more broadleaf species. Apply before, during or after planting but before soybeans emerge. May be tankmixed with glyphosate, Gramoxone Inteon or 2,4-D. See label for application timings, rates and adjuvants with tankmixes.
Salvo	5E	Not less than 7 days prior to planting Up to 12.8 ozs. Not less than 14 days prior to planting 12.9-25.6 ozs.	Applications should be made prior to planting soybeans to control broadleaf weeds in reduced or no-till systems. May be tankmixed in combination with any other herbicide labeled for preplant use in soybeans. Do not use any tillage operation between application of this product and planting of soybeans.
Sharpen®  + glyphosate + MSO† + AMST†	2.85 SC	Preplant Surface up to PRE† 1.0 oz. 14 days Preplant†† 1.5 oz + labeled rate + 1 gall/100 gall + 8.5-17 lbs/100 gal.	†For optimum burndown activity. ††30 preplant interval required for coarse soils ≤2.0% OM. Accelerates burndown of labeled broadleaf weeds. Always include glyphosate for optimum burndown. Additional tank-mix partners include dicamba, 2,4-D, pendimethalin, imazethapyr (Pursuit) and others. 1 hour rainfast.
Sonic®	70% DF	3% OM or less 3 – 6.45 oz  ≥3% OM 3 – 8 oz	Preplant incorporated application: Apply Sonic alone or in tank-mix combination (see label). Incorporate in the top 1-3" of the final seedbed using equipment that provides thorough soil mixing. Preplant surface application: Apply Sonic alone or in tank-mix combination. Preemergence application: Apply alone or in a tank-mix at planting or within 3 days after planting but prior to soybean emergence. Do not
Surveil™ co-pack (Surveil™ V & Surveil™ FR)	Co-pack	1.8 – 3.6 oz†	†Consult label for details on rate. Fall, Preplant, or PRE. Apply up to 3 days after planting and prior to soybean emergence. Add surfactants to aid in control of emerged weeds.
Synchrony XP + Glyphosate	28.4DG Various	.375-.75 ozs.† + Various	†See label for details on rate restrictions for different regions and soil pH levels. For enhanced control, 2,4-D may also be added. Refer to label for tankmix combination rates, restrictions and adjuvants.
Touchdown Total + AMS	4.17 lb. a.i.	12-115.2 ozs. + 8.5-17 lbs./100 gal.	For control of emerged weeds prior to soybean emergence. See label for specific rates and limitations.



Product	Formulation	Rate Per Acre	Comments
Valor or Rowel + 2,4-D LVE + COC	SX 3.84 lb. a.i.	2-3 ozs. + 1-2 pts. + 1 pt.	Tankmixes include: Python, FirstRate, pendimethalin (Stealth, Prowl), Pursuit Plus, Squadron, Scepter, or Command. Unless otherwise stated by tankmix partner, apply Valor before planting, during planting, or up to 3 days after planting, refer to product labels. Fall applications of Valor may also be made, see label for further information. <b>Do not tankmix Valor with:</b> fluthiamide (Domain), metolachlor (Dual or Boundary), dimethenamid products (Frontier, Outlook), or alachlor products or severe soybean injury might result. Use 2 pts./A of 2,4-D for established stands of dandelion.
Valor or Rowel + Glyphosate + COC	SX Various	2-3 ozs. + .5-1 lb. a.i. + 1 pt.	
Valor or Rowel + Glyphosate + 2,4-D 4LVE + COC + AMS	SX Various 3.84 lb. a.i.	2-3 ozs. + .5-1 lb. a.i. + 1-2 pts. + 1 pt./100 gal. + 17 lbs./100 gal.	
Valor® SX or Rowel FX + Metribuzin	51%WDG	2-3 ozs.† + 75 4 -6 oz	†Rates vary according to weeds species and soil OM content (refer to Valor SX label). Apply PRE but before crop emerges. Do not apply Metribuzin to sandy or low OM soils (<2%OM). Refer to label for sensitivity of soybean varieties to Sencor applications. Helps control many broadleaf weeds including kochia and grasses. Watch for weeds resistant to triazine herbicides.
Valor XLT or Rowel FX + COC + AMS	WDG	3-5 ozs.† + 1-2 pts. + 8.5-17 lbs./100 gal.	†Rate should be based on soil characteristics (soil type, pH, %OM), geographic region and weed species to be controlled. Add 0.5 to 1.0 oz. Valor SX for additional control when Valor XLT is applied at 2.5 ozs./A. Do not use more than 2.5 ozs./A on soils with a composite pH of >6.8. This rate will provide suppression of certain weeds. Refer to label.
Verdict + MSO† + AMS or UAN††	5.57 EC	Spring Applications††† 5-10 ozs.  + 1 gal./100 gal. + 8.5 to 17 lbs./100 gal. or 1.25 to 2.5 gals./100 gal.	†Refer to label for details. ††For optimum burndown activity. †††Verdict may be applied in the spring early preplant or preemergence for burndown in reduced or no till soybeans. <b>Planting restrictions (intervals) are as follows:</b> For 5 ozs./A at 30 days for coarse soils with ≤2% OM. 0 days for all other soils. For 7.5 ozs./A at 30 days for coarse soils with ≤2% OM. 14 days for all other soils. For 10 ozs./A at 44 days for coarse soils with ≤2% OM. 30 days for all other soils. Residual PRE herbicide for control of most annual grasses, broadleaf weeds and sedges. Also provides contact burndown of many broadleaf weeds. Not for use in CA.
Vida® + Glyphosate +/or 2,4-D LV ester + COC or MSO + AMS	.208 lb. a.i.	1-2 ozs.† + Recommended rate +/or Recommended rate  + 1% v/v or 1% v/v + 2-4 lbs.	†Use higher rates for hard to control weeds such as Canada thistle, field bindweed, and kochia. Designed for use as a contact herbicide for broadleaf weed control and desiccation. May be tank mixed with glyphosate or 2,4-D. Refer to label. Immediate plantback for soybeans. Rainfast within 1 hour.



## SOYBEANS-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Abundit™ Extra		16-32 ozs.	This product may be applied post-emergence to Roundup Ready Soybeans from the crack-ing stage throughout flowering. Refer to label for specific rates, instructions and precautions as well as adjuvant information.
Assure II or Targa + COC† or NIS†	0.88EC	4-12 ozs. + 1-2 gals./100 gal. or 1 qt./100 gal.	†May add UAN (2 qts./A) or AMS (2 lbs./A). Can double UAN or AMS rates under arid conditions. This is not required to optimize performance of this product. 4-8 ozs. will control volunteer corn, rate dependent on corn height.
Cadet + glyphosate + adjuvants	.91 EC	0.4 oz. - 0.6 oz + Refer to labels. + Refer to labels.	Cadet may be applied postemergence in a tankmix with glyphosate as long as it is registered for use over-the-top in glyphosate resistant soybeans. Apply from first trifoliolate to the full flowering stage of growth. Follow the most restrictive statements of labels in all products used.
Cinco + NIS + AMS	5.4 lb. a.i.	Up to 1.5 qts.† + .5-1 gal./100 gal. + 8.5-17 lbs./100 gal.	†Midwest/Mid-Atlantic States: Refer to label for recommended rates. Weather Gard Complete at 1-2. qts./100 gal. is the preferred surfactant package. The combined total application from cracking through flowering must not exceed 2.25 qts./A. The maximum combined total for all applications is 6 qts./year.
Cobra® + glyphosate + AMS	2.0 lb. a.i.	10-12.5 ozs. + Refer to label for rates. + 2.5-4 lbs.	Apply to Roundup Ready soybeans from emergence through flowering stages. Consult product labels for further directions and additive recommendations.
Duramax® + AMS	5.4WSL	Up to 3 pts.† + 8.5-17 lbs./100 gal.	†Recommended use rate dependent on weed species, stage of growth, and water carrier spray volume.
Durango® DMA® + AMS	5.4WSL	Up to 3 pts.† + 8.5-17 lbs./100 gal.	†Recommended use rate dependent on weed species, stage of growth, and water carrier spray volume.
Extreme + NIS + AMS	2.17 L	3 pts. + 1 pt./100 gal. + 8.5-17 lbs./100 gal.	Combination product containing imazethapyr (Pursuit) + glyphosate. A 1.5 qt./A rate will deliver 4 ozs. Pursuit (2AS) equivalent and 24 ozs. glyphosate. Use to add residual weed control compared to glyphosate alone.
FirstRate® + glyphosate + AMS	84WDG	.3 ozs. + Refer to label for rates. + 8.5-17 lbs./100 gal.	Improves control of marestail, velvetleaf and ragweeds. Follow the recommendations on the glyphosate label for use of spray additives in this tankmix.
Flexstar + glyphosate	1.88 lb. a.i.	6-12 ozs. + Refer to label for rates.	For added activity for hard to control weeds such as annual morningglory and pigweed. Follow the recommendations on the glyphosate label for use of spray additives in this tankmix.



## SOYBEANS-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Flexstar GT 3.5 + MSO or COC + AMS	66 lb. a.i. (fomesafen) 2.63 lb. a.e. (glyphosate)	<u>Postemergence</u> 2.8-5.3 pts.† + 1% v/v or 1% v/v + 8.5-17 lbs./100 gal. Check label for proper rate selection and rotational restrictions	†Use higher rate of the rate range when heavy weed populations are anticipated. Refer to label for state restrictions. Flexstar GT is a premix herbicide (Touchdown Total + Flexstar + IsoLink™ adjuvant) intended for early glyphosate applications. Apply as a postemergence over-the-top app. in glyphosate tolerant soybeans to control labeled broadleaf, grass and sedge weeds.
Four Power Plus + NIS + AMS	4 lb. a.i.	Up to 2 qts. + 1-2 qts./100 gal. + 8.5-17 lbs./100 gal.	Apply from cracking stage throughout flowering. The maximum combined total application from cracking throughout flowering is 3 qts./A. The maximum combined total application during flowering is 2 qts./A.
Fusilade DX + glyphosate	2.0 lb. a.i.	4-6 ozs. + Refer to label for rates.	For control volunteer glyphosate tolerant corn. Follow the recommendations on the glyphosate label for use of spray additives in this tankmix.
Harmony SG + glyphosate	50%DF	.125 (1/8) oz. + Refer to label for rates†	†Consult product labels for further directions and additive recommendations. Improves control of lambsquarters, wild buckwheat, velvetleaf and more.
Intensity + glyphosate	2 lb. a.i.	4-8 ozs.† + Refer to label for rates.	†Rate and adjuvant concentration dependent on volunteer corn stage of growth and glyphosate formulation used. For control of volunteer Roundup Ready corn in Roundup Ready soybeans.
Intensity One + glyphosate + NIS† + AMS	.97 lb. a.i.	6 ozs. + Refer to label for rates. + Varies by glyphosate product used. + 8.5-17 lbs./100 gal.	†NIS required for some glyphosate tankmix partners. Refer to labels. For control of volunteer glyphosate tolerant corn in glyphosate tolerant soybeans.
Makaze or Makaze Yield Pro + AMS	4 lb. a.i.	Up to 2 qts. + 8.5-17 lbs./100 gal.	The combined total application from cracking throughout flowering is 3.0 qts./A. The maximum combined total application during flowering is 2.0 qts./A. Makaze Yield Pro contains IBA and kinetin, which promotes plant health for increased yields.
Marvel + Glyphosate + adjuvants	3 SC	5 – 7.5 ozs + Refer to labels + Refer to labels	Apply from preplant through full flowering stage but prior to R3. Do not tank mix with Organo-Phosphate insecticides. Apply in a minimum of 10 gallons of finished spray per acre by ground or 5 gallons by air. Do not apply when crop foliage is wet due to heavy dew, rain, or irrigation moisture. See label for details on other restrictions and weeds controlled.
Phoenix + glyphosate + AMS	2.0 lb. a.i.	10-12.5 ozs. + Refer to label for rates. + 2.5-4 lbs.	Apply to Roundup Ready soybeans from emergence through flowering stages. Consult product labels for further directions and additive recommendations.



## SOYBEANS-GLYPHOSATE TOLERANT



Product	Formulation	Rate Per Acre	Comments
Resource + glyphosate + Adjuvants	.86EC	2-10 ozs. + Refer to label for rates. + Refer to label for rates.	Apply from cotyledon growth stage up to 60 days prior to harvest. For increased control of velvetleaf and suppression of annual morningglories. Use higher Resource rate for increased morningglory suppression. Resource can be applied at 4 ozs./A for velvetleaf up to 6 leaf growth stage and 2 ozs./A for velvetleaf up to 4 leaf growth stage.
Roundup WEATHERMAX® or Roundup PowerMax® + AMS	5.5S 5.5S	22-44 ozs. + 8.5-17 lbs./100 gal.	May apply from emergence (cracking) through flowering (R2 stage soybeans). The combined total application from crop emergence through harvest must not exceed 64 ozs./A.
Select Max + glyphosate + NIS + AMS	.97 lb. a.i.	6-12 ozs. + Refer to label for rates. + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	For control of volunteer Roundup Ready corn in glyphosate tolerant soybeans. On volunteer corn – 6 ozs./A up to 12", 9 ozs./A up to 24", and 12 ozs./A up to 36" tall corn.
Sequence + AMS	5.25EW	2.5-3.5 pts. + 8.5-17 lbs./100 gal.	Apply to Roundup ready soybeans from cracking stage through 3rd trifoliolate.
Synchrony XP + glyphosate	28.4%DF	.375-1.125 ozs. + Refer to label for rates.	Use .75-1.125 oz./A on RR/STS stacked trait varieties. Improves control of lambsquarters, wild buckwheat, morningglories, yellow nut-sedge, velvetleaf, and more. Consult product labels for further directions and additives.
Touchdown Total + AMS	4.17 lbs. gly. acid	24-48 ozs. + 8.5-17 lbs./100 gal.	Apply to glyphosate tolerant soybeans from cracking stage through full flowering stage. Do not apply more than 2.2 qts./A of Touchdown Total POST/season.
Touchdown Total + Prefix + NIS + AMS	4.17 lbs. gly. acid + 5.29 lbs. a.i.	24-48 ozs. + 2 pts. + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	Do not add COC or MSO. Necrotic bronzing and spotting may occur after an application of Prefix POST. Prefix can be applied to soybeans up to the 3rd trifoliolate.



## SOYBEANS-LIBERTY TOLERANT



Product	Formulation	Rate Per Acre	Comments
Liberty + AMS	2.34 SL	29-36 ozs. + 8.5-17 lbs./100 gal.	Apply from emergence to R1 soybean in a minimum of 15 gpa of water. May be tank mixed with other residual post products up to the labeled rates and crop stage.
Liberty + Intensity + AMS	2.34 SL	29-36 ozs. + 4-8 ozs. + 8.5-17 lbs./100 gal.	Apply from emergence to R1 soybean in a minimum of 15 gpa of water for volunteer corn control. May be tank mixed with other residual post products up to the labeled rates and crop stage.
Liberty + Prefix + AMS	2.34 SL	29-36 ozs. + 1.5-2 pts. + 8.5-17 lbs./100 gal.	Apply from emergence to R1 soybean in a minimum of 15 gpa of water for late season residual. May be tank mixed with other residual post products up to the labeled rates and crop stages.
Liberty + Harmony SG + AMS	2.34 SL	29-36 ozs. + 0.83 - 0.125 ozs. + 8.5-17 lbs./100 gal.	Apply from emergence to R1 soybean in a minimum of 15 gpa of water for large lambs-quarters and velvetleaf control. May be tank mixed with other residual post products up to the labeled rates and crop stages.
Select Max + Intensity One + NIS + AMS	.97 lb. a.i.	6-12 ozs. + Refer to label for rates. + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	For control of volunteer Roundup Ready corn in glyphosate tolerant soybeans. On volunteer corn – 6 ozs./A up to 12", 9 ozs./A up to 24", and 12 ozs./A up to 36" tall corn.

## SOYBEANS HARVEST AIDS

Aim EC + NIS or MSO or COC + AMS or UAN	2 lbs. a.i.	1-1.5 ozs. + 1 qt./100 gal. or 1-2 gals./100 gal. or 1-2 gals./100 gal. + 2-4 lbs. or 2-4 gals./100 gal.	Preharvest for control of troublesome broadleaves. Apply in a manner to assure sufficient spray coverage (minimum 10 gpa by ground and 5 gpa by air). Apply after physiological maturity and the grain has begun to dry down.
<b>RU</b> Gramoxone SL 2.0 + NIS or COC	2L	8-16 ozs. + 1 qt./100 gal. or 1 gal./100 gal.	Determinate soybean varieties: Make application when soybeans are fully developed and half of the leaves have dropped and all remaining leaves are turning yellow. Indeterminate soybean varieties: Apply after 65% of seed pods have reached a mature brown color or when moisture in seed is less than 30%. Use higher rate for cocklebur. Apply in 20-40 gals. of water/A at 30-50 PSI. Rainfast in 30 minutes.



## SOYBEANS HARVEST AIDS



Product	Formulation	Rate Per Acre	Comments
Roundup WEATHERMAX or Roundup PowerMax	4.5 lb ae	Up to 3.3 qts.	Preharvest for control of annual and perennial weeds. Apply after pods have set and lost all green color. Allow a minimum of 7 days between application and harvest for non Roundup Ready soybeans, and 14 days for Roundup Ready or Roundup Ready 2 Yield Soybeans. Do not apply more than 44 ozs. by air. Not recommended for soybeans grown for seed. Do not graze or harvest fodder for 25 days after application, or 14 days if Roundup Ready or Roundup Ready 2 Yield Soybeans are used or if application is 22 ozs./A or less.
Sharpen® + MSO† + AMS†	2.85 SC	1.0. – 2.0 oz. + 1 pint + 8.5-17 lbs./100 gall	Indeterminate varieties: greater than 65% brown pods and greater than 70% leaf drop or when seed moisture is less than 30%. Determinate varieties: beans are fully developed, greater than 50% leaf drop, and remaining leaves are yellowing. Apply in a minimum of 10 GPA by ground or 5 GPA by air. 3 day PHI. Include glyphosate for improved desiccation of large weeds.
Touchdown Total	4.17 lbs. gly. acid	12-48 ozs.	Preharvest for control of annual and perennial weeds. Apply after pods have set and lost all green color. Allow a minimum of 7 days between application and harvest. Do not apply more than 1 qt. by air. Not recommended for soybeans grown for seed.
Touchdown HiTech + NIS + AMS	5 lbs. gly. acid	20 ozs. + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	Preharvest for control of annual and perennial weeds. Apply after pods have set and lost all green color. Allow a minimum of 7 days between application and harvest. Do not apply more than 3.6 qts./A by ground or 20 ozs./A by air. Not recommended for soybeans grown for seed.



## NOTES





**Loveland**  
*PRODUCTS*

*Alfalfa & Canola  
Herbicides*





## ALFALFA-DIRECT OR SOLO SEDED



Introduction: When compared to interseeding with a companion crop, direct or solo seeding can be more beneficial to establish a higher quality, higher producing stand especially the first year. The increase of vigor and stand establishment can also contribute to a healthier more productive stand in subsequent years.

Product	Formulation	Rate Per Acre	Timing and Comments
Balan	DF	Coarse 2 lbs. Medium 2 lbs. Fine 2.5 lbs.	Preplant incorporate within 8 hours of application. Do not apply after seeding. May be used on alfalfa, birdsfoot trefoil and clover.
Broclean	2EC	1-1.5 pts.†	†Use rate depends on weed species. Apply to actively growing alfalfa seedlings with a minimum of 2 trifoliates. Best applied during the 2-4 trifoliate stage of alfalfa. Increased injury potential may result when temperatures will exceed 70 to 80 degrees (depending on geographical region, refer to label) during a 3 day period following application. Apply in a minimum of 20 gals. at 40-60 PSI. Can be aerial applied. Do not use any adjuvants. Restriction: Do not cut for feed or graze spring treated alfalfa within 30 days following treatment. Label for Buctril 2E must be in users possession at application.
Eptam	7E	2.25-4.5 pts.	Apply PPI just before planting.
Extreme® + NIS + AMS	2.17 L	2.2 – 4.4 pt. + 0.125% v/v + 8.5 – 17 lb./100 gal.	Apply to Roundup Ready alfalfa only. May be applied to alfalfa grown for hay, forage or seed. Apply to seedling alfalfa with at least 2 trifoliate leaves when the majority of the weeds are 1-3 in. tall or wide and actively growing. Apply in a minimum of 10 GPA. Rainfast in 1 hr. 30 day PHI.
Intensity + COC + AMS or UAN	2 EC	6-16 ozs. + 1 qt. + 2.5-4 lbs. or 1-2 qts.	Use 6-8 ozs. for annual grass control. Perennial grasses may require two applications at 8 ozs. Can be tankmixed with many products, refer to label for specific information. PHI=15 days for feeding or cutting forage for hay.
Poast + COC or MSO + AMS or UAN	1.5 EC	Annual grasses .5-2 pts. Perennial grasses 1.25-2.5 pts. + 1 qt. or 1.5 pts. + 2.5 lbs. or 4-8 pts.	See label for use rates based on type of grass, stage of application and geographical location. Apply in 5-20 gals./A at a minimum of 40 PSI. For best results on quackgrass, fragment rhizomes before seeding and apply Poast early before quackgrass can re-establish. Restrictions: Do not apply within 7 days of grazing, feeding or cutting for (undried) forages, or within 14 days of cutting alfalfa for dry hay.
Prowl H2O	3.8 CS	Seedling alfalfa† 1.1-2.1 pts.	Apply to seeding alfalfa at the 2nd trifoliate stage or later. Does not control emerged weeds. PHI= 28 days (<2.1 qts./A). PHI=50 days (>2.1 qts./A). Do not utilize the 28 day PHI more than once per cropping season.



## ALFALFA-DIRECT OR SOLO SEDED



Product	Formulation	Rate Per Acre	Timing and Comments
Pursuit + COC or MSO or NIS + UAN or AMS	2 AS	3-6 fl. ozs.† + 1.25 gals./100 gal. or 1 gal./100 gal. or 1 qt./100 gal. + 1.25-2.5 gals./100 gal. or 12-15 lbs./100 gal.	†Do not apply more than 4 fl. ozs./A in ND or MN north of highway #210. Use on 1-3" weeds when alfalfa has reached 2nd trifoliolate or later stage. Use on direct seeded only. PHI=30 days before feeding, grazing or harvesting.
Raptor + COC or MSO or NIS + UAN or AMS	1 AS	4-6 ozs. + 1-2 gals./100 gal. or 1-2 gals./100 gal. or 1 qt./100 gal. + 2.5 gals./100 gal.† or 12-15 lbs./100 gal.	†May use up to 20 lbs. AMS/100 gal., refer to label. Apply to seedling alfalfa which has reached the 2nd trifoliolate or later stage or larger and weeds 1-3". Use on direct seeding only. PHI= 0 days.
Select Max/ Intensity One + NIS† + AMS  or Treflan TR-10	1EC  10G	<u>Annual grasses</u> 9-16 ozs.†† <u>Perennial grasses</u> 12-32 ozs. + 1 qt./100 gal. + 2.5-4 lbs.  Coarse      Medium      Fine 5 lbs.      5-7.5 lbs.†††      7 lbs.	†Valent USA Corporation recommends NIS be used with Select Max. ††Rate for seedling alfalfa. Apply POST. Can be tankmixed with many products, refer to label for specific information. PHI=15 days before grazing, feeding or cutting forage for hay.  †††Use lower rate in rate range in areas receiving less than 20" of rainfall and irrigation.

## ALFALFA-ESTABLISHED STANDS

Product	Formulation	Rate Per Acre	Comments
Butoxone	200	4-6 pts.	Apply late fall or early spring. For use on fall emerging broadleaf weeds. For best results, apply when the weeds are in the 2-5 leaf stage of growth and are actively growing. Do not use ester formulations on established alfalfa. PHI for established alfalfa = 60 days before grazing or feeding alfalfa.
Chateau®	51 WDG	4 ozs.	Apply late fall or early spring to dormant alfalfa. Controls most annual broadleaf (including winter annuals) and grass weeds. Do not apply to alfalfa with >6" of regrowth. Refer to label for specific use instructions.
Eptam	7E	2.25-3.5 pts.†	†Apply to the irrigation water applied to established stands prior to weed emergence. Use the lower rate on very coarse textured soils. PHI = Apply prior to 14 days of harvesting or grazing alfalfa.



## ALFALFA-ESTABLISHED STANDS



Product	Formulation	Rate Per Acre	
Extreme® + NIS + AMS	2.17 L	2.2 – 4.4 pt. + 0.125% v/v + 8.5 – 17 lb./100 gal.	Apply to Roundup Ready alfalfa only. May be applied to alfalfa grown for hay, forage or seed. Apply to established alfalfa (<3 inches of re-growth) in the fall, in spring to dormant or semi-dormant alfalfa or between cuttings when the majority of the weeds are 1-3 in. tall or wide and actively growing. Apply in a minimum of 10 GPA. Use 3 pt. or less during the last year of the stand. Rainfast in 1 hr. 30 day PHI.
RU Gramoxone SL + NIS or COC or MSO	2L	1 pt. (between cuttings) + 2 pts./100 gal.† or 1 gal./100 gal. or 1 gal./100 gal.	†Refer to label for details. Apply immediately after cutting the alfalfa. Do not treat more than 5 days after cutting the alfalfa. PHI = 30 days. Check the label for further restrictions on first year alfalfa.
Intensity or Intensity One + COC + AMS or UAN	2EC .97 lb. a.i.	8-16 ozs. or 12-32 ozs. + 2 pts. + 2.5-4 lbs. or 1-2 qts.	Perennial grasses may require two applications at 8 ozs./A. Can be tankmixed with Pursuit, 2,4-DB and most insecticides. Refer to label for specific information. PHI of 15 days for feeding or cutting forage for hay.
RU Kerb	50W	1-4 lbs.	Apply in late fall or early winter (optimum temperature 55-60 degrees), but before freeze-up. Do not apply within 120 days of harvest east of the Mississippi; or within 25 days of harvest when the rate is less than 3 lbs. or within 45 days of harvest when the rate is 3-4 lbs. west of the Mississippi. Remove crop residue before treatment. May be used on alfalfa, clover, birdsfoot trefoil, crown vetch and sainfoin. Apply preemergence only for control of London rocket, wild mustard, wild radish and shepherdspur at the 1.5-4 lb./A rate.
MCP 4 Amine	4EC	1 pt.	Apply in late fall after crop is dormant. May also be used on red clover. Temperatures should be above 40 degrees F. For control of yellow rocket and pennycress. Some MCPA labels do not carry this use.
Metribuzin	DF 75%	.33-1.33 lbs.†	†Regional rate. Refer to label. Apply as a post dormant application, may be applied impregnated on dry fertilizer in the states of CT, IL, IN, IA, KS, KT, MI, MN, NE, NM, NY, OH, OK, PA, SD, TN, TX, WI. Apply only when alfalfa foliage is dry. Application can be made as a spray prior to breaking dormancy in the spring or after growth ceases in the fall. Rates are based on weeds to be controlled.
Poast + COC or MSO + UAN or AMS	1.5 EC	<u>Annual grasses:</u> .5-2 pts.† <u>Perennial grasses:</u> 1.5-2.5 pts.† + 2 pts. or 1.5 pts. + 4-8 pts. or 2.5 lbs.	†Regional rate, refer to label. Apply in 5-20 gallons of water/A with a minimum of 40 PSI using flat fan or hollow cone nozzles. Apply in 5 GPA (min.) of water by air. See label for weed sizes and directions for perennial weed control. Do not apply within 7 days of grazing, feeding, or cutting for (undried) forages, or within 14 days of cutting alfalfa for dry hay.



## ALFALFA-ESTABLISHED STANDS



Product	Formulation	Rate Per Acre	Comments
Prowl H <sub>2</sub> O	3.8 CS	Established stands for Forage/Hay† 1.1-4.2 qts.	Applications can be made in the fall after the last mowing/cutting, during winter dormancy, in the spring, or between cuttings. Applications should be made prior to the alfalfa reaching 6 inches in regrowth. Does not control emerged weeds. PHI= 28 days ( $\leq$ 2.1 qts./A). PHI=50 days (>2.1 qts./A). Do not utilize the 28 day PHI more than once per cropping season.
Pursuit + NIS or COC or MSO + UAN or AMS	2AS	3-6 ozs. + 1 qt./100 gal. or 1.25 gals./100 gal. or 1 gal./100 gal. + 1.25-2.5 gals./100 gal. or 12-15 lbs./100 gal.	Apply in the fall, in spring to dormant or semi-dormant alfalfa (less than 3 inches of regrowth), or between cuttings when weeds are less than 3 inches tall or wide. PHI = 30 days.
Raptor + MSO or COC or NIS + UAN or AMS	1AS	4-6 ozs. + 1-2 gals./100 gal. or 1-2 gals./100 gal. or 1 qt./100 gal. + 2.5 gals./100 gal. or 12-15 lbs./100 gal.	Apply in the fall, winter, spring to dormant or semidormant alfalfa, or between cuttings when majority of the weeds are 1-3" tall. PHI = 0 days
Roundup WEATHER-MAX or Roundup PowerMAX + AMS	4.5 lb ae	Up to 44 ozs.† + 8.5-17 lbs./100 gal.	†Rate is dependent on weed species and stage of growth. Allow a minimum of 5 days between application and harvest. The treated crop and weeds can be harvested and fed to livestock 5 days after application.
Select Max + NIS + AMS	.97 lb. a.i.	12-32 ozs.† + 1 qt./100 gal. + 2.5-4 lbs.	†Recommended rate for annual grasses is 12-16 ozs./A, for perennial grasses it is 12-32 ozs./A. Perennial grasses may require two applications. Can be tankmixed with Pursuit, 2,4-DB and most insecticides. Refer to label for specific information. PHI= 15 days before feeding or cutting forage for hay.
Sinbar®	80% WP	.5-1.5 lbs.†	†Use lower rate on coarse textured soils and a higher rate on fine textured soils. See label for precautions. Must be at least 1 year old established stands. Do not rotate to other crops within 2 years. Do not use on seedling alfalfa nor on alfalfa-grass mixtures or other mixed established stands after new growth starts in the spring; nor on snow covered or frozen ground as crop injury may result.



## ALFALFA-ESTABLISHED STANDS



Product	Formulation	Rate Per Acre			Comments
Treflan TR-10	10G	20 lbs.			Apply uniformly to established alfalfa during dormancy or throughout the season immediately after a cutting. TR-10 can be activated with a single rainfall or irrigation of $\frac{1}{2}$ "A. If this does not occur within 10 days of application, you should activate it with incorporation equipment that will thoroughly mix the soil with minimum damage to alfalfa.
Touchdown Total + AMS or Touchdown HiTech + NIS + AMS	4.17 lb. gly. acid  5 lb. gly. acid	<u>To eliminate or destroy declining alfalfa stand</u> Up to 3 pts. + 8.5-17 lbs./100 gal. or Up to 2.5 pts. + 1-2 qts./100 gal. + 8.5-17 lbs./100 gal.			For preharvest. Allow a minimum of 36 hours between application and harvest. The treated crop and weeds can be harvested and fed to livestock after the minimum waiting period. Use only where crop destruction is desired.
Velpar L	2L	Coarse  $\leq 1\%$ OM 2-3 pts. 1-5%OM 2-3 pts. $\geq 5\%$ OM 4-6 pts.	Medium  $\leq 1\%$ OM 2-3 pts. 1-5%OM 3-6 pts. $\geq 5\%$ OM 4-6 pts.	Fine  $\leq 1\%$ OM 3-6 pts. 1-5%OM 3-6 pts. $\geq 5\%$ OM 4-6 pts.	<b>Dormant Varieties</b> - Apply after it becomes dormant and before new growth begins in spring. <b>Non-dormant or Semi-dormant Varieties</b> - Apply during winter months when alfalfa is in the least active stage of growth. <b>Stubble Treatment</b> - Apply to alfalfa in the spring or before alfalfa exceeds 2" in height. See label for state restrictions. Do not plant treated areas to any other crop within 2 years of treatment except corn, which may be planted 12 months after treatment. Use only on established stands of alfalfa. <b>Do not treat alfalfa with more than 2" of growth.</b> PHI=50 days prior to harvest (cutting for hay or feeding of forage or grazing).
Velpar AlfaMax™	77.7 DG	See label for rates			Co-pack of hexazibone (Velpar) and diuron. See label for details.
Velpar AlfaMax™ Gold	78.5 DG	Coarse  1-5%OM 2.2-3.2 lbs. $\geq 5\%$ OM 4.3 lbs.	Medium  1-5%OM 3.2-4.3 lbs. $\geq 5\%$ OM 4.3 lbs.	Fine  1-5%OM 3.2-4.3 lbs. $\geq 5\%$ OM 4.3 lbs.	Co-pack of hexazibone (Velpar) and diuron. See label for details.
		See label for rates			

## CANOLA WEED CONTROL

Product	Formulation	Rate Per Acre			Comments
Assure II or Targa + COC or NIS or MSO + AMS or UAN	.88 lb. a.i.	5-12 ozs. + 1 gal./100 gal. or 1 qt./100 gal. or 1 gal./100 gal. + 2 lbs. (not required) or 2 qts. (not required)			Post for grass control. PHI=60 days.



## CANOLA WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Beyond + COC or NIS + AMS or UAN	1 AS	4 ozs. + 1-2 gals./100 gal. or 1 qt./100 gal. + 12-15 lbs./100 gal. or 2.5 gals./100 gal.	POST to Clearfield Canola varieties. Can add Stinger. PHI= 60 days
Intensity + COC	2 lb. a.i.	4-5 ozs. + 1 gal./100 gal.	POST grass control. PHI= 70 days.
Liberty 280 SL + AMS	2.34 S	22 ozs. + 3 lbs.	POST to glufosinate resistant canola. Apply from cotyledon stage and before early bolting. Refer to the label for graminicide tankmixes to better control green and yellow foxtail, wild oat, and volunteer cereals. When tankmixing Liberty 280 SL with a grass herbicide, reduce the AMS to 1.5 lbs./A. Refer to label. PHI= 65 days.
Makaze + AMS	4 WSL	16-32 ozs. + 8.5-17 lbs./100 gal.	Preplant or PRE for burndown of existing growth. Apply before crop emerges.
Makaze or Makaze Yield Pro + AMS	4 WSL	Up to 16 ozs.† + 8.5-17 lbs./100 gal.	†POST to Roundup Ready canola (use restricted in certain states including the Midwest). The Midwest is split into two geographical areas. Rates are dependent on geographical area, weed species and weed stage of growth. Do not exceed a maximum rate of 16 ozs./A when making applications by air. Applications may be made from emergence to 6-leaf growth stage of crop. PHI= 60 days. Makaze Yield Pro contains IBA and kinetin, which promotes plant health for increased yields.
Poast + COC + UAN or AMS	1.5 EC	Up to 2.5 pts. + 1 qt. + 4-8 pts.† or 2.5 lbs.†	†Only necessary for specific weeds, refer to the label. POST for grass control. PHI= 60 days.
Reglone® + NIS	2 lb. a.i.	1.5-2 pts. + .5-4 pts./100 gal.	A maximum dose of 1 app./season is allowed. Harvest no later than 10 days after application. Minimum total spray volume/A: Ground – 15 gal.; Air – 5 gal.
Roundup WEATHER-MAX or Roundup PowerMAX + AMS	4.5 lb ae 5.5S	Up to 44 ozs. or Up to 44 ozs. + 8.5-17 lbs./100 gal.	Preplant or PRE for burndown of existing growth. Apply before crop emergence.



## CANOLA WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Roundup WEATHER-MAX or Roundup PowerMAX + AMS	4.5 lb ae 5.5S	(either product) Spring varieties 11-16 ozs. Fall varieties 16-22 ozs.  + 8.5-17 lbs./100 gal.	POST to Roundup Ready canola. Apply before the 6th leaf stage. See label for sequential treatments.
Select Max or Intensity One + NIS	0.97 lb. a.i.	9-12 ozs.†  + 1 qt./100 gal.	†Reduced rates available for canola, check the label. POST grass control. PHI= 70 days.
Sharpen + MSO + AMS	2.85 SC	1-2 oz/A + 1-2 pt/A + 8.5-17 lbs./A	Harvest Aid only. Apply when there has been a seed color change (green seeds having turned either tan or brown in color) half way down the plant. Addition of glyphosate will aid in controlling any perennial plants that may be present.
Sonalan HFP	3 lb. a.i.	Coarse 1.5 pts. Medium 2 pts. Fine 2.5 pts.	PPI for grass and small seeded broadleaves.
Sonalan	10G	Coarse 5.5 lbs. Medium 7.5 lbs. Fine 9.5 lbs.	PPI for grass and small seeded broadleaves.
Stinger	3 lb. ae	¼ to ½ pints/A; Maximum ½ pints/A/year	POST for broadleaf weeds including Canada thistle. Apply to canola in the 2 to 6 If stage of crop growth. PHI=50 days.
Touchdown CT + NIS + AMS	4.17 lb. gly. acid	Up to 3 pts.  + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	Apply before during or after planting, but before crop emerges.
Touchdown HiTech + NIS† + AMS	5 lb. gly. acid	Up to 2.5 pts.  + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	†Can be a substitute for wetting agent. Before, during or after planting, but before canola emergence.
Touchdown HiTech + NIS† + AMS	5 lb. gly. acid	.6-9 pt.  + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	†Can be a substitute for wetting agent. POST to glyphosate tolerant canola up to 6-leaf stage. See label for split application information.
Touchdown Total + AMS	4.17 lb. a.e.	10-17 ozs. + 8.5-17 lbs./100 gal.	POST to glyphosate tolerant canola up to 6-leaf stage. See label for split application information.
Trifluralin	4 L	Coarse 1 pt. Medium 1.5 pts. Fine 2 pts.	PPI for grass and small seeded broadleaves.



## NOTES





**Loveland**  
PRODUCTS

*Edible Bean  
Herbicides*

Lima, Navy, Pinto,  
Red Kidney, Snap





## EDIBLE BEANS-WEED CONTROL (Lima, Navy, Pinto, Red Kidney, Snap)



Product	Formulation	Rate Per Acre	Comments		
Assure II/ Targa + COC or NIS + AMS or UAN	.88E	5-12 ozs. + 1 gal./100 gal. or 1 qt./100 gal. + 2 lbs. (not required) or 2 qts. (not required)	Apply to actively growing grasses refer to label for recommended application timing details. Use a range of 10-20 gals. of solution. Wait a minimum of 24 hr. before applying broadleaf herbicide. In the field treated with broadleaf herbicide, wait until new leaves are formed (7 days). PHI=15 (snap) - 30 (dry beans) days. Do not apply to stressed plants.		
Basagran + COC + AMS or UAN	4 lb. a.i.	1-2 pts.	Apply to beans after the first trifoliolate leaf has fully expanded. Two applications are needed for nutsedge and Canada thistle. Do not apply more than 2 qts./A per year. PHI=30 days for both dry and succulent beans. May tank mix with Raptor herbicide in first application of season.		
Basagran SL + COC + AMS or UAN	5 lb. a.i.	1.2-1.6 pts.	Apply to beans after the first trifoliolate leaf has fully expanded. Note special weeds section of label for Canada thistle, yellow nutsedge, field and hedge bindweed, cocklebur and velvetleaf. Do not apply more than a total of 3.2 pts of Basagran 5L per acre, per season. Do not apply more than a total of 2.0 pounds of bentazon a.i (from all sources) per acre, per season. PHI = 30 days for both dry and succulent beans. May tank mix with Raptor herbicide in first application of season.		
Cinch	7.64E	Coarse $\leq 3\%$ OM 1-1.33 pts. $\geq 3\%$ OM 1.33 pts.	Medium $\leq 3\%$ OM 1.33-1.67 pts. $\geq 3\%$ OM 1.33-1.67 pts.	Fine $\leq 3\%$ OM 1.33-1.67 pts. $\geq 3\%$ OM 1.67-2 pts.	Rates provided are for PPI or preemergence spring applications. See label for fall application options.
Dacthal®	W-75	6-14 lbs.	Apply to soil as a spray at time of planting. Can be PPI.		
Dual II MAGNUM or Dual MAGNUM	7.64E 7.62E	Coarse $\leq 3\%$ OM 1-1.33 pts. $\geq 3\%$ OM 1.33 pts.	Medium $\leq 3\%$ OM 1.33-1.67 pts. $\geq 3\%$ OM 1.33-1.67 pts.	Fine $\leq 3\%$ OM 1.33-1.67 pts. $\geq 3\%$ OM 1.67-2 pts.	Rates provided are for PPI or preemergence spring applications. See label for fall application options.
Eptam	7E	Refer to label. Only for use on specific pod crops and varieties.	Incorporate 2-4" in the soil immediately after application.		
Intensity + COC + UAN or AMS	2 EC	6-16 ozs. + 2 pts. + 1-2 qts. or 2-4 lbs.	For use on dry bean varieties only, not succulent. PHI = 30 days		



## EDIBLE BEANS-WEED CONTROL

**(Lima, Navy, Pinto, Red Kidney, Snap)**



Product	Formulation	Rate Per Acre			Comments
	6 EC	Coarse†	Medium†	Fine†	†For all early preplant application and use on muck and high O.M. soils, use 21 ozs./A rate. PP, PPI, Pre, or early post (1st to 3rd trifoliolate stage). Labeled in dry beans only. Check with your local seed company (supplier) to confirm the bean variety is not susceptible to Outlook applications.
		<3% OM 12-14 ozs. 3%+ OM 14-18 ozs.	<3% OM 14-18 ozs. 3%+ OM 18-21 ozs.	<3% OM 14-18 ozs. 3%+ OM 18-21 ozs.	
Poast + COC or MSO + AMS or UAN	1.5EC	.5-2.5 pts. + 2 pts. or 1.5 pts. + 2.5 lbs. or 4-8 pts.			Apply to actively growing grasses. Use high rates on perennial grasses. Maximum of 4 pts./A per season. Include 1 qt. of COC /A. PHI = 15 days for succulent beans and 30 days for dry beans.
Prowl® H <sub>2</sub> O	3.8CS	Coarse	Medium	Fine	Rate varies with soil texture and by geography. Refer to label for specific instructions. PPI application. Postplant PRE applications in dry beans and chickpea allowed in certain states. Must be incorporated (1-2 inches) and activated with >0.5 inch moisture for maximum weed control. Tank-mix for broad spectrum weed control.
Prowl or Stealth	3.3EC	Coarse†	Medium†	Fine†	†Regional rates provided. See label. Apply up to 60 days prior to planting and incorporate 1-2" before planting.
Pursuit + NIS†	2 AS	Up to 3 ozs.			†Use only a NIS for postemergence applications. PHI=30 or 60 days depending on bean type. Apply to dry beans after 1 fully expanded trifoliolate leaf.
Raptor + NIS + AMS or UAN	1 AS	2 - 4 ozs. + 1 qt./100 gal.			COC can be used with Raptor for enhanced weed control when 6-16 ozs./A Basagran is used as a safener. Do not apply to garbanzo beans, fresh limas, snap beans, succulent peas or lentils. Maximum use rate is 4 ozs./A/season. See state specific restrictions for snap and lima bean use.
Reflex + NIS†† or COC††	2 EC	.75 - 1.5 pt/A max rate is geography dependent††			†Rate dependent on geographical region and weed growth stage. Refer to label for more details. ††Refer to label for adjuvant recommendations. For use in dry, snap beans and edamame (succulent soybean). Apply after one fully expanded trifoliolate is visible. Label provides many tankmix options.
Rezult® + COC + UAN or AMS	5 SL (Duplex jug)	3.2 pts. + 1 pt. + 1-2 qts. or 1-2 lbs.			Do not apply the components of the duplex jug in combination other than a 1:1 ratio. Apply to dry beans after 1 fully expanded trifoliolate leaf stage. PHI = 30 days.
Roundup WEATHER-MAX	4.5 lb ae	Up to 44 ozs.†			†Apply in 10-40 gals. of water/A. Refer to label for labeled bean types. Apply to 6-8" quackgrass in the fall or spring prior to planting. Allow at least 5 days before plowing.



## EDIBLE BEANS-WEED CONTROL (Lima, Navy, Pinto, Red Kidney, Snap)



Product	Formulation	Rate Per Acre			Comments
Select Max or Intensity One + NIS + AMS	.97 lb. a.i.	<u>Annual grasses†</u> 9-16 ozs. <u>Perennial grasses</u> 12-32 ozs. + 1 qt./100 gal. + 2.5-4 lbs.			†Reduced rate option labeled. Refer to label. PHI= 30 days. For use in dry beans.
Select Max + Basagran + COC + AMS or Raptor + NIS + AMS	.97 lb. a.i. 4 lb. a.i. 1 AS	<u>Annual grasses</u> 9-12 ozs. + 1-2 pts. + 1 gal./100 gal. + 2.5 lbs. or 4 ozs. + 1 qt./100 gal. + 2.5 lbs.			PHI= 30 days. For use in dry beans.
Sequence + AMS	5.25EW	2.5-3.5 pts. + 8.5-17 lbs./100 gal.			Controls most grass and broadleaf weeds. For use on dry beans, snap beans and garbanzo beans. Refer to label for complete crop lists. Make only one application/year. Do not cut treated dry beans for hay for 120 days after application.
Sharpen + MSO + AMS	2.85SC	1-2 ozs. + 1 pt./A. + 8.5-17 lbs./100 gal.			Apply Sharpen as a broadcast spray over the top of dry edible beans that have reached physiological maturity. Minimum spray carrier volume of 10 gpa by ground and 5 gpa air. Allow up to 7 days for optimum dessication. PHI = 2 days. Do not graze or feed and do not use on dry edible beans grown for seed. For complete listing of restrictions and limitations as well as recommended tank mixtures, refer to the label.
Sonalan HFP or Sonalan 10G	3EC 10G	Coarse†   Medium†   Fine† 1.5-2 pts. or 5.5-7.5 lbs. 2-2.5 pts. or 7.5-9.5 lbs. 2.5-3 pts. or 9.5-11.5 lbs.			†Lighter rates are required for control of certain weeds. Refer to label. Apply before planting and incorporate into top 2-3" of soil.
Treflan	4EC	Coarse†   Medium†   Fine† 1 pt.   1-1.5 pts.   1.5-2 pts.			†For coarse and medium soils with 2 to 5% OM, use 2 pts./A. For soils with 5-10% OM, use 2 pts./A. Use lower rate in rate range in areas receiving less than 20 inches total annual rainfall and irrigation. Refer to label for rates specific to guar, mungbean, lima, snap and castor beans.



## EDIBLE BEANS-WEED CONTROL (Lima, Navy, Pinto, Red Kidney, Snap)



Product	Formulation	Rate Per Acre	Comments
Valor SX + MSO + AMS or UAN	51WDG	Up to 3 ozs. + 1 qt. + 2-2.5 lbs. or 1-2 qts.	For dry bean desiccation only. Tank mixing Valor with glyphosate will increase control of emerged weeds and aid in harvest.
Valor SX + glyphosate + MSO + AMS	51WDG	2 ozs. + Refer to 2(ee) label + 1 qt. + 17 lbs./100 gal.	For preharvest, late season weed control, not dry bean desiccation. For use in certain states only.
RU Valor SX + Gramoxone SL + MSO	51WDG	2 ozs. + 2 pts. + 1 qt.	For dry bean desiccation and weed control prior to harvest. For use in certain states only.



**Loveland**  
PRODUCTS

*Non-Crop  
Pasture  
Pea  
Potato  
Herbicides*





## NON-CROP - WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Alion	1.67 SC	5-6.5 ozs.	Provides long term residual weed control. Does not control emerged weeds. Should be tank mixed with Rely 280, glyphosate or gramoxone to control emerged weeds. May be tank mixed with other labeled residual herbicides for resistance management.
Amine 4 2,4-D or 2,4-D LV 4 or 2,4-D LV6	3.74 lb. acid 3.8 lb. acid 5.6 lb. acid	1-4 qts. or 1-3 qts. or 1.33 pts.-1.33 gals.	Apply when plants are actively growing. Labeled for use on drainage ditch banks, fence rows, roadsides, rights-of-ways and other non-crop areas. Use high rate for woody plants and spray to runoff. Controls annual and perennial broadleaves and brush.
Capstone + NIS or MSO	1.1 lb. ae/gal	4-9 pts. or 1 qt./100 gals. or 1-4 qts./100 gals.	For control of broadleaf weeds and brush. Can be applied as an aerial or ground broadcast treatment, as a spot spray, or as a high or low volume foliar application. See label for proper timing and rates for control of specific species.
Crossbow® L	3 lb. a.i.	1-4 qts.	Apply to give thorough coverage of woody brush plants including multiflora rose. For broadleaf weeds, thoroughly wet all foliage. Use high rate for perennial weeds. Can also be used as a thin-line, dormant stem, cut stump and conventional basal bark application. See label. Controls woody plants and annual and perennial broadleaves.
Curtail*	2.38E	2-4 qts.	For control of Canada thistle, spotted knapweed and diffuse knapweed.
Diuron 400 or Karmex®	4 lbs. a.i. DF 80%	1-3 gals. or 5-15 lbs.	Refer to label for use in irrigation ditches. Higher rates needed for perennial grasses and broadleaf weeds. Deep rooted perennials will require retreatment. Long residual.
Duramax + AMS	5.4 WSL	<u>Annual weeds</u> 1.5-2.25 pts.† <u>Perennial weeds</u> 3-7.5 pts. + 8.5-17 lbs./100 gal.	†Apply 1.5 pts./A when weeds are less than 6 inches tall and 2.25 pts./A when weeds are greater than 6 inches tall. Durango DMA may be tankmixed with many herbicides. Refer to label for tankmix partner recommendations.
Durango® DMA® + AMS	5.4 WSL	<u>Annual weeds</u> 1.5-2.25 pts.† <u>Perennial weeds</u> 3-7.5 pts. + 8.5-17 lbs./100 gal.	†Apply 1.5 pts./A when weeds are less than 6 inches tall and 2.25 pts./A when weeds are greater than 6 inches tall. Durango DMA may be tankmixed with many herbicides. Refer to label for tankmix partner recommendations.
Garlon 4 Ultra	4 lb. ae/gal	.5-4 qts.	For control of broadleaf weeds and woody plants. Oil soluble, emulsifiable liquid formulation. Label recommends the addition of specific tank mix partners to enhance weed control spectrum. Refer to the label for basal bark, cut stump and dormant stem treatments.
Glyphosate + AMS	4 lb. a.i.	1 to 5 qts. or spot treat with 1-2% solution. + 8.5-17 lbs.	Non-selective, non-residual, systemic herbicide. Effective on annual and perennial grass and broadleaf plants. May be mixed with 2,4-D, dicamba, or many of the products listed on this sheet for greater spectrum of weed control.



## NON-CROP - WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Hyvar®X or Hyvar X-L	80% WP 2 lb. WSL	7-15 lbs. or .75-6 gals.	Apply PRE or POST. Requires moisture for activation. Controls annual and perennial weeds and woody plants. Non-corrosive, nonvolatile, nonflammable to metals except aluminum (Hyvar X-L). Refer to label for tankmix options. Bromacil can move horizontally in soil after application. Long residual.
Krovar® I	80% DF	6-16 lbs.	Bromacil/diuron premix. Control of annual grass and broadleaf weeds. Apply PRE. Requires moisture for activation. Refer to label for registered tankmixes. Bromacil can move horizontally in soil after application. Long residual.
Landmark XP + NIS (0.25% v/v or COC/MSO (1-2%v/v)	75DG	4.5 - 8 oz  0.75 – 2.25 oz	Noncrop: Landmark is not labeled for recreation areas, sod farms, or for direct application to paved surfaces. Apply only with ground equipment except for rights-of-way which can be treated by helicopter. Rangeland Restoration (West of the Mississippi): Refer to the label for effective restoration programs and grass replant intervals
Lineage™ Clearstand™ + NIS or MSO	72.7WDG	13-25 ozs.  + 1 qt./100 gal. or ≤30 GPA 1.5-2 pts. ≥30 GPA 1 gal./100 gal.	Refer to label for additional uses.
Matrix + NIS (0.25% v/v) or COC/MSO (1-2%v/v) + UAN 2.0 Qt/ac or 2.0 lbs/ac AMS	25SG	4 ozs.	Do not apply more than 4 oz per acre per year for the control of grass and broadleaf weeds in non crop areas or rangeland restoration. Refer to the label for effective restoration programs and grass replant intervals.
Method + NIS (0.25% v/v) + MSO (1%v/v)	50SG	4-9 ozs.	Weed and brush control in non crop areas. Refer to label for desirable tree and shrub sensitivity to this product.
Milestone®	2 lb. acid	3-7 ozs.	Post and residual control of Canada thistle, biennial thistles, and many other broadleaf weeds. Milestone may be tankmixed with other herbicides to broaden the range of weed control. Refer to product label.



## NON-CROP - WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Opensight™ + MSO or COC or NIS + AMS or UAN	61.95% WG	1.5-3.0 ozs. + 1 gal./100 gals.† or 1 gal./100 gal.† or 1 qt./100 gal.† + 2 lbs.† or 2 qts.†	†Refer to label for adjuvant rates for special conditions (i.e. arid conditions). Used to control broadleaf weeds, including noxious and invasive weeds, and certain woody plants in permanent pastures and rangeland, CRP, natural areas, wildlife habitats, etc. There are no restrictions on grazing or grass hay harvest intervals following application of Opensight at labeled rates. Refer to label for more details.
Oust® XP + NIS	75% DG	Arid areas† .75-3 ozs. <u>Areas of 20" or more rainfall</u> 3-8 ozs. + 1 qt./100 gal.	†Areas of 20" or less rainfall. Use high rate in high moisture areas except in residential properties. Do not spray near water. Long residual.
Perspective® + NIS or COC	55.3 WG	1.75 - 8 ozs. + .25 - 1% v/v or 1% v/v	For use on non-cropland or Industrial turfgrass (Unimproved). Industrial turfgrass rates are 1.75 to 5 oz/a. See label for specific grass and rates. Apply at 10 gpa minimum. For non-cropland, apply PRE or EPOST with Ground equipment only (only helicopter allowed if ROW application); may be spot-sprayed. Do Not graze or feed forage, hay or straw from treated area to livestock. Refer to label.
Poast®	1.5EC	1% Solution Up to 2.5 pts.	Apply to actively growing grasses. See label for height recommendations. For hand held equipment use Poast at 1-1.5% solution and adjuvant at 1% solution. Spray until wet but not to point of runoff.
Pramitol®	25E	1-1.75 pts./1000 sq. ft. in 2 gals. of water or 4-10 gals./A in 50-100 gals. of water	Apply prior to or up to 3 months after weed emergence; gives season-long control. Use lower rates for light soils and low rainfall areas. Use higher rates on heavier soils where weed growth is heavy and rainfall is high. For faster top-kill, substitute 100-200 gals. diesel oil, fuel oil or weed oil/A for the water. Controls annual and perennial weeds. Do not use in areas where a crop or other plantings are to be introduced later. Use higher rate for deep-rooted perennials.
Pramitol Pellets	5PS	.35-.92/100 sq. ft.†	†Higher rates should be used in areas having a long growing season or high rainfall. The higher rates will also provide longer residual control and better control of deep rooted perennials. Do not use in areas where a crop or other plantings are to be introduced later.
Reglone® + NIS	2 lb. a.i.	1-2 pts. + .5-4 pts./100 gal.	Controls many grass and broadleaf weeds in numerous non-crop sites. Apply to actively growing weeds by ground in 15 gpa. Re-treatment may be necessary for established weeds. May be spot sprayed. Refer to label.
Reward® + Activator 90	2 lb.	1-2 pts. + 1-2 qts./100 gal.	Apply for full coverage and thorough weed contact to young weeds. Controls annual grass and broadleaves. No residual activity.
Roundup PROMAX®	4.5 lb ae	<u>Annual weeds</u> 22 ozs. - 2.7 qts. <u>Perennial weeds</u> 1-3.3 qts. <u>Woody brush and trees</u> 1.3-3.3 qts.	Apply in 3-40 gals. of water/A as a broadcast spray unless otherwise specified on the label. Refer to label for specific rates according to weed spp. Provides broad-spectrum control of many weed spp.



## NON-CROP-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Roundup WEATHER-MAX + AMS	5.5S	Annual weeds 11-32 ozs. Perennial weeds .4-3.3 qts. + 8.5-17 lbs.	Apply as broadcast spray with 20-30 gals. of water/A. See the Roundup label for specific rates according to weed species. Controls annual and perennial grasses and broadleaves.
Spike® 20P		Individual plant treatments† .375-1.125 ozs./100 sq. ft.  Broadcast rate 2.5-20 lbs.	†Rates are based on weed species to be controlled. See label for rates. May be broadcast or used as spot treatment. See label for rates. Grazing is allowed in areas treated with 20 lbs./A or less. CAUTION MUST BE TAKEN NEAR DESIRABLE TREES OR SHRUBS as small amounts of Spike may cause serious injury. Controls numerous brush and woody plants including multiflora rose. Do not apply if soil is frozen or saturated with moisture.
Stinger*	3 lb. acid	.25-1.33 pts.	Apply .25 pt./A to annual weeds 1-3" tall. Apply .5 pt./A to annual weeds 3-6" tall. Where Canada thistle or knapweeds are the primary weed, best results are obtained by applying .67-1.33 pts./A. Stinger may be tankmixed with 2,4-D amine or low volatile ester.
Streamline™ + NIS or COC	53.1 DF	1.75 to 11.5 ozs. +.25 - 1% v/v or 1% v/v	For use on non-cropland or Industrial turfgrass (Unimproved). Industrial turfgrass rates are 1.75 to 5 oz/a. See label for specific grass and rates. Apply at 10 gpa minimum. For non-cropland, apply PRE or EPOST at 1.75 to 11.5 oz/a with Ground equipment, fixed wing, or helicopter. May be spot-sprayed. For Brush, apply 7.5-11.5 oz/a. Do Not graze or feed forage, hay or straw from treated area to livestock. Refer to label for specific rates and restrictions.
Saber	3.8 lb. acid	1.5-8 pts.†	†Use low rate in the rate range for small broadleaf weeds and a high rate for woody plants and dense stands of brush.
Sahara + NIS or MSO or COC + UAN	70% DG	Average annual rainfall      Rate/A <15"      7-10 lbs. 15-35"      8-13 lbs. 35"+      13-19 lbs. + 1 qt./100 gal. or 1.5-2 pts. or 1.5-2 pts. + 2-3 pts.	Imazapyr and diuron premix. Provides residual PRE and POST control of annual weeds and POST control of perennial weeds. Can be tankmixed with Roundup, Finale®, Krovar, Hyvar X, Oust, and Garlon®. Refer to tankmix partner label to verify application timing and other use details. Do not apply with 2,4-D due to reduced weed control. Long residual.
Salvo	5 lb. acid	12.8-51.2 ozs.†	†Use the high rate for woody plants. For fall treatment of mature weeds or perennial weed growth, use up to 25.6 ozs./A
Select + COC	2 EC	6-16 ozs. + 1 gal./100 gal.	See label for rates for the control or suppression of tall fescue in native prairie grass restoration projects. NOTE: Apply to 4 to 6 inch tall fescue in early spring prior to emergence of warm-season grasses. Select will not injure broadleaf (dicot) plants. See label for application details. DO NOT GRAZE OR HAY FORAGE.



## NON-CROP-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Sharpen + MSO + AMS	2.85SC	1-6 ozs. + 1 gal./100 gal. + 8.5-17 lbs./100 gal.	To be used in noncropland area's as defined in the label. For specific rates, directions and limitations when used alone or in a tankmix, refer to the label. Do not apply more than 6 ozs./A per year.
RU Surmount® + NIS	2.15 lb. a.i.	<u>Woody plants†</u> 3-6 pts. <u>Broadleaf weeds</u> 1.5-2 pts. + 1-2 qts./100 gal.	†Rate dependent on woody plant species to be controlled. For control of annual and perennial broadleaf weeds and brush as a broadcast or individual (spot) treatment.
RU Tordon® RTU (Ready to use)	14.2 acid	Apply undiluted†	†Maximum use rates: Total use of Tordon RT must not exceed 4 gals. per annual growing season on rights-of-way and other non-crop areas. No more than 4 gal./A may be applied within a period of 2 annual growing seasons on forest sites. May be used as a tree injection, frill or gridle treatment, or stump treatment. See label. Prevents stump regrowth.
RU Tordon 22K	2 lb. acid	<u>Broadleaf weeds</u> .5 pt.-2 qts. <u>Woody plants</u> 4 qts./100 gal.†	†See label for instruction on controlling eastern red cedar.
Touchdown CT or Touchdown Total + AMS†	4.17 lb. a.e.	<u>Annual weeds</u> .7-2.9 qts. <u>Perennial weeds</u> 1.5-3.6 qts. or Same rates as above. + 8.5-17 lbs./100 gal.	†Use AMS when mixing Touchdown CT or Touchdown Total. Refer to label for specific non-crop use sites, rates for control of various weeds, and for recommended tank mix partners for residual weed control.
Touchdown HiTech + NIS + AMS	5 lb. a.e.	<u>Annual weeds</u> .6-2.4 qts. <u>Perennial weeds</u> 1.25-3 qts. + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	Refer to label for specific non-crop use sites, rates for control of various weeds, and for recommended tank mix partners for residual weed control.
Viewpoint™ + MSO or NIS	61.7 DF	13-20 ozs. + .05 - 1% v/v or .25-1% v/v	For use on non-cropland only. Apply PRE or EPOST by ground or helicopter at 10-20 gpa. Spot spray allowed. Use higher rates for certain brush species. Do Not graze or feed forage, hay or straw from treated area to livestock. Refer to label for specific rates and restrictions.
Weed Blast®	8% a.i.	<u>Short term control of annual weeds</u> 40-60 lbs. <u>Extended control of annual weeds and partial control of perennials</u> 100-200 lbs.	Bromacil and diuron premix. Apply before weeds emerge. Bromacil can move horizontally in soil after application. Long residual.



Product	Formulation	Rate Per Acre	Comments
Aim EC + NIS or COC or MSO + AMS or UAN	2 lb. a.i.	2 ozs. + 2 pts./100 gals. or 1 gal./100 gals. or -- + 2-4 lbs. or 2-4 gals./100 gals.	When Aim EC is used alone, grazing or hay operations may proceed with no restrictions. Treat weeds when small.
Amber® + NIS	75% WDG	.28-.56 oz. + 1-2 qts./100 gal.	For use in CO†, ID, KS, MN, MT, ND, NE, NM, NV, OK, OR†, SD, TX, UT, WA† AND WY only. †State restrictions on use in certain geographical regions. Do not apply until at least 60 days after emergence of newly seeded grasses listed on label or 30 days after sprigging of Bermudagrass.
Amine 4 2,4-D or 2,4-D LV 4 or 2,4-D LV 6	3.74 lb. acid 3.8 lb. acid 5.6 lb. acid	1-2 qts. or 1.5-3 qts.† or 1.5-4 pts.†	†For control of certain weeds, the use of COC at 1-2 qts./A or NIS at 1 qt./100 gals. is recommended. Apply to rapidly growing plants. For new seedlings use .5-1.5 pts./A. Apply after new grass is well established. Do not graze dairy cattle for 7 days following application of any 2,4-D. Use lower rate in rate range for annuals and higher rate in range for perennials. Controls broadleaf weeds and brush.
Banvel	4 lb. a.i.	<u>Annual Broadleaves</u> .5-1.5 pts.† <u>Perennial Broadleaves</u> .5-8 qts.†	†Refer to label for rate details. Do not graze dairy animals for 7 days after applying 1 pt./A, 21 days after applying 1 qt./A, and 40 days after applying at 2 qts./A rates. Do not graze meat animals in treated field within 30 days of slaughter. May be used in a liquid fertilizer tankmixed with 2,4-D. Refer to label for differences in use rates for lawn, pasture and non-crop usage. See label for control of multiflora rose (dormant application).
Chaparral™ + MSO or COC or NIS + AMS or UAN	61.95% WG	1.5-3.3 ozs. + 1 gal./100 gals.† or 1 gal./100 gal.† or 1 qt./100 gal.† + 2 lbs.† or 2 qts.†	†Refer to label for adjuvant rates for special conditions (i.e. arid conditions). Used to control broadleaf weeds, including noxious and invasive weeds, and certain woody plants in permanent pastures and rangeland, CRP, natural areas, wildlife habitats, etc. There are no restrictions on grazing or grass hay harvest intervals following application of Chaparral at labeled rates. Refer to label for more details.
Cimarron® Max Part A Part B + NIS or COC or MSO + UAN or AMS	60% a.i. 3.87 lb. a.i.	2 part product 5 ozs. of Cimarron A† +2.5 gals. of Cimarron B† treats 5-20 acres  + 1 qt./100 gal.†† or 1-2 gal./100 gal.†† or 2 qts./100 gal.†† (If noted to use MSO)  + 2-4 qts.†† or 2-4 lbs.††	†Refer to label for grass species specific use precautions. ††Refer to label for adjuvant use on fescue and timothy grass. Remove animals from treated areas 30 days prior to slaughter. No waiting period between grazing and slaughter for non-lactating animals. Do not graze lactating dairy animals within 7 days of treatment.



## PASTURES-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Cimarron Plus + NIS or COC or MSO + UAN or AMS	63DF	.125-1.25 ozs.† + 1 qt./100 gal. or 1-2 gal./100 gal. or 1-2 gal./100 gal. + Up to 2 gal./100 gal. or Up to 17 lbs.	†Use the .125 oz./A rate for Canada thistle suppression. May be used on many native grasses. Certain grass species are sensitive to Cimarron Plus; refer to label. No grazing restrictions or hay harvest restrictions.
Cimarron X-tra + NIS or COC or MSO + UAN or AMS	67.5DF	.5-2 ozs.† + 1 qt./100 gal.†† or 1-2 gal./100 gal. or 1-2 gal./100 gal. + Up to 2 gal./100 gal. or Up to 17 lbs.	† Use the .5 oz./A rate for Canada thistle suppression. Do not use more than 1 oz./A on buffalograss. ††For apps. to fescue, use a NIS at .5-1 pt./100 gal. of spray solution. Do not use a spray adjuvant other than a NIS. May be used on many native grasses. Certain grass species are sensitive to Cimarron X-tra; refer to label. No grazing restrictions or hay harvest restrictions.
Clarity® + NIS or COC + UAN or AMS	4SL	8-32 oz. + 0.125%-0.25% v.v or 1 qt. + 2-4 qt. or 2.5 lb.	For control of annual, biennial and perennial broadleaf weeds. Rate varies based on weed species and size. Refer to label for specific recommendations. Do not graze lactating dairy animals from 7 to 40 days based on the rate applied. Hay PHI for lactating animal use also varies based on rate used. See label.
Crossbow	3 lb. acid	2-4 qts. or 1-1.5% Solution	Withdraw livestock from treated forage at least 3 days before slaughter. Do not graze lactating dairy animals on treated area until the next growing season following treatment. Do not harvest grass for hay for 14 days after application. Do not use until newly seeded grasses have established a good root system and is tillering. Controls annual, biennial and perennial broadleaves and brush, including multiflora rose.
Curtail	2.38 lb. a.i.	2-4 qts.	Use 2 qts./A rate for light to moderate infestations of Canada thistle and knapweeds (spotted & diffuse) under good growing conditions, and 3 qts./A for dense infestations or under poor growing conditions such as drought. Do not graze dairy cattle for 14 days after application. Remove meat animals from freshly treated areas 7 days before slaughter. Withdraw is not needed if 2 weeks have elapsed since application.



## PASTURES-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Distinct + NIS or MSO	70 WG	2-8 ozs. + 1 qt./100 gal. or 1.5-2 pts.	Used for the control of many annual and biennial weeds and suppression of perennial weeds in pasture, hay and rangeland. 0 day haying and grazing interval.
ForeFront® HL + NIS	3.74 lb ae/gal.	1.2 – 2.1 pts/acre + 1 qt/100 gal	For broad-spectrum weed control including certain wood species. Excellent tank mixing partner with Remedy Ultra to increase the spectrum of woody species control. No grazing restrictions. See label for hay, residue, and manure management.
<span style="color:red; border:1px solid red; border-radius:50%; padding:2px 5px;">RU</span> Gramoxone SL + NIS or COC or MSO	2L	<u>Pasture reseeding</u> 1-2 pts. + 1 pt. or 1 gal./100 gal. or 1 gal./100 gal.	Make application during the growing season, preferably at time of seeding grasses or forage legumes such as alfalfa, clover and birdsfoot trefoil. Do not pasture in treated areas until newly planted seedlings are 6" high. Suppresses existing sod and emerged broadleaves and grasses.
<span style="color:red; border:1px solid red; border-radius:50%; padding:2px 5px;">RU</span> Grazon® P+D	2.54 WSL	1-8 pts.	0 Days grazing restriction, except 7 days for lactating dairy. Remove livestock 3 days before slaughter. Use for broad spectrum weed control in range pastures. Provides residual control of seedlings for season long control.
OutRider® + NIS	75% WDG	.75-1.33 ozs. + 1 qt./100 gal.	Can be used in states West of the Mississippi River. For general weed control in pastures, hayfields and rangelands as defined in the label. Also for weed control in perennial native grasses as defined on the label.
Overdrive® + NIS or MSO	70 WG	4-8 ozs. + 1 qt./100 gal. or 1.5-2 pts.	Overdrive is used for the control of many annual and biennial weeds or suppression of many perennial weeds in non-cropland, pasture, hay, and rangeland sites. A maximum of 8 ozs./A can be used per season.
Paramount® + COC or MSO + AMS or UAN	75 WG	3-16 oz. + 2.0 pt. or 1.5 pt. + 2.5 lb. or 2-4 qt.	For control of certain broadleaf and grass weeds in specific grass pasture species. See label for specific recommendations and approved grass pasture species. Rate varies based on target weed species. Hay may be cut 7 days after application.
Pastora® + NIS or COC + UAN or AMS	71.2 DF	1-1.5 ozs. + 1 qt./100 gal. or 1-2 gal./100 gal. + 2-4 qts. or 2-4 lbs.	For use on Bermudagrass only. Controls key grass weeds such as Johnsongrass (seedling, rhizome up to 18") and sandbur as well as broadleaf weeds. No grazing or hay harvest restrictions.



## PASTURES-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
PasturAll™ HL + NIS†	3.55 lb. ae/gal	1.0 – 4.5 pts/acre + 1 qt/100 gal	†Recommended to enhance herbicide activity under adverse environmental conditions (i.e. arid conditions) or when weeds are heavily pubescent or mature. Refer to label. Used to control broadleaf weeds, including noxious and invasive weeds, and certain woody plants in permanent pastures and rangeland, CRP, natural areas, wildlife habitats, etc. There are no restrictions on grazing or grass hay harvest following application of PasturAll at labeled rates. Do not cut forage for hay within 7 days after application.
Pasture-Gard™ HL + NIS	4 lb. ae/gal.	0.75 - 4 pts/acre + 1 qt/100 gal	See label restriction for grazing dairy animals. No grazing restrictions on other classes of animals. PastureGard HL at 0.75 – 1.5 pts/ acre provides excellent control of sericea lespedeza, with higher rates in this range used as plants become mature.
Rave + NIS or COC	50WDG	2-5 ozs.† + 1-2 pts./100 gal. or 1-2 pts./100 gal.	†Use high rate for heavy weed infestation. Use Rave in the following states only: CO (except the San Luis Valley), ID, KS, MN, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA and WY. Treated areas should not be grazed by lactating dairy animals before 7 days after treatment. Animals cannot be removed from treated areas for slaughter less than 30 days after application.
Remedy Ultra + NIS	4 lb ae/gal	1 - 4 pts/acre + 1 qt/100 gal	Post control of many woody plants, and annual, biennial and perennial broadleaf weeds. Do not graze lactating dairy animals until the next growing season. No grazing restrictions for other livestock. Increases the efficacy and spectrum of broadleaf weeds and woody species control when tank mixed with Chaparral, and ForeFront HL.
Rifle-D + NIS or COC + UAN	2.87 lb. a.i.	<u>Annuals</u> 0.5-4 pts. <u>Biennials and Perennials</u> 1-6 pts. (Rates above 4 pts./A for spot treatment only) + 1-2 qts./100 gal. or 1 qt. + 2-4 qts.	†Rates dependent on weed species and stage of growth. There is no waiting period between treatment and grazing of non-lactating animals. Do not permit meat animals being finished for slaughter to graze treated fields within 30 days of slaughter.
Roundup WEATHER-MAX	5.5S	<u>Annuals</u> 11-32 ozs. <u>Perennials</u> 1-3.3 qts.	Do not graze treated area for 14 days following application. No greater than one-tenth of any acre may be treated at one time using a 2 qt./A rate. Multiflora rose may also be controlled with Roundup. See label for directions.
Saber	3.8 lb. acid	<u>New Stands</u> .5-1 pt. <u>Established Stands-Annuals</u> .5-1.5 pts. <u>Established Stands-Biennials &amp; Perennials</u> Up to 4 pts.	General weed control. 7 days before grazing dairy. Remove 3 days before slaughter.



Product	Formulation	Rate Per Acre	Comments
Salvo	5 lb. acid	<u>New Stands</u> 6.4-12.8 ozs. <u>Established Stands-Annuals</u> 12.8-19.2 ozs. <u>Established Stands-Biennials &amp; Perennials</u> Up to 25.6 ozs.	General weed control. 7 days before grazing dairy. Remove 3 days before slaughter.
Spike	20P	<b>20" or Less Annual Rainfall</b> 10 lbs. (3/8 oz./100 sq. ft.) <b>20" or More Annual Rainfall</b> 20 lbs. (3/4 oz./100 sq. ft.)	May be broadcast or used as individual plant treatment. Rates are based on species to be controlled. See label for exact rate. Grazing is allowed in areas treated with 20 lb./A or less in areas where rainfall amount exceeds 20 inches on average. In area that receives 20 inches or less annual rainfall, do not exceed 10 lbs./A. <b>CAUTION MUST BE TAKEN NEAR DESIREABLE TREES OR SHRUBS</b> as small amounts of Spike may cause serious injury. Controls numerous brush and wood plants including multiflora rose.
<b>RU</b> Surmount + NIS	2.15 lb. a.i.	3-6 pts. + 1-2 qts./100 gal.	Picloram + fluroxypyr premix. Brush control including locusts and multiflora rose. Excellent weed and thistle control. Do not allow lactating dairy animals to graze treated areas and do not harvest forage for consumption of dairy animals within 14 days after application. There are no grazing restrictions for nonlactating dairy animals or other livestock.
<b>RU</b> Tordon 22K	2 lb. a.i.	.5-4 pts.†	†Rate dependent on weed species and stage of growth. For biennial thistles apply when in the rosette stage before bolting in the spring or before freeze-up in the fall. Additions of 2,4-D up to 1 qt./A are beneficial with spring treatments. See label for details. See label for rates required for specific weeds and for recommendations for tankmixes with 2,4-D. Do not graze lactating dairy animals on treated areas within 2 weeks after application. Meat animals grazing up to two weeks after treatment should be removed from treated areas three days prior to slaughter.

## PEAS-WEED CONTROL

Assure II or Targa + COC or NIS or MSO	.88 E	5-12 ozs. + 1-2 gals./100 gal. or 1 qt./100 gal. or 1 gal./100 gal.	Regional use (refer to label). Rate dependent on weed species and stage of growth. For use in dry and succulent peas. Apply to actively growing grasses in the 3-leaf to pre-boot stage. Use a range of 10-20 gals./A. Wait a minimum of 24 hrs. before applying post broadleaf herbicide. In fields treated with broadleaf herbicide, wait until new leaves form on grass (generally 7 days). PHI=30 days. Do not apply to stressed plants.
Basagran + UAN or AMS	4 E	1-2 pts. + 2-4 pts. or 1-2 lbs.	Rate dependent on weed species and stage of growth. For use in dry and succulent peas. Tolerant pea types are garden, English and Southern peas. PHI= 10 days for succulent peas and 30 days for dry peas. Apply after the peas have 3 pairs of leaves or 4 nodes and the weeds are small. Do not apply more than 2 qts./A/year. Will give some control of yellow nutsedge.



## PEAS-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments															
Basagran 5L + NIS + AMS	2.85 SC	1.2 – 1.6 pt/A + 1-2 qt/ 100 gal + 8.5-17 lbs./A	Rate dependent on weeds present. May use a lower rate (4.8-12.8 fl oz) if tank mixed with Pursuit or Raptor. Do not apply when peas are in bloom. Tolerant pea types, garden, English, field, and southern peas. Chickpeas are NOT tolerant. Apply with minimum 10 GPA. PHI 30 days															
Cinch or Dual II MAGNUM or Dual MAGNUM	7.64E 7.64E 7.62E	<b>Spring Application – PPI or PRE</b> <table border="1"> <thead> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> </thead> <tbody> <tr> <td>&lt;3%OM 1-1.33 pts.</td> <td>&lt;3%OM 1.33-1.67 pts.</td> <td>&lt;3%OM 1.33-1.67 pts.</td> </tr> <tr> <td>3%+OM 1.33 pts.</td> <td>3%+OM 1.33-1.67 pts.</td> <td>3%+OM 1.67-2 pts.</td> </tr> </tbody> </table> <b>Fall Application – After Harvest†</b> Minimum or no-till with >2.5% OM <table border="1"> <thead> <tr> <th>Coarse</th> <th>Medium</th> <th>Fine</th> </tr> </thead> <tbody> <tr> <td>Do not use</td> <td>1.67 pts.††</td> <td>2 pts.††</td> </tr> </tbody> </table>	Coarse	Medium	Fine	<3%OM 1-1.33 pts.	<3%OM 1.33-1.67 pts.	<3%OM 1.33-1.67 pts.	3%+OM 1.33 pts.	3%+OM 1.33-1.67 pts.	3%+OM 1.67-2 pts.	Coarse	Medium	Fine	Do not use	1.67 pts.††	2 pts.††	†Apply to crop stubble after harvest when the sustained soil temperature at a 4" depth is less than 55° F and falling. ††Refer to label for application dates for specific areas. Use lower rate on sandy soils. For use in many types. Total rate of fall and spring applications must not exceed the maximum total rate for pod crops, or illegal residues may result.
Coarse	Medium	Fine																
<3%OM 1-1.33 pts.	<3%OM 1.33-1.67 pts.	<3%OM 1.33-1.67 pts.																
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Coarse	Medium	Fine																
Do not use	1.67 pts.††	2 pts.††																
Duramax or Durango DMA + AMS	5S 5S	Annual weeds 12-36 ozs.† Perennial weeds .75-.75 pts.† + 8.5-17 lbs./100 gal.	†Rate dependent on weed species and growth stage. Apply to emerged weeds prior to crop emergence. May also apply as a pre-harvest (dry peas) or spot treatment. Refer to label for use rates and restrictions. PHI= 14 days.															
Far-Go	4EC	1.5 qts.	For use as a before seeding or after seeding incorporation treatment in peas (green, field, dried). See label for state restrictions.															
Gramoxone SL 2.0 + NIS or COC or MSO	2L	2-4 pts.† + 1 pt./100 gal. or 1 gal./100 gal. or 1 gal./100 gal.	†See label for harvest use rates. Succulent peas: Apply before or after seeding but before crop emergence. Do not contact crop. For dry (harvest aid)† and succulent (preplant, preemergence) peas.															
OpTill® + MSO† + AMSt or UANT†	68% WG	1.5 ozs.†† + 1 gal./100 gals. + 8.5 to 17 lbs./100 gals. or 1.25 to 2.5 gals./100 gals.	†For optimum burndown activity. ††Refer to label for application rates, timings and use precautions as they vary according to specific regions. OpTill provides both contact burndown and residual preemergence broadleaf and grass weed control. For use in English (garden, green), dry field peas and chickpeas (garbanzo beans) only. See supplemental label for use on English peas. Apply preplant burndown, PPI and/or PRE. Residual pre-emergence applications must be activated with moisture; refer to label. Rainfast in 1 hr.															
Poast + COC or MSO + AMS or UAN	1.5EC	<u>Annual grasses†</u> 1-2 pts. <u>Perennial grasses†</u> 1-2.5 pts. + 2 pts. or 1.5 pts. + 2.5 lbs. or 1 qt.	†Rate dependent on weed species and stage of growth and geographical area. Refer to label. PHI= 15 days for succulent peas and 30 days for dry peas. Apply to actively growing grasses.															



## PEAS-WEED CONTROL



Product	Formulation	Rate Per Acre	Comments
Prowl H2O	3.8 CS	Coarse	PPI application only. Rate varies with soil texture and by geography. Refer to label for specific instructions. PPI application. Postplant PRE applications allowed in ID, OR and WA. Must be incorporated (1-2 inches) and activated with >0.5 inch moisture for maximum weed control. Tank-mix for broad spectrum weed control.
		1.5 pts.	2 pts.
		3 pts.	
Prowl or Stealth	3.3EC	1.2-3.6 pts.†	†Rate dependent on weed population and crop residue in field. For use in many types of pea. PPI application only. Apply before planting and incorporate. Use lower rates in lighter soils. May be used in English pea in certain states.
Pursuit + NIS†† + AMS or UAN	2 AS	Dry edible and English peas Up to 3 ozs.† Southern peas Up to 4 ozs.† + 1 qt./100 gal. + 12-15 lbs./100 gal. or 1.25-2.5 gal./100 gal.	†In ND or north of Hwy. 210 in MN: Do not apply more than 2 ozs./A of Pursuit. Refer to label for other state restrictions. ††Do not use a COC. PPI: Apply one week prior to planting; PRE: Apply immediately after, or up to 3 days after planting; Early POST: Apply to dry edible peas, English peas, and Southern peas at least 3" in height but prior to 5 nodes and before flowering. PHI= 30 days for English peas and Southern peas and 60 days for dry edible peas.
Raptor + NIS	1AS	4 ozs. + 1 qt./100 gal.	POST: Apply prior to bloom but after peas have 3 pairs of leaves. COC and AMS can be used with Raptor for enhanced weed control when 6-16 ozs./A Basagran is used as a safener. For use in dry edible and Southern peas. May be used in English pea in certain states.
Rezult® + COC + UAN or AMS	5 EC (duplex jug)	3.2 pt. + 1.0 pt. + 1-2 qt. or 1-2 lb.	Do not apply the components of the duplex jug in combination other than a 1:1 ratio. Apply to dry peas only with a minimum of 3 pairs of leaves. Do not apply to peas under stress from root rot. PHI = 30 days.
Roundup WEATHER-MAX or Roundup PowerMAX + AMS	5.5S 5.5S	Annuals: 11-32 ozs.† Perennials: .4-3.3 qts.† + 8.5-17 lbs./100 gal.	†Rate dependent on weed species and stage of growth. PHI= 7 days. For many types of peas. Refer to label. Apply before or after seeding but before crop emergence. Do not contact crop. RU PowerMAX is labeled for preharvest application and spot treatment in peas. Refer to label for rates and other information.
Sharpen®	2.85 SC	Preplant surface up to PRE 1-2 oz.	May be applied preplant surface, PPI, and/or PRE for broadleaf weed control. For use on dry field peas and chickpeas (garbanzo beans) only. 1 hour rainfast. Legume forage may be grazed 65 or more days after application. For chickpeas, sequential apps. may be applied 14 days between apps. Refer to label. Potential tankmix partners include glyphosate and imazethapyr (Pursuit). Supplemental label for English and sugar snap peas in certain states." May be applied as a harvest aid when 80% of the pods have turned yellow to brown and there are 30% or less leaves remaining green/yellow.



## PEAS-WEED CONTROL



Product	Formulation	Rate Per Acre		Comments
Select Max or Intensity One + NIS + AMS	.97 lb. a.i.	<u>Annual grasses†</u> 9-16 ozs. <u>Perennial grasses</u> 12-32 ozs. + 1 qt./100 gal. + 2.5-4 lbs.		†Reduced rate option labeled. Refer to label. PHI= 30 days. For use in dry beans.
Select Max + Basagran + COC + AMS or Raptor + NIS + AMS	.97 lb. a.i. 4 lb. a.i. 1 AS	<u>Annual grasses</u> 9-12 ozs. + 1-2 pts. + 1 gal./100 gal. + 2.5 lbs. or 4 ozs. + 1 qt./100 gal. + 2.5 lbs.		PHI= 30 days. For use in dry beans.
Sonalan HFP or Sonalan 10G	3 EC 10G	Coarse      Medium 1.5-2 pts. or 5.5-7.5 lbs.      2 pts. or 7.5 lbs.		Apply before planting and incorporate into top 2-3" of soil. Use higher rates on heavier soils. For use in dry peas.
Thistrol®	2 E	2.6 pts.†		†Rate dependent on weed species and stage of growth. Apply POST when field peas have developed 6-12 nodes and before thistles are 9" tall. Apply in at least 15 gals. of water. Do not feed treated vines to livestock. Don't apply after pea flower buds appear. Check with local specialists before application as injury or delayed maturity may occur.
Trifluralin	4 EC	Coarse      Medium      Fine <3% OM      <3% OM      <3% OM 1 pt.      1-1.5 pts.      1.5 pts. 3%+OM      3%+OM      3%+OM 1 pt.      1.5 pts.      1.5 pts.		Apply before planting and incorporate. Use a lower rate on lighter soils.

## POTATOES-PREPLANT

Boundary®	6.5 EC	Coarse	Medium or Fine	Make applications before during or after planting. Do not apply PPI or crop injury may occur. Postemergence application may cause crop injury. Certain cereals and potato varieties are sensitive to metribuzin. Refer to label. PHI=60 days.
		.5-.3% OM 1.5-2 pts. >3%+OM 2-2.4 pts.	.5-.3% OM 2.4-2.75 pts. >3%+OM 2.75-2.9 pts.	
Chateau® SW	51WDG	1.5 ozs.		Apply after hilling; there must be at least 2" of soil covering the vegetative portion of the plant. Must be applied in a tankmix program such as Sencor+Chateau. Refer to supplemental label.
Cinch	7.64E	1-2 pts.†		†Up to 2.5 pts./A; may be used where OM is between 6 and 20%. Incorporate into the top 3" before planting. Check label for exact rates with your soil type. May delay maturity and/or reduce yield with some early varieties with cool, wet soil conditions. Weak on wild mustard control.



## POTATOES-PREPLANT



Product	Formulation	Rate Per Acre	Comments
Cinch	7.64E	1-2 pts.	†Restriction and rate differences for different regions. See product labels. Needs incorporation.
Dual II MAGNUM or Dual MAGNUM	7.64E 7.62E	1-2 pts.† or 1-2 pts.†	†Up to 2.5 pts./A; may be used where OM is between 6 and 20%. Incorporate into the top 3" before planting. Check label for exact rates with your soil type. May delay maturity and/or reduce yield with some early varieties with cool, wet soil conditions. Weak on wild mustard control.
Dual II MAGNUM or Dual MAGNUM + Eptam	7.64E 7.62E	1-2 pts. or 1-2 pts. + 3.5-7 pts.†	†Restriction and rate differences for different regions. See product labels. Needs incorporation.
Eptam	7E	3.5-7 pts.	Incorporate immediately in top 2-3". See label for cautions and restrictions.
Touchdown Total + AMS	4.17 lb. a.e. LC	Annual weeds† 12-36 ozs. or Perennial weeds† 4-3.6 qts. + 8.5-17 lbs./100 gal.	†Check label for rates; rates vary according to weed spp. and weed stage of growth. Apply broadcast before transplanting or before, during or after planting, but prior to crop emergence.

## POTATOES-PREAMERGENCE

Cinch	7.64E	1-2 pts.†	†Up to 2.5 pts./A may be used where OM is between 6 and 20%. Apply either after planting as preemerge, delayed preemerge, after drag-off or hillings treatments, but before weeds emerge.
Cinch	7.64E	Coarse      Medium      Fine 1-<3%OM      1-<3%OM      <3%OM 1 pt.      1.33 pts.      1.33 pts. 3-5%OM      3-5%OM      3-5%OM 1.33 pt.      1.67-2 pts.      1.67-2 pts.	Apply after planting or after drag-off.
Cinch	7.64E	Coarse      Medium      Fine <3% OM      <3% OM      <3% OM 1-1.33 pt.      1.33 pts.      1.33-1.67 pts. ≥3% OM      ≥3% OM      ≥3% OM 1-1.33 pt.      1.33-1.67 pts.      1.67-2 pts.	Can apply preemergence, preemergence incorporated, or early postemergence. See label for additional information.
Cinch	7.64E	Coarse      Medium      Fine 1-1.33 pts.      1.33-2 pts.      1.33-2 pts.	Apply preemergence up until after last hillings. See label for rates and restrictions.



## POTATOES-PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Dual II MAGNUM or Dual MAGNUM	7.64E 7.62E	1-2 pts.†			†Up to 2.5 pts./A may be used where OM is between 6 and 20%. Apply either after planting as preemerge, delayed preemerge, after drag-off or hillling treatments, but before weeds emerge.
Dual MAGNUM or Dual II MAGNUM + Lorox	7.62E 7.64E + DF or 4L	Coarse 1<3%OM 1 pt. 3-5%OM 1.33 pt.	Medium 1<3%OM 1.33 pts. 3-5%OM 1.67-2 pts.	Fine <3%OM 1.33 pts. 3-5%OM 1.67-2 pts.	Apply after planting or after drag-off.
Dual MAGNUM or Dual MAGNUM + Prowl or Stealth	7.62E 7.64E + 3.3EC	<3% OM 1-1.33 pt. ≥3% OM 1-1.33 pt.	<3%OM 1.33 pts. ≥3%OM 1.33-1.67 pts.	<3%OM 1.33-1.67 pts. ≥3%OM 1.67-2 pts.	Can apply preemergence, preemergence incorporated, or early postemergence. See label for additional information.
Dual MAGNUM or Dual MAGNUM or Cinch + Sencor	7.62E 7.64E 7.64E DF75%	Coarse 1-1.33 pts.	Medium 1.33-2 pts.	Fine 1.33-2 pts.	Apply preemergence up until after last hillling. See label for rates and restrictions.
Gramoxone SL 2.0 + NIS or COC	2.0L	1-2 pts. + 1 pt./100 gal. or 1 gal./100 gal.			Apply after weeds have emerged but before the crop emerges. Burndown only, no residual.
Linex	4L	Light soils (1-2%OM)	Heavier soils† (2-5%OM)	+ 1.5-2.5 lbs.	
Lorox		Light soils 1-2%OM 1.5-2.5 lbs.	Heavier soils† 2-5%OM 2.5-3 lbs.	+ 2.5-3 lbs.	
Matrix® + NIS or COC or MSO	25DF	1-1.5 ozs. + 1-2 pts./100 gal. or 1 gal./100 gal. or 1 gal./100 gal.			Use NIS in spray mixture for emerged weeds. Tankmix with metribuzin, Prowl or Stealth (3.3EC), Dual II MAGNUM or Eptam (7E). Refer to all product labels and follow the most restrictive statements.



## POTATOES-PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Metribuzin	75% DF	.33-1.33 lbs.			Apply after planting before crop emergence. Do not mechanically incorporate. See label and supplemental labeling for further uses and directions.
Outlook	6.0EC	Coarse ≤3%OM 12-14 ozs. 3%+OM 14-18 ozs.	Medium ≤3%OM 14-18 ozs. 3%+OM 18-21 ozs.	Fine ≤3%OM 14-18 ozs. 3%+OM 18-21 ozs.	Apply Outlook preemergence following planting or after drag-off. May be tankmixed with Sencor, Lorox, Matrix, Prowl or Stealth (3.3EC), Eptam (7E) and others. Refer to all product labels and follow the most restrictive statements.
Prowl or Stealth + Eptam	3.3 EC 7E	Coarse ≤3%OM 1.8 pts. ≥3%OM 1.8 pts.	Medium ≤3%OM 2.4 pts. ≥3%OM 3.6 pts.	Fine ≤3%OM 3.6 pts. ≥3%OM 3.6 pts.	Apply and incorporate immediately after planting or following drag-off, but before crop and weeds emerge.
Prowl or Stealth	3.3 EC	Coarse ≤3%OM 1.8 pts. ≥3%OM 1.8 pts.	Medium ≤3%OM 2.4 pts. ≥3%OM 3.6 pts.	Fine ≤3%OM 3.6 pts. ≥3%OM 3.6 pts.	Apply after planting or drag-off before potatoes and weeds emerge.
Prowl + Lorox or Lorox	3.3 EC 4L 50%DF	Coarse ≤3%OM 1.8 pts. ≥3%OM 1.8 pts.	Medium ≤3%OM 2.4 pts. ≥3%OM 3.6 pts.	Fine ≤3%OM 3.6 pts. ≥3%OM 3.6 pts.	For use East of the Rockies. Apply after planting, but before crop or weeds emerge or after drag-off or hilling. Plant at least 2" deep.
Prowl H2O	3.8 CS	Coarse ≤3%OM 1.5 pts. ≥3%OM 1.5 pts.	Medium ≤3%OM 2 pts. ≥3%OM 3 pts.	Fine ≤3%OM 3 pts. ≥3%OM 3 pts.	Apply postplant preemergence. Rate varies with soil texture. Must be incorporated (1-2 inches) and activated with >0.5 inch moisture for maximum weed control. Tank-mix for broad spectrum weed control. Will not control emerged weeds.
Reflex		1 pt./ A			Do not exceed 1 pt/A per season. Do not harvest potatoes within 70 days. Do not apply to sweet potatoes or yams. Do not apply preplant incorporated. Do not apply to emerged potatoes.
Sequence		Coarse Soils Do not exceed 2.5 pts.  Medium Soils <3% OM Do not exceed 3.75 pts.  Fine Soils >3% OM Do not exceed 4 pts.			The addition of AMS may improve control. Contact with potato foliage will result in crop injury. Do not apply more than 4 pts/A/ season. Do not use on sweet potatoes or yams. Refer to the label for further instructions and restrictions.
Sonalan HFP	3.0	Coarse 1.3 – 2 pts.	Medium 2 – 2.67 pts	Fine 2.67 pts	Refer to label for geographic use restrictions
Trifluralin	4EC	Coarse ≤2%OM 1 pt. 2-5%OM 1.5 pts. 5-10%OM 2 pts.	Medium ≤2%OM 1.25-1.5 pts. 2-5%OM 1.5 pts. 5-10%OM 2 pts.	Fine ≤2%OM 1.5-2 pts. 2-5%OM 2 pts. 5-10%OM 2 pts.	Apply after planting, but before emergence or immediately following drag-off. Carefully incorporate after application.



## POTATOES-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Aim EC + NIS or COC or MSO + UAN or AMS	1.9 lb. a.i.	3.2-5.8 ozs. + 1 qt./100 gal. or 1-2 gals./100 gal. or 1-2 gals./100 gal. + 2-4 gals./100 gal. or 2-4 lbs.			May be used alone or in tankmixes as a dessicant prior to harvest. Apply in a minimum of 20 gpa by ground and 5 gpa by air. If potato crop is in the active vegetative growth stage when dessication is initiated, two applications may be required. Do not apply within 7 days of harvest.
Dual MAGNUM	7.62E	1.67 pts.			Apply after potatoes emerge to hilling/layby. May be tankmixed with metribuzin, Lorox or Prowl/Stealth. See label for specific use, timing and geographic information. PHI= 40 days after layby application.
Intensity + COC + AMS	1.67S	6-16 ozs. + 1-2 pts. + 2.5 lbs.			For perennial and annual grass control. For perennial grasses a split application may be required for control. PHI= 30 days.
Eptam	7E	3.5-4.5 pts.			Apply as a directed spray and incorporate to clean cultivated soil after crop has emerged. PHI= 45 days.
Matrix + NIS or COC or MSO		1-1.5 ozs. + 1-2 pts./100 gal. or 1 gal./100 gal. or 1 gal./100 gal.			Control weeds when weeds are less than 1". May be tankmixed with metribuzin or Eptam 7E. Consult the label for more details.
Poast + COC or MSO + AMS or UAN	1.5EC	1-2.5 pts. + 2 pts. or 1.5 pts. + 2.5 lbs. or 4-8 pts.			For perennial grasses, see label for split applications. Use flat fan or hollow cone nozzles only. PHI= 30 days.
Poast + Sencor + COC or MSO	1.5EC 75%DF	1-2.5 pts. + .33-.66 lb. + 2 pts. or 1.5 pts.			For control of mixed populations of annual grasses and broadleaf weeds listed as susceptible on the two product labels. 0.33 lb./A of Lexone/Sencor is the preferred rate in this tankmix. PHI= 60 days.
Prowl H2O	3.8 ACS	Coarse $\leq 3\%$ OM 1.5 pts. $>3\%$ OM 1.5 pts.	Medium $\leq 3\%$ OM 2 pts. $>3\%$ OM 3 pts.	Fine $\leq 3\%$ OM 3 pts. $>3\%$ OM 3 pts.	Apply from crop emergence to 6" stage of growth. Do not apply if potatoes are under stress. Rate varies with soil texture. Must be incorporated (1-2 inches) and activated with >0.5 inch moisture for maximum weed control. Will not control emerged weeds.
Prowl or Stealth	3.3EC	Coarse $\leq 3\%$ OM 1.2-1.8 pts.† $>3\%$ OM 1.2-1.8 pts.†	Medium $\leq 3\%$ OM 1.8-2.4 pts.† $>3\%$ OM 2.4-3.6 pts.†	Fine $\leq 3\%$ OM 3 pts. $>3\%$ OM 3.6 pts.	†Use higher rate when Prowl 3.3 EC is applied alone (not a tankmix). Apply from crop emergence to 6" stage of growth when weeds are less than 1" tall. May be tankmixed with Eptam.



## POTATOES-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Reglone + NIS	2L	1-2 pts. + .5-4 pts.	For vine desiccation. Apply by ground in 20-100 gals. water/A or 5-10 gals. by air. Where vine growth is dense, a second application may be necessary (except for Russet Burbank). Allow 5 days between applications. Do not apply to drought stressed potatoes. PHI= 7 days.
Rely® 280 + AMS	2.34S	21 ozs. + 3 lbs.	Use to defoliate plants and facilitate harvest. Apply Rely 280 to naturally senescing potato vines. Do not split this application or apply more than 1 application per harvest. Varieties with dense or heavy vines may require an application of another desiccation product to complete vine dessication. Thorough coverage is essential. Apply Rely 280 in 20-100 GPA by ground or at least 10 GPA by air, according to need. <b>Do not apply to potatoes grown for seed stock.</b> PHI= 9 days.
Select Max or Intensity One  + NIS + AMS	.97 lb. a.i.	<b>Annual grasses</b> 9-16 ozs. <b>Perennial grasses</b> 12-32 ozs. + 1 qt./100 gal. + 2.5-4 lbs.	PHI=30 days.
Vida + COC or MSO + AMS	.208 lb. a.i.	5.5 ozs. + 1% v/v or 1% v/v + 2-4 lbs.	When applied as a foliar spray in early stages of senescence, Vida provides effective desiccation of potato foliage and vines, as well as control of late-season broadleaf weeds. May be tank mixed or applied in sequence with other desiccant products such as diquat for improved desiccation. PHI=7 days.

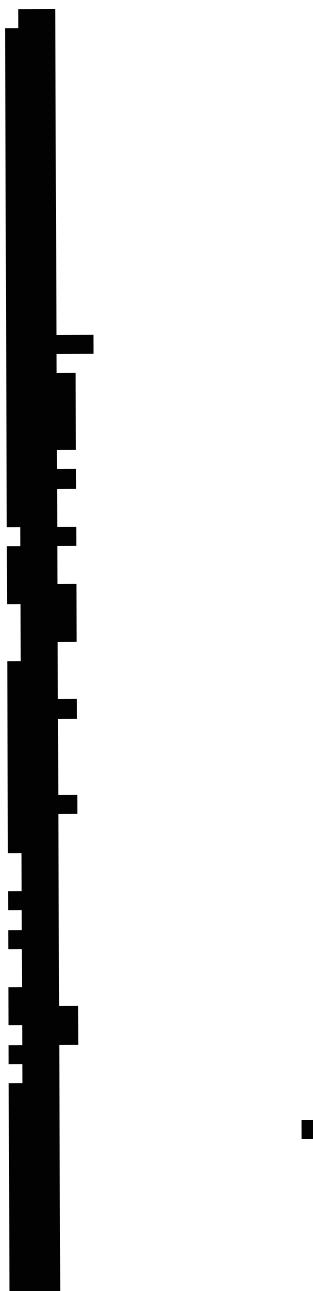


**Loveland**  
PRODUCTS

*Small Grain  
Herbicides*



# Growth Stages of Small Grains





## SMALL GRAINS PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Affinity® BroadSpec + NIS	50 SG	WW, SW, DW, B, O †	.4-1 oz.†† + .5-4 pts./100 gal.	†Use rate on oats is 0.4 oz./A. ††When using 0.4-0.6 oz./A this product must be used in a tankmix combination with other suitable registered herbicides. Apply as a burndown treatment to wheat (including durum) and barley to control emerged weeds prior to or shortly after planting (prior to emergence). Make applications when majority of weeds have emerged and are actively growing. Consult label for further directions.
Affinity TankMix + NIS or COC or MSO + UAN or AMS	50 SG	WW, SW, DW, B	.6-1 oz.† + 2-4 pts./100 gal. or 1-2 gals./100 gal. or 1-2 gals./100 gal. + 2 qts. or 2 lbs.	†Use in a tankmix combination with other suitable registered herbicides. May be applied up through planting but before crop emerges for a burndown application to wheat (including durum) and barley.
Amber® + NIS + AMS	75 WDG	WW, SW, DW, B	.28-.47 oz. (enhanced rate) .56 oz. + 1-2 qts./100 gal. + refer to label	Preplant, preplant shallow incorporated, or preemergence to winter wheat (except durum). See label for restrictions.
Banvel® SGF	2 lb. a.i.	WW, SW, DW, B, O	4-8 ozs.†	†Rate dependent on crop, refer to label. Application can be made before, during or after planting. Banvel SGF must be applied to fall seeded wheat, oats and barley prior to jointing and to spring seeded wheat and oats before crop exceeds the 5-leaf stage (4-leaf stage for spring seeded barley). Consult label for many tankmix options.
Buckle®	13G	WW, SW, DW, B	<u>Winter wheat (fall)</u> 12.5-15 lbs. <u>Barley (spring or fall)</u> 10.5-12 lbs. <u>Durum wheat (fall)</u> 10-12.5 lbs.	For use on winter wheat, durum wheat and barely only. Apply in the fall within 3 weeks of normal freeze-up or until snow cover occurs or can be used in spring on barley before planting. First incorporation must be within 24 hours after application. Set equipment to work soil no deeper than 3-4". Do not use a disc. See label for further incorporation directions. Controls green and yellow foxtail and wild oats.
Clarity + NIS or COC + UAN or AMS	4SL	WW, SW	2-4 oz. + 0.125-0.25% v/v or 1 qt. + 2-4 qt. or 2.5 lb.	A tank mix up to 4.0 fl. oz./A may be used with glyphosate labeled for use as a preplant application to wheat. Can be applied with no waiting period prior to planting.



## SMALL GRAINS PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Durango DMA + AMS	4 lb. gly. acid	WW, SW, DW, B, O	<u>Annual weeds</u> 12-36 ozs. <u>Perennial weeds</u> .75-.7.5 pts. or 24-48 ozs. + 8.5-17 lbs./100 gal.	Apply to emerged weeds prior to crop emergence. (Preplant, preemergence or at-plant application.)
Express® + NIS or COC or MSO + UAN or AMS	50%SG	WW, SW, DW, B	.25-.5 oz.† + .5-4 pts./100 gal. or 1 gal./100 gal. or 2 qts./100 gal. + 2 qts. or 2 lbs.	†Rate dependent on weed species and population. Refer to label for details. Apply as a pre-plant burndown treatment prior to planting, or shortly after planting wheat (including durum) or barley.
Facet L® + COC or MSO + AMS or UAN	1.5L	WW	22 fl oz + 2 pt/A or 1-2 pt/A + 8.5 lb/100 gal or 4 qt/A	Use as a preplant treatment prior to planting wheat in all states except ID, MT, NV, OR, UT, WA and WY. Plant wheat at least 1" deep. For bindweed, apply in the fall before the first killing frost. Bindweed should be actively growing and at least 4" long.
Far-Go®	4EC	WW, SW, DW, B	<u>WW, B (winter): Fall Treatment Incorporated</u> 1.25-1.5 qts. <u>Fall Treatment Incorporated</u> SW, DW: 1 qt. B (spring): 1.5 qts. <u>Spring Treatment Incorporated</u> <u>Before seeding</u> SW, DW: 1 qt.; B†: 1.5 qts. <u>After seeding</u> SW, DW: 1 qt.; B: 1.5 qts.	†Apply just before seeding. Apply just before or soon after seeding and shallowly incorporate. Refer to label for detail incorporation instructions. Do not disturb wheat seed. Where rate range is provided, rate is dependent on target weed. Refer to label for state specific options.
Far-Go	10G	WW, SW, DW, B	<u>WW, SW, DW, B: Fall Treatment Incorporated</u> 12.5-15 lbs. <u>Spring Treatment Incorporated</u> <u>Before seeding</u> SW, DW: 10 lbs. <u>Before †/after seeding</u> SW, DW: 10-12.5 lbs. <u>Just before or immediately after seeding</u> B: 12.5-15 lbs.	†Disc/Press drills. ††Hoe drills. Apply just before or soon after seeding and shallowly incorporate. Refer to label for detail incorporation instructions. For all spring treatment incorporated applications, apply before wild oats germinate. Apply lighter rates on lighter soils and higher rates on heavier soils. Refer to label for state specific options.
Four Power Plus + NIS + AMS	4 lb. a.i.	WW, SW, DW, B, O	Refer to label. + 1-2 qts./100 gal. + 8.5-17 lbs./100 gal.	Apply prior to crop emergence. See label for specific weeds controlled, weed size and rates.



## SMALL GRAINS PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Gramoxone SL + NIS or COC	2 lb. a.i.	WW, SW, B	2-4 pts.† + 1 pt./100 gal. or 1 gal./100 gal.	†Rate varies with weed size, refer to label. Apply prior to crop emergence. Refer to label for recommended spray volumes.
Harmony SG or Harmony Extra + NIS or COC or MSO + UAN or AMS	50SG or 50SG	WW, SW, DW, B, O	WW, SW, DW, B: .45-.9 ozs.† O: .45-.6 ozs.† + 2-4 pts./100 gal. (NIS-SG) .5-4 pts. (NIS- Extra)  or 1 gal./100 gal. (COC-SG and Extra) or 2 qts./100 gal. (MSO-SG) 1 gal./100 gal. (MSO-Extra) + 2 qts. (UAN-SG and Extra) or 2 lbs. (AMS-SG and Extra)	†Rate dependent on weed species and population. Refer to label for details. Apply as a pre-plant burndown treatment up through planting but before wheat (including durum), barley or oat plants emerge.
Maverick®	75 WDG	WW	.67 ozs.	Apply preemergence. Do not apply if dry soil conditions or during other conditions that result in delayed weed emergence.
Olympus®	70 WDG	WW	.6 ozs.	Excellent tank mix for control of glyphosate resistant weeds. Apply prior to crop emergence.
Roundup WEATHER-MAX + AMS or UAN	5.5S	WW, SW, DW, B, O	22-32 fl. oz. + 8.5-17 lbs./100 gal. or 1-2 gals./100 gal.	Apply prior to crop emergence. See label for specific weeds controlled, weed size and rates. Apply in 3-40 gals. of water/A.
Sharpen® + MSO† + AMS† or UAN†	2.85 SC	WW, SW, DW, B, O	1-2 ozs. + 1 gal./100 gal. + 8.5-17 lbs./100 gal. or 1.25-2.5 gals./100 gal.	†For burndown applications, an adjuvant is required. For burndown broadleaf weed control, apply preplant surface, PPI, or PRE. Sequential apps. may be made as needed prior to small grain emergence. Early PRE apps. may be applied as part of a split app. program where the 1st app. is made early PRE and the 2nd is made PRE. Potential tankmix partners are glyphosate or dicamba. 1 hour rainfast. May also be used in Pearl and Proso millet.
Targa® + NIS or COC	.88 lb. a.i.	SW, DW, B	2.5 -10 ozs. + 1 qt./100 gal. or 1 gal./100 gal.	Preemergence application. Applications made within 14 days of planting may result in crop injury.
Touchdown CT/CT2 + AMS	4.17 lb. a.i.	WW, SW, DW, B, O	24-48 ozs.† + Refer to label.	†Rate varies with weed size, refer to label. Apply prior to crop emergence. Refer to label for recommended spray volumes.



## SMALL GRAINS PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Touchdown Hi-Tech + NIS + AMS	5 lb. gly. acid	WW, SW, DW, B, O	9.6-48 ozs.† + 1 qt./100 gal. + 8.5-17 lbs./100 gal.	†Rate dependent on weed species and height. Refer to label. Apply prior to crop emergence.
Touchdown Total or Touchdown CT/CT2 + AMS	4.17 lb. gly. acid	WW, SW, DW, B, O	24-48 ozs.† + 8.5-17 lbs./100 gal.	†Rate dependent on weed species and height. Apply prior to crop emergence.
Treflan® TR-10	10G	SW, DW, B	B: spring seeded, fall app.† Coarse Medium Fine 5 lbs. 7.5 lbs. 7.5 lbs. B: spring seeded, spring app., (foxtail control)† Coarse Medium Fine 5 lbs. 5 lbs. 5 lbs. SW, DW: spring seeded, spring app. PPI, (foxtail control)†† Coarse Medium Fine 3.5-4 lbs. 3.5-4 lbs. 3.5-4 lbs. SW, DW: spring seeded, fall app. (foxtail control)††† Coarse Medium Fine 5 lbs. 5 lbs. 7.5 lbs.	†For use in MN, ND, and SD only. ††For use in ND (certain areas, refer to label) and SD only. †††For control of foxtail the following season. Do not use on winter wheat except in ID, OR and WA. Refer to label for recommended seed depth and incorporation instructions.
Trifluralin	4 EC	SW, DW, B	B: spring seeded, spring app., (foxtail control)† 1 pt. SW, DW, B: spring seeded, spring app. PPI, (foxtail control) Coarse Medium Fine 1pt. 1 pt. 1.5 pts. SW, DW, B: spring seeded, fall app. (foxtail control)†† Coarse Medium Fine 1 pt. 1 pt. 1.5 pts.	†For use in MN, ND and SD only. ††For control of foxtail the following season in MN, ND and SD. Do not use on winter wheat except in ID, OR and WA. Refer to label for recommended seed depth and incorporation instructions.
Trifluralin + Far-Go	4 EC 4 lb. a.i.	SW, DW, B	1 pt. + 2 pts.	Apply immediately after seeding and shallowly incorporate. Refer to label for recommended incorporation equipment. Incorporate a second time. Do not disturb seed. Refer to Treflan and Far-Go labels. Do not place seed in chemical layer. Do not use on winter wheat. See Trifluralin label for rate for your soil type.
Zidua	85% WG	WW, SW	By soil texture Coarse 0.7-1 oz Medium 1-1.25 oz Fine 1-1.25 oz	Apply delayed preemergence when 80% of germinated wheat seeds have a shoot at least ½ inch long until wheat spiking. Do not apply preplant or PRE. Does not control emerged weeds.

# SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Achieve Liquid	3.33 lb. a.i.	WW, SW, DW, B	6.9-9.2 ozs.†	†In MN, MT, ND and SD, apply only at the 6.9 ozs./A rate. In other states, use the high rate when soil is dry, weeds are large, weed population is high or crop canopy is dense. Do not apply Achieve Liquid on spring wheat in MN, east of Hwy. 281 in ND, or in SD.
Affinity BroadSpec + NIS or COC or MSO + UAN or AMS	50SG	WW, SW, DW, B,O†	.4-1 oz.†† + .5-4 pts. or 1 gal./100 gal. or 1 gal./100 gal. + 2 qts. or 2 lbs.	†Use rate on oats is .4 oz./A only. ††When using 0.4-0.6 oz./A, Affinity BroadSpec must be used in a tankmix combination with other registered herbicides. Apply postemerge to wheat (including durum) and barley after the 2-leaf stage but before flag leaf is visible. Make applications when majority of weeds have emerged and are actively growing. Do not apply more than 1.0 oz./A per crop season. Consult label for further directions.
Affinity Tankmix† + NIS or COC or MSO + UAN or AMS	50SG	WW, SW, DW, B, O	.6-1 oz. + 2-4 pts./100 gal. or 1-2 gals./100 gal. or 1-2 gals./100 gal. + 2 qts. or 2 lbs.	†Use in a tankmix with other suitable herbicides. May be applied by ground or air. Apply after the crop is in the 2-leaf stage, but before the flagleaf is visible on wheat, barley, triticale and winter oat. On spring oat, apply after the crop is in the 3-leaf stage but before jointing.
Aim EC + NIS + UAN or AMS	2 lb. a.i.	WW, SW, DW, B, O	.5-2 ozs. + 2 pts./100 gal. + 2-4 gal./100 gal. or 2-4 lbs.	Apply from 3 days before planting up to the jointing stage of growth. Apply before weeds reach 4" in height. Postemerge tank mixes include 2,4-D, and MCPA. Harvest Aid: Aim may be used at 1 - 2 ozs./A, refer to the label for more detailed instructions.
Ally® XP + NIS	60DF	WW, SW, B	.1 oz. + 1-2 pts./100 gal.	Apply postemerge to winter wheat, spring wheat or barely from 2-leaf stage, but before boot. For durum and Wampum variety of spring wheat, make application after the crop is tillering but before boot stage. Applications to durum and Wampum varieties should be made in combination with 2,4-D. For irrigated wheat and barley, make applications after the crop begins tillering but before boot. Do not apply to stressed crops. Do not use on soils with a pH above 7.9. See label for crop rotation restrictions, tankmix information, directions for use and other information.
Ally® Extra SG	51.8 SG	WW, SW, B, T, FALLOW	.3-.5 oz.	Apply postemerge to winter wheat, spring wheat or barely from 2-leaf stage, but before flag leaf is visible. For durum and Wampum variety of spring wheat, make application after the crop before boot stage. Applications to durum and Wampum varieties should be made in combination with 2,4-D. For irrigated wheat and barley, make applications after the crop begins tillering but before boot. Do not apply to stressed crops. Do not use on soils with a pH above 7.9. See label for crop rotation restrictions, tankmix information, directions for use and other information.



## SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Amber + NIS	75WDG	WW, SW, DW, B	.28-.56 oz.† + 1-2 qts./100 gal.	†Use higher rate in rate range for additional length of control or for larger weeds. Apply at any stage up to pre-boot in wheat and 2-leaf to pre-boot in barley. See label for pH restrictions.
Amine 4 or 2,4-D	3.74 lb. acid	WW, SW, DW, B	.66-1.66 pts. or .5-1 pt.	Apply at full tiller (usually 4-8") but before the boot stage when weeds are small. Label rates up to 3 pints per acre are recommended for special situations however, crop injury is likely. Do not apply before tiller stage, nor from early boot through milk stage. Preharvest application may be made when grain is in dough stage. Fall spraying of winter wheat is not recommended.
Axial XL	.42 lb. a.i.	WW, SW, B	16.4 ozs.	POST control of grasses including wild oat, Italian ryegrass, and foxtail spp. Apply from 2-leaf to pre-boot stage of crop. Rainfast in 30 minutes.
Axial Star	1.15 lb. a.i.	spring wheat (excluding durum), winter wheat and barley	16.4 fl oz	For the control of Annual grass and broadleaf weeds including wild oats, foxtails and ryegrass. Check label for all tankmix partners. No additional adjuvants required when applied alone. Apply to non-ACCase resistant wild oats when actively growing and timed accordly with weed flush.
Axiom	68% DF	WW, Triticale	Soil texture Coarse 4-6 oz/acre Medium 6-8 oz/acre Fine 8-10 oz/acre	Apply from spiking to 2 leaf wheat for control of annual grasses and small seeded witer annual broadleaf weeds. Good resistance management tool for control of ALS and ACCase resistant ryegrass. Certain wheat varieties are sensitive to metribuzin. Consult seed supplier for recommendations. REI: 12 hrs PHI: 30 days Max/year: 10 oz.
Banvel or Clarity/Strut + NIS†† + AMS†† or UAN††	4 SL	WW, SW, DW, B, O	<u>Wheat: Fall-seeded, prior to jointing†,††</u> 2-4 ozs. <u>Wheat: Spring seeded, before exceeds 6-leaf†</u> 2-4 ozs. <u>Barley: Fall-seeded, prior to jointing†</u> 2-4 ozs. <u>Barley: Spring-seeded, prior to 4-leaf†</u> 2-3 ozs. <u>Oats: Fall-seeded, prior to jointing†</u> 2-4 ozs. <u>Oats: Spring-seeded, prior to 5-leaf†</u> 2-4 ozs. + 1-2 pts./100 gal. + 2.5 lbs. or 2-4 qts.	†Early season application. ††Clarity and Strut only. ††In CO, KS, NM, OK and TX, up to 8 ozs./ A may be applied on fall-seeded wheat after it exceeds the 3-leaf stage for suppression of perennial weeds, such as field bindweed. Early season wheat varieties (i.e. TAM 107, Madison, or Wakefield) must receive application between early tillering and jointing. Refer to label for specific use programs for fall-seeded wheat (up to 8 ozs./ A rate available in certain states). Clarity/ Strut may be used up to 8 fl oz as a preharvest treatment in barley or wheat in the hard dough stage after the green color is gone from the nodes.

## SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Beyond® + NIS + UAN or AMS	1AS	WW, SW	4-6 ozs. + 1 qt./100 gal. + 2.5 gals./100 gal. or 12-15 lbs./100 gal.	Apply to Clearfield or Clearfield Plus wheat varieties only. May be applied in the fall or spring. Apply to wheat after tiller initiation up to just prior to wheat jointing stage when grass weeds are 1 to 4 or 5 leaf and before broadleaf weeds exceed 3" in height. May be tankmixed with broadleaf herbicides for control of ALS resistant weeds such as kochia. For best results with feral rye, a fall application is recommended. Apply before first tillers are formed for best control. COC/MSO may be used on 2-gene varieties (Clearfield Plus). If tank mixed with other herbicides, confirm COC/MSO is labeled for the tank mix partner.
Broclean	2EC	WW, SW, DW, B, O	<u>Spring seeded</u> 1-2 pts.† <u>Fall seeded</u> 1.5-2 pts.	†For spring-seeded small grains in ID, OR, WA, CO, WY and MT, use 1.5-2 pts./A. Apply to crop from emergence to boot stage. Susceptible weeds – apply before 2" tall or 1" in diameter.
Colt® AS	1.5 lb. a.i.	WW, SW, DW, B, O	1-1.33 pts.	Apply from 3-leaf to flag leaf emergence.
Curtail®	2.38 lb. a.i.	WW, SW, DW, B	2-2.66 pts.	Apply when 4 leaves have unfolded on the main stem and tillering has begun up to jointing stage of wheat and barley. See label for crop rotation guidelines. For optimum control, apply before annual weeds exceed 3" in height or diameter. To obtain season-long Canada thistle control, apply after the basal leaves are at least 4", but before the bud stage. Can be tankmixed with Buctril, Glean, Banvel, Ally, Harmony Extra and TNT Broadleaf.
Curtail M	2.77 lb. a.i.	WW, SW, DW, B, O	1.75-2.33 pts.	Apply from when 3 leaves have unfolded on the main stem up to jointing stage of wheat, barley and oats. Can be tankmixed with Glean or Banvel.
Discover® NG†	0.5 lb. a.i.	WW, SW, DW	12.8-16 ozs.	†MSO may enhance control under certain conditions, refer to label. For use on spring wheat, durum wheat and winter wheat (spring applications only). May be tankmixed with many broadleaf herbicides and fungicides (see label for complete list).
Everest® + NIS + 2,4-D or MCPA or Ally	70DF	WW, SW, DW	.3-.6 oz. + Refer to label. + .25-.75 pt. (spring or durum) or .5-1 pt. or .1 oz. (spring or durum)	For use only in wheat. DO NOT apply if rain is expected within 1 hr. DO NOT apply through any type of irrigation equipment. Refer to label for wheat stage of growth application recommendations. Apply to wild oats and green and yellow foxtail from 1-6 total leaves. Apply to ryegrass species from 1 leaf to tillering. See label for crop rotation and other restrictions. A non-ionic surfactant must be included in the spray solution. Recommendations are provided in the label and vary with the specific tank mix partner.
Express® + NIS + 2,4-D LV4	50 SG	WW, SW, DW, B	.25-.5 oz. + 1-2 pts. + 2-6 ozs.	Do not apply more than .5 oz./A/season. Do not apply to stressed crops as this may cause crop injury. Apply when crop is in the 2-leaf stage, but before flag leaf is visible.



## SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Express + 2,4-D LV4 + Banvel + NIS	50 SG	WW, SW, DW, B	.25-.5 oz. + 4-6 ozs. + 1-1.5 ozs. + 1-2 pts.†	†Add NIS when necessary in your area. Apply to wheat after the 2-leaf stage but before the flag leaf is visible. Other recommended tankmixes include: Harmony Extra, Harmony GT, TNT Broadleaf, Salvo, and Sword. Check label for specifics.
Finesse® + NIS	75DF	WW, SW, B	<u>Preplant, prior to planting</u> WW, SW†: .2-.4 oz. <u>Preemergence, after planting, but before WW emerges</u> WW: .2-.5 oz.† SW: .2-.4 oz.† +.5-4 pts./100 gal.	†In WY, MT, ND, SD and MN, do not exceed .3 oz./A. Rate dependent on weed species to be controlled. This label has state restrictions. Preplant and preemergence applications are recommended for WW and SW only. Provides postemerge activity and potential for residual control of labeled weeds. Read label for further information and restrictions. May be tankmixed with $\frac{1}{2}$ pt./A 2,4-D. For resistant weed populations, tankmix with Banvel, Rifle, or Banvel SGF. Refer to supplemental label (WW and SW in MT, ND, SD, and WY).
Foxfire®		WW, SW	8.2 oz./A	Make one application per crop season. Do not graze livestock or harvest for hay for a minimum of 30 days. Do not harvest grain 60 days following application in MN, MT, ND and SD. Do not harvest grain 70 days following application in WY. Wheat straw may be fed to livestock 60 days after application. Apply to all varieties of spring wheat (excluding durum) and winter wheat from the 2-leaf stage to pre-boot stage. See label for further instructions and restrictions.
Glean® + NIS	75%DF	WW, SW, DW, B, O	.166-.33 oz.† + refer to label	†Use .166 oz./A for short term control or suppression; use .33 oz./A for soil residual control. Apply from 2-leaf stage to boot. Exception: regional (i.e. Pacific NW) and varietial i.e. (Vic durum), refer to label.
GoldSky™ + NIS + AMS	0.84 lb. a.i.	WW, SW, DW	1 pt. + 1-2 qts./100 gal. + 1.5 lbs.	Use on winter or spring wheat (including durum). Apply to annual grass from 2 leaf to 2-tiller stage and broadleaf weeds up to 2" in height or diameter. Rotate to common rotation crops 9 months following application. See label for specific local rotational intervals
Harmony® Extra SG	50%SG	WW, SW, DW, B, O	<u>WW, SW, DW, B</u> .45-.9 oz. O .45-.6 oz.	Application timing, except spring oats: 2-leaf stage to before flag leaf is visible. Application timing for spring oats: after 3-leaf stage, but before jointing.
Hat Trick® Three Way Herbicide	2.82 lb. a.i.	WW, SW, DW, B, O	<u>WW, SW, DW, B</u> 1.5-2 pt.†	†Generally, app. rates at the lower end of the listed range will be satisfactory for young, succulent growth of susceptible weed spp. For less sensitive spp., perennials, and under conditions where control is more difficult, the higher listed rates will be needed. Only weeds that have emerged at the time of app. will be controlled. Do not apply this product after the crop has reached F9 stage.
Huskie + NIS + AMS	2.06% EC	WW, SW, DW, B	11-15 oz + 1 qt./100 gal. + 0.5 lbs. / acre	Apply from 1-leaf stage of growth up to flag leaf emergence. Do not graze or harvest forage within 25 days, or grain or straw for 60 days after application. Do not plant lentils for 18 months after application of Huskie in ND, MT, SD, and MN. May be tank mixed with other labeled wheat herbicides, fungicides, insecticides or foliar feed products..
Huskie Complete	2.4% OD	WW, SW, DW	13.7 ozs.	Apply to young actively growing weeds from 1 leaf up to jointing for broad spectrum postemergence control of important grass and broadleaf weed species in wheat, including durum wheat.



# SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Maverick + NIS	75 WDG	WW, SW,	.33 oz. + 2 qts./100 gal.	For winter wheat in KS, OK and TX, apply after wheat is in the 2-leaf stage but prior to jointing. In other states, apply to winter and spring wheat after emergence but prior to jointing. For best control, apply when brome species are in the 2-3 leaf stage. In spring, apply when brome is less than tiller. Do not plant to crops other than winter or spring wheat for 1 year. Before rotating to other crops, conduct a bioassay.
MCPA Amine 4 or MCPA Ester 4	4 lb. a.i. 4 lb. a.i.	WW, SW, DW, B, O	.5-1 pt. or .5-1 pt.	Apply when grain is in the 3-4 leaf stage up to early boot stage. Apply when weeds are very small and actively growing for best results.
Olympus® + NIS	70 WDG	WW, SW, DW	.6-.9 oz. + 1-2 qts./100 gal.	Apply to winter wheat from emergence to prior to joint stage. Apply when grass weeds are 2-leaf to 2-tiller stage of growth and broadleaves are 2" in diameter or less. Fall and/or spring applications of Olympus provide consistent control of cheat. Spring applications will control wild oat. See the label for tankmix options, crop rotation restrictions, and additional information.
Orion™	2.34 lbs./gal.	WW, SW, DW, B, O	17 ozs.	Also for use in rye and triticale. Apply early POST for annual broadleaf control. Treat from 3-leaf to joint stage of crop.
Osprey™ + NIS + UAN or AMS or MSO	4.5% WDG	WW	4.75 ozs. + 2 qts./100 gal. + 1-2 qts. or 1.5-3 lbs. or 1.3-1.5 pts.	Apply to winter wheat from emergence to the jointing stage of growth. Apply when grass weeds are 1-leaf to 2-tiller stage of growth and broadleaves are 4" in height or less. See the label for tankmix options, crop rotational restrictions, and additional information.
Peak® + NIS + UAN or AMS	57% WDG	WW, SW, DW B, O	.38-.5 oz. + 1-2 qts./100 gal. + 2-4 qts. or 2 lbs.	Also for use in rye and triticale. Apply from emergence to before the second node is detectable. It can be tankmixed with 2,4-D, MCRA, Banvel, Rifle, Bronate or Butril. Time application to optimum weed heights within the recommended crop stage. See label for rotational guidelines.
PowerFlex® HL + NIS or COC + AMS	13.13% WDG	WW	2 ozs. + 1-2 qts./100 gal. or 0.8 gal./100 gal. + 1.5 lbs.	†When using COC in place of NIS, do not use AMS. Apply PowerFlex in either fall or spring to actively growing winter wheat from the 3-leaf to jointing stage (Zadoks stage 31) according to the application timings to specific weeds as shown in the label.
Prowl H2O	3.8CS	WW, SW	By soil texture for Southern States* Coarse 1.5-2 pt Medium 1.5-3 pt Fine 2-3 pt	Apply from 1st leaf stage until the flag leaf is visible. Apply prior to weed germination. For established weeds, Prowl H2O may be tank-mixed with labeled wheat herbicides. Use nozzle and in-line screens no finer than 50 mesh. *Rates for Northern States (see label for map) are coarse 1.5 pt, medium 1.5-2 pt, fine 2-3 pt.



# SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Pulsar™ + NIS†	1.673 lb. a.i.	WW, SW, DW, B	8.3-12.5 ozs. + 1-2 pts.	†Not required if tank mix partner has build-in adjuvant. POST control of many broadleaf weeds using a minimum of 8 gpa by ground or 3 gpa by air. <i>Fall seeded wheat* and barley:</i> Apply before jointing stage. <i>Spring seeded wheat:</i> * Apply before wheat exceeds 5-leaf stage. <i>Spring seeded barley:</i> * Apply before barley exceeds 4-leaf stage. Rainfast in 4 hrs. PHI=40 days. *Refer to label for details.
Rave® + NIS	50% WDG	WW, SW, DW, B	<u>WW, SW, DW, Winter Barley:</u> 4 ozs. <u>Spring Barley:</u> 2 ozs. + refer to label	For winter wheat and winter barley, apply after emergence up to jointing. For spring wheat, apply after emergence up to 6-leaf stage. For spring barley, apply after emergence up to 4-leaf stage.
Rimfire® Max Herbicide + MSO or NIS + UAN or AMS	6.7% WDG	WW, SW, DW	3 ozs. + 1.3-1.5 pts. or 1-2 qts./100 gal. + 1-2 qts. or 1.5-3 lbs.	For use in ND, MN, SD and MT. Apply to the crop from emergence (one fully expanded leaf) up to flag leaf emergence. Apply when wild oat and other grasses are in the 1-leaf to 2-tiller stage of growth and broadleaf weeds are 2 inches in diameter or less. Rimfire Max can be tankmixed with Affinity BroadSpec, Affinity TankMix, Ally, Ally Extra, ronate Advanced, Buctril, Express, Harmony SG, Harmony Extra, Huskie, TNT Broadleaf, Unity, MCPA, Olympus, Starane Ultra, Stinger, Colt AS and Widematch. See the label for crop rotational restrictions. Rotational interval for sugar beets is 10 months.
Saber®	3.8 lb. acid equiv.	WW, SW, DW, B, O	<u>WW, SW, DW, B:</u> <u>Spring Seeded† (1+ tillers and 3+ leaves)</u> .25-1 pt. <u>(full tiller stage)††</u> .5-1.5 pts. <u>Fall Seeded† (1+ tillers, 3+ leaves)</u> .5-1 pt. <u>(full tiller stage)††</u> .5-1 pt. O: <u>Spring Seeded† (full tiller stage)††</u> .375- 1 pt.	†Spring application. ††Refer to label for growth stage description. Do not apply from boot to dough stage. Oats are more susceptible than wheat or barley, refer to label.
Salvo®	5 lb. a.i.	WW, SW, DW, B, O	<u>WW, SW, DW, B:</u> <u>Spring Seeded† (1+ tillers and 3+ leaves)</u> 6.4-9.6 ozs. <u>(full tiller stage)</u> 6.4-12.8 ozs. <u>Fall Seeded† (1+ tillers, 3+ leaves)</u> 6.4-12.8 ozs. <u>(full tiller stage)††</u> 6.4-12.8 ozs. O: <u>Spring Seeded† (full tiller stage)††</u> 6.4 ozs.	†Spring application. ††Refer to label for growth stage description. Do not apply from boot to dough stage. Oats are more susceptible than wheat or barley, refer to label.



## SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Sierra	3.5 lb. a.i.	WW, SW, DW	0.5-1.0 fl oz.	Do not apply when rain is expected within one hour after application. Refer to label for wheat growth stages and weed heights for application recommendations. For control and suppression of ACC-ase resistant wild oats, green and yellow foxtails among other grasses and broadleaf weed species.
Starane Ultra + Saber	2.5 lb. a.i.	WW, SW, DW, B, O	1.5-2 pts.†	†May apply up to 4 pts./A for control of volunteer potatoes. Crop injury may result at rates higher than 2 pts./A. Apply from 4-leaf stage to flag emergence and when weeds are actively growing.
Starane Ultra + Salvo + Adjuvants†	3.75 lb. a.i.	WW, SW, DW, B, O	1-1.33 pts.††	†Refer to label. ††Up to 2.33 pts./A may be applied for control of volunteer potatoes but crop injury may occur at rates higher than 1.33 pts./A. Apply from 4-leaf stage up to flag leaf emergence. Controls ALS resistant kochia biotypes. Can be tankmixed with Express, Harmony Extra, TNT Broadleaf, bromoxynil and others.
Starane Ultra + Sword + Adjuvants†	3.55 lb. a.i.	WW, SW, DW, B, O	1.125-1.5 pts.††	†Refer to label. ††Rate dependent on weed species and stage of growth. Up to 2.75 pts./A may be applied for control of volunteer potatoes but crop injury may occur at rates higher than 1.5 pts./A. Apply from 3-leaf stage up to and including flag leaf emergence when weeds are actively growing. Control ALS resistant kochia biotypes. Can be tankmixed with Achieve, Puma, Express, Harmony Extra, TNT Broadleaf, bromoxynil, and others.
Starane Ultra	2.8 lb. ae	WW, SW, DW, B, O	.3-.7 pts.	Rate dependent on weed species and stage of growth. Apply from 2-leaf stage of growth up to and including flag leaf emergence. Rainfast in 1 hour. Generally, adjuvants are not required when applying Starane Ultra along. Please refer to the label for recommended adjuvants for Starane Ultra plus tank mix partners.
Stinger	3SC	WW, SW, DW, B, O	.25-.33 pts.	Apply from 3-leaf stage up to early boot, when weeds are young and actively growing. The higher rate should be used for dense infestations or under poor growing conditions. For best control of perennial weeds, like Canada thistle, apply after basal leaves have emerged but before the bud stage. May be tankmixed with 2,4-D, MCPA, Buctril, Bronate, Glean, Banvel, Rifle, TNT Broadleaf, Igran, Sencor, metribuzin, Diuron 4L, Ally or Harmony Extra. See label for precautions, recommended tankmixes and for crop rotation intervals.



## SMALL GRAINS-POSTEMERGENCE



Product	Formulation	Crops Labeled*	Rate Per Acre	Comments
Sword®	5.2 lb. a.i.	WW, SW, DW, B, O	<u>WW, SW, DW, B;</u> <u>Spring Planted, 3-4 leaf stage prior to boot .33-2 pts.†</u> <u>Fall Planted, Fall Application, 3-4 leaf stage up to boot .33-.75 pts.†</u> <u>Fall Planted, Spring Application, fully tillered, prior to joint .33-.75 pts.†</u> <u>O:</u> <u>Fully tillered, prior to boot .375-.75 pts.†</u>	†Use lower rate in rate range for more susceptible weeds and higher rates for less susceptible weeds.
TNT Broadleaf + NIS + 2,4-D Amine or 2,4-D LV4 or Salvo or MCPA or Sword®	75% DF 3.8 lb. a.i. or 3.8 lb. a.i. or 5 lb. a.i. or 4 lb. a.i. or 5.2 lb. a.i.	WW, SW, DW, B	WW, SW, DW, B: .3-.6 oz. O: .3-.4 oz. + 1-2 qts./100 gal. + .5-.75 pt. or .5-.75 pt.† or .4-.66 pt. or .5-.75 pt. or .4-.66 pt.	†Refer to label, rate dependent on region. For best results, use Harmony Extra with 2,4-D or MCPA ester formulations. Not compatible with Hoeion or Tiller. Provides broadleaf weed control with wide window of application. Refer to all labels for complete instructions including crop stage of growth application recommendations. Use the most restrictive statements on labels.
Varro	0.083 OD	WW, SW, DW	6.85 fl. oz	Provides broad spectrum postemergence grass control. Tank mix with other labeled products for complete weed control from emergence to 60 day PHI. REI: 4 hrs
Weedmaster®	3.87 lb. a.i.	WW, SW, DW, B, O	<u>Early Season Applications:</u> <u>Fall Seeded (after tillering begins, prior to joint) .5-1 pt.</u> <u>Spring Seeded (after tillering, before 6-leaf stage) .5-1 pt.</u> <u>Specific Use Program:</u> <u>(after tillering begins for suppression of perennial weeds)</u> Up to 1.33 pts.	Do not use if crop is under stress.
WideMatch® or Colt AS	1.5 lb. a.i.	WW, SW, DW, B, O	1-1.33 pts.†	†Rate dependent on weed species and stage of growth. Apply to cereal grains when crop is 3-leaf stage up to flag leaf emergence to weeds less than 4" tall or vining. Many tankmix partners available. Refer to label.
Wolverine™ Advanced	1.38 EC	WW, SW, DW, B	1.7 pts.	Apply for the control of wild oat, green and yellow foxtail, volunteer foxtail millets and corn, barnyardgrass, and most annual broadleaf weeds. Do not plant lentils for 18 months after application of Wolverine in MN, MT, ND, and SD.
Zidua	85% WG	WW, SW,	1-2 oz	Apply early POST from spiking to 4-tillers. Does not control emerged weeds.

\*WW - Winter Wheat, SW - Spring Wheat, DW - Duram Wheat, B - Barley, O - Oats



## NOTES





**Loveland**  
**PRODUCTS**

*Sorghum Herbicides*





## SORGHUM-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre		Comments
Abundit Extra + AMS	3.0 lb. gly. acid	16-32 fl. oz. + 8.5-17 lbs./100 gal.		Rate depends on weed species and stage of growth. Refer to the label for specific recommendations. Apply preplant, at-plant, or preemergence. Many tankmix partners are recommended on the label.
<b>RU</b> Atrazine or <b>RU</b> Atrazine	4L  90WDG	<u>Highly Erodible Soil - 30%+ plant residue†</u> 4 pts. <u>Not highly Erodible Soil - &lt;30% plant residue†</u> 3.2 pts. or <u>Highly Erodible Soil - 30%+ plant residue†</u> 2.2 lbs. <u>Not highly Erodible Soil - &lt;30% plant residue†</u> 1.8 lbs.		†Medium and fine textured soils only with at least 1% OM. Conservation tillage program. ††Medium and fine textured soils only with at least 1% OM. Conventional tillage program. <b>PPI:</b> Broadcast in the spring after plowing. Application may be made before, during or after final seedbed preparation. For best results, apply within 2 weeks prior to planting. For use in certain states only. <u>Preplant Surface Applied:</u> Use on medium and fine textured soils with minimum tillage systems in certain states only up to 45 days prior to planting. Preemergence or At-planting: Apply during or shortly after planting, but prior to crop or weed emergence. <u>Wheat-Sorghum-Fallow Cropping Systems:</u> To control annual broadleaf and grass weeds following wheat harvest and in the following sorghum crop, when grown under minimum tillage, broadcast 4.5 pts./A of Atrazine 4L or 2.5 lbs./A of Atrazine 90WDG to wheat stubble immediately following wheat harvest.
<b>RU</b> Bicep II MAGNUM or <b>RU</b> Cinch ATZ	5.5 lb. a.i.	<u>Early Preplant, Single Application†</u>  <u>1%+OM</u> 2.1 qts.†† <u>1%+OM</u> 2.1-2.58 qts.†††		†Seed must be treated with Concep®. ††Medium and fine textured soils only. This rate is for highly erodible land and soil coverage with plant residue of <30% at planting. Split application rates available, refer to label.
		<u>Preplant Surface, PPI or Preemergence†,†††</u>  <u>Medium &gt;1%OM</u> <u>Fine &gt;1%OM</u>		†††Medium and fine textured soils only. This rate is for highly erodible land with soil coverage from plant residue 30%- at planting and conservation tillage is practiced. Also for application to land that is not highly erodible. Split application rates available, refer to label.
		1.6-2.1 qts.	1.6-2.1 qts.	††††Where applications are made to coarse soils more than 7 days before planting, different rates are to be used. Refer to label. <u>Early Preplant:</u> For minimum and no-till systems only. May be applied up to 45 days before planting grain sorghum in IA, IL, eastern KS, MO, NE, and SD. Use only split applications for treatments made 30-45 days before planting with 66% of the recommended rate applied initially and the remaining 33% at planting. Applications made 30 days prior to planting may be made as either a split or single application. <u>Preplant Surface:</u> Apply uniformly to the soil surface within 14 days before planting. <u>PPI:</u> Apply to the soil and incorporate into the top 2" of the soil within 14 days before planting. <u>Preemergence:</u> Apply to the soil at planting (behind the planter) or after planting, but before weeds or crop emerge.

## SORGHUM-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Callisto®	4SC	6.0-6.4 fl. oz. (do not use on forage sorghum, sudangrass, sorghum-sudangrass hybrids, or dual purpose sorghum)			Callisto can be applied preemergence or preplant non-incorporated up to 21 days before planting. Do not apply to coarse textured soils. Applying Callisto less than 7 days before increases risk of crop injury. Do all possible to minimize disturbance of treated soil during the planting process. See label for further instructions and restrictions.
<b>RU</b> FulTime NXT	4.04 CS	Coarse      Medium      Fine			Can be applied PPI, PRE or POST. FulTime® NXT must be made at a PPI or PRE timing only to grain sorghum planted with seed that has been properly treated with seed protectant or safener. POST treatments prior to 11 inches in height
<b>RU</b> Degree Xtra®	4 ME	Coarse	Medium	Fine	<ul style="list-style-type: none"> <li>PPI, PRE, or POST</li> <li>Seed MUST be properly treated with a Safener with PPI and PRE applications</li> <li>Use higher rate range for heavy weed infestation</li> <li>DO NOT use PPI in Coarse Soils</li> </ul>
Dual II MAGNUM or Cinch	7.64 lb. a.i. 7.64E	Preplant Surface†, †† Coarse      Medium      Fine			<p>†Seed must be Concep treated.</p> <p>††For minimum till or no-tillage systems only; may be applied up to 45 days before planting in CO, IA, IL, KS, MO, NE and SD.</p>
		PPI and Preemergence† Coarse      Medium      Fine			<p>†††Apply not more than 2 weeks prior to planting. Preplant Surface, PPI or PRE. See label for recommended tankmixes.</p> <p>Use only split applications for treatments made 30-45 days before planting. Refer to label for rates.</p>
<b>RU</b> Gramoxone SL 2.0	2L	2-4 pts.† + 2 qts./100 gal.			<p>†Rate dependent on weed stage of growth, refer to label.</p> <p>Preplant or Preemergence application.</p>
<b>RU</b> Lexar EZ	3.7 lb. a.i.	3 qts.			For preplant or PRE use in grain sorghum. Seed must be treated with Concep III. Do not apply to sorghum grown on sandy soils. Apply up to 21 days preplant. Split application option available. Refer to label for split application use rates, precautions and other information. Tankmix with Gramoxone SL or Touchdown to assist in burndown of existing weeds.
<b>RU</b> Lumax EZ	3.95 lbs./gal.	2.5 qts.			Seed must be treated with Concep III. For use in KS and NE only. Use on medium and fine textured soils. Do not apply to sorghum grown on sandy soils. Apply up to 21 days preplant. Split application option available. Refer to label for split application use rates, precautions and other information. Tankmix with Gramoxone SL or Touchdown to assist in burndown of existing weeds or with atrazine for residual control.



## SORGHUM-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Outlook†	6 lb. a.i. (6EC)	Coarse††  ≤3%OM 12-14 ozs. 3%+OM 14-18 ozs.	Medium††  ≤3%OM 14-18 ozs. 3%+OM 18-21 ozs.	Fine††  ≤3%OM 14-18 ozs. 3%+OM 18-21 ozs.	†Only apply to sorghum that has been properly treated with seed safeners. ††Use lower rate in rate range for coarsely textured soils lower in OM and higher rates for more finely textured soils that are high in OM. Refer to label for reduced rate programs. <b>Early Preplant Applied:</b> Apply 15-45 days prior to planting, use the highest rate specified for the specific soil type. Not recommended for coarse textured soils in certain areas; refer to label for details. May be applied as a split application; refer to label. <b>Preplant Surface Applied:</b> For use in minimum tillage or no-till-age production systems, apply up to 45 days prior to planting. <b>PPI:</b> Incorporate into the upper 1-2" of soil up to 14 days before planting. <b>Preemergence Surface Applied:</b> For best performance, make application within 5 days of last preplant tillage. Outlook label provides many suggested tank-mix partners including atrazine, Fallow Master, Clarity (Strut), glyphosate, Laddok S-12 and others.
Roundup WeatherMAX or Roundup PowerMAX + AMS	5.5S	16-32 fl. oz.†  + 8.5-17 lbs./100 gal.			†Rate depends on weed species and stage of growth. Apply preplant, at-plant or preemergence. Many tankmix partners are recommended on the label.
Sharpen® + MSO† + AMST† or UAN†	2.85 SC	1-2 ozs. + 1 gal./100 gals. + 8.5 to 17 lbs./100 gals. or 1.25 to 2.5 gals./100 gals.			†For optimal burndown activity. For broadleaf weed control, may apply preplant or PRE. Refer to the label for activation instructions, recommended tankmix partners, and other details. 1 hour rainfast.
Touchdown Hi-Tech + NIS + AMS	5 lb. gly. acid	9.6-48 ozs.† + 1-2 qts./100 gal. + 8.5-17 lbs./100 gal.			†Refer to label for use rates for specific weeds and their stage of growth (weed height).
Touchdown Total or Touchdown CT + AMS	4.17 lb. gly. acid	24-48 ozs.† + 8.5-17 lbs./100 gal.			†Refer to label for use rates for specific weeds and their stage of growth (weed height).

## SORGHUM-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Verdict® + MSO† + AMS†† or UAN	5.57 EC	See 'Comments' for state specific rate recommendations. + 1 gal./100 gal. + 8.5 to 17 lbs./100 gal. or 1.25 to 2.5 gals./100 gal.	†Refer to label for details. ††For optimum burndown activity. Apply preplant surface, PPI and PRE. Seed MUST be safened for chloracetanilides. <b>SD and NE:</b> 10-18 ozs./A based on soil texture. Do not use on soils with ≤1.5% OM. All other states: 10 fl oz. Also include Outlook herbicide at 4 - 10 fl oz (coarse soils) or 6 - 12 fl oz (medium and fine soils) plus a labeled rate of atrazine for the soil type.
Warrant®	3 ME	Coarse      Medium      Fine <1.5%OM 1.5-2.25 qts. ≥1.5%OM 2-2.5 qts.  <1.5%OM 1.5-2.25 qts. ≥1.5%OM 2-3 qts.  <1.5%OM 1.5-2 qts. ≥1.5%OM 2.25-3 qts.	<ul style="list-style-type: none"> <li>PPI, PRE, or POST</li> <li>Seed MUST be properly treated with a Safener with PPI and PRE applications</li> <li>Use higher rate range for heavy weed infestation</li> </ul>

## SORGHUM-POSTEMERGENCE

    AAatrex or Atrazine or AAatrex or Atrazine + COC or Emulsifiable Oil	4L 4L  4L 4L	4 pts.†  or 2.4 pts.††  + 1 qt. or 1 gal.	<p>†If no atrazine was applied prior to sorghum emergence, apply a maximum of 4 pts./A of AAatrex 4L or atrazine 4L broadcast. If a postemergence treatment is required following an earlier atrazine application, the total atrazine applied may not exceed 2.5 lbs. a.i. (5 pts. of AAatrex 4L or atrazine 4L)/A calendar year.</p> <p>††Rate is for postemergence broadleaf weed control with oil concentrate or emulsifiable oil in water. Refer to label for recommended sorghum growth stage for this application. The 2.4 pts./A rate is also recommended for postemergence broadleaf control with a surfactant in certain states only on specific soil types. Refer to the label for those details. Apply before weeds exceed 1.5" in height and before sorghum exceeds 12" in height. Atrazine may provide partial control of grasses. Do not apply to sand or loamy sand soils, or injury may occur.</p>
Aim + NIS	2EC	.5-1 oz.† + 2 pts./100 gal.	<p>†Use higher rates in the rate range when weeds are under stress or larger.</p> <p>Add NIS if used with other programs that do not contain a surfactant. No delay for planting. Apply to sorghum up to the 6-leaf growth stage.</p>
Ally XP + 2,4-D amine	60 DG	1/20 oz. + 1/2 pt.	<p>For use on irrigated or dryland grain sorghum in Colorado, Kansas, Nebraska, Oklahoma and Texas (North of I-20).</p> <p>Apply ALLY® XP plus 2,4-D amine when grain sorghum is 3 to 15 inches in height. If sorghum is taller than 10 inches to the top of the canopy, use drop nozzles and keep spray off the foliage. Apply only before the boot stage.</p>
Banvel or Rifle or Clarity or Strut	4 lb. a.i. 4 SL	.5 pt.	<p>Apply from spike stage (all sorghum emerged) but before crop is 15" tall (use drops when sorghum is &gt;8" tall). For best performance, apply when the crop is in the 3 to 5 leaf stage and weeds are small. Do not apply if temperature exceeds 85° F.</p>

## SORGHUM-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Basagran + COC + UAN or AMS	4L	1-2 pts.† + 1-2 pts. + 2-4 pts. or 1-2 lbs.	†Consult the label for rate to use based on weed and stage of growth at application. See label for special control recommendations on annual morningglories, Canada thistle and yellow nutsedge. Apply when broadleaf weeds are small and actively growing (2-4"). Apply in 10-20 gals. of water at minimum nozzle PSI of 40 lbs. Do not cultivate within 5 days before or after application. Rainfast in 4 hours. Recommended tank-mix partners include: atrazine, Clarity/Strut, Frontier, Marksman, Rifle Plus or Paramount.
 Brozine	3 lb. a.i.	<u>3-leaf to prior to preboot or 12" height, whichever occurs first</u> 1.5-2 pts. <u>4-leaf to prior to preboot or 12" height, whichever occurs first</u> 3 pts.	This product contains 0.25 lb. a.i./pt. Where there has been no previous atrazine soil application to the crop, if Brozine is applied postemergence with appropriately registered products containing atrazine, the total amount of atrazine applied cannot exceed 2 lb. a.i./A. Where a previous soil application of atrazine has been made to the crop, if Brozine is applied postemergence with appropriately registered products containing atrazine, the total amount of atrazine applied cannot exceed 2.5 lb. a.i./A/calendar year. PHI = 45 days.
Buctril or Broclean	2EC	1-1.5 pts.	Apply to sorghum up to 14" in height when weeds are small, refer to label for maximum weeds heights. Spraying before the 5" stage may inhibit root development. Recommended tankmix partners include: atrazine, Banvel, and 2,4-D. Spraying without drop nozzles after 8" through early boot may inhibit head development.
Degree Xtra®	4 ME	Coarse      Medium      Fine <1.5%OM 2-2.5 qts. ≥1.5%OM 2.3-2.9 qts. ≤1.5%OM 2-2.5 qts. ≥1.5%OM 2.3-2.7 qts. <1.5%OM 2-2.9 qts. ≥1.5%OM 2.5-3.7 pts.	<ul style="list-style-type: none"> <li>PPI, PRE, or POST</li> <li>Seem MUST be properly treated with a Safener with PPI and PRE applications</li> <li>Use higher rate range for heavy weed infestation</li> <li>DO NOT use PPI in Coarse Soils</li> </ul>
Facet® L + COC or MSO† or NIS†† + AMS	1.5L	22-32 oz. + 2 pints or 1 - 2 pints or 0.25% v/v + 2.5 lbs	Apply from preemergence up to 12" tall for bindweed and morningglory control. For best annual grass control, tank-mix with 0.5-1.0 lb ai atrazine when weeds are less than 2" tall. Other tank-mix options include Clarity and 2,4-D. †Use MSO for optimum burndown of labeled weeds. ††Use NIS when tank-mixing with herbicides that do not allow oil adjuvants.
 FulTime NXT	4.04 CS	Coarse      Medium      Fine <1.5% OM 2.0-2.5 qts ≥1.5% OM 2.3-2.9 qts ≤1.5% OM 2.0-2.5 qts ≥1.5% OM 2.3-3.7 qts <1.5% OM 2.0-2.9 qts ≥1.5% OM 2.5-3.7 qts	Can be applied PPI, PRE or POST. FulTime® NXT must be made at a PPI or PRE timing only to grain sorghum planted with seed that has been properly treated with seed protectant or safener. POST treatments prior to 11 inches in height



Product	Formulation	Rate Per Acre	Comments
Huskie	29.6% EC	12.8-16 oz.	Apply to actively growing grain sorghum (to include grain and forage) between 3 leaf stage of growth up to 12 inches. Crop tolerance is best when applied to actively growing grain sorghum.
<b>RU</b> Laddok S-12 + COC or UAN or AMS	5F	1.33-2.33 pts. + 1 qt. or 2-4 qts. or 2.5 lbs.	Labeled up to 12" tall sorghum. Apply to annual and certain perennial broadleaf weeds and yellow nutsedge. Consult the label for rate based on type of weeds to control and their stage of growth at application. Apply in a minimum of 20 gals. of water at 40 PSI minimum. Do not cultivate within 5 days before or 5 days after application. Consult label for crop rotation and carryover restrictions. Rainfall shortly after application could reduce control.
Peak + COC	57%WDG	.5-1 oz. + 1-4 pts.	Apply to sorghum from 5" to 30" tall and prior to head emergence. Post direct over 20" using drop nozzles. See label for weed heights. In northern regions use only 0.5 oz./A with certain crop rotations, or on high pH, low OM soils. Refer to label for restrictions and use precautions.
<b>RU</b> Peak + atrazine† or atrazine† or Banvel/Rifle or Buctril/Bro-clean or Rifle Plus or 2,4-D + NIS	57%WDG 4L 90DF 4 lb. a.i. 2L 3.2F 4EC	.5-.75 oz. + .75-1 qt. or .85-1.1 lbs. or .25-.5 pt. or .5-1 pt.  or 1-2 pts.†† or .25-.5 pt. + 1-2 qts./100 gal.	†Use COC (1-4 pts.) only. ††See label for restrictions. See product labels for proper application timing and drop nozzle (directed spray) needs.
Permit + NIS or COC	75%	.66-1 oz. + 1-2 qts./100 gal. or 1 gal./100 gal.	Apply from 2-leaf through layby stage (before grain head emergence). Allow 30 days before grazing or harvesting following application.
Permit + Buctril or Broclean or 2,4-D Amine + NIS	75% 2L 4L	.66 oz. + .5-1 pt.  or .25-.5 pt.  + 2 qts./100 gal.	Refer to the Permit label and tankmix partner labels for application timing.



## SORGHUM-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments	
Prowl® H2O	3.8CS	Coarse	Medium	Fine	Apply postemergence (CULTI-SPRAY) incorporated. Labeled in some southern states for early postemergence application. Refer to label for use geography. Rates listed are for northern states. Apply when sorghum is 4 inches tall up to last cultivation.	
		2 pts.	3 pts.	3 pts.		
Prowl or Stealth	3.3EC	Coarse	Medium	Fine	†Rates provided are for northern states only. Refer to label for rates for southern states and for use map. Post-plant incorporated. Apply when sorghum is 4" tall up to last cultivation at layby of grain sorghum. Must be applied before the crop is 12" tall. May tankmix with 1 qt./A of atrazine 4L culti-spray, do not apply this tank mixture on coarse soils.	
		1.8-2.4 pts.†	2.4-3.6 pts.†	2.4-3.6 pts.†		
RU Rifle Plus	3.2F	1.5-2 pts.			Apply to sorghum when in the 2-3 leaf stage, if possible, and up to the 5-leaf stage (2-8" tall). Refer to label for split application options. Do not add any surfactants. Do not apply to sorghum for seed production. See label for tankmixes.	
Starane Ultra	2.8 lbs. ae	.4 pts.			Apply from the 3-leaf growth stage of grain sorghum through the 7-leaf stage. For control of broadleaf weeds.	
Warrant®	3 lb. a.i. ME	Coarse	Medium	Fine	<ul style="list-style-type: none"> <li>PPI, PRE, or POST</li> <li>Seem MUST be properly treated with a Safener with PPI and PRE applications</li> <li>Use higher rate range for heavy weed infestation</li> </ul>	
		<1.5%OM 1.5-2.25 qts. ≥1.5%OM 2-2.5 qts.	≤1.5%OM 1.5-2.25 qts. ≥1.5%OM 2-3 qts.	<1.5%OM 1.5-2.5 qts. ≥1.5%OM 2.25-3 qts.		
Yukon + NIS or COC	67.5%WSG	<u>2-8" tall sorghum</u> 4-6 ozs.† <u>8-15" tall sorghum††</u> 4-6 ozs.† + 1-2 qts./100 gal. or 1 gal./100 gal.			†of product by weight. ††Use drop nozzles (directed spray). Can be applied from 2-leaf through 15" tall sorghum. Use drop nozzles if sorghum is taller than 8". Best if applied to 3-5 leaf sorghum and when weeds are small. Do not apply to sorghum grown for seed production.	
		<u>6-8" tall sorghum</u> .66-1 pt. <u>8-15" tall sorghum†</u> 1 pt.  or <u>5-15" tall sorghum†</u> <u>Annual broadleaves</u> .5 pt. <u>Perennial broadleaves</u> .66-1 pt. or <u>6-8" tall sorghum</u> .25-1 pt. <u>8-15" tall sorghum†</u> .5-1 pt. or <u>6-8" tall sorghum†</u> 3.2-9.6 ozs. <u>8-15" tall sorghum†</u> 4.8-9.6 ozs.				
2,4-D Amine 4 or 2,4-D LV4 or Saber or Salvo	3.8 lb. a.i.	<u>6-8" tall sorghum</u> .66-1 pt. <u>8-15" tall sorghum†</u> 1 pt.			†Use drop nozzles (directed spray) when crop is 8" or taller. Refer to label for crop stage of growth application restrictions.	
	3.8 lb. a.i.	or <u>5-15" tall sorghum†</u> <u>Annual broadleaves</u> .5 pt. <u>Perennial broadleaves</u> .66-1 pt. or <u>6-8" tall sorghum</u> .25-1 pt. <u>8-15" tall sorghum†</u> .5-1 pt. or				
	3.8 lb. a.i.	<u>6-8" tall sorghum†</u> 3.2-9.6 ozs. <u>8-15" tall sorghum†</u> 4.8-9.6 ozs.				
	5 lb. acid					



## NOTES





**Loveland**  
*PRODUCTS*

*Sugar Beet  
Herbicides*





# SUGAR BEETS-PREPLANT AND/OR PREMERGENCE



Product	Formulation	Rate Per Acre	Comments
Eptam®	7E	<u>Fall Application (MN, ND)†</u> Coarse      Medium      Fine 4.5 pts.    5.25 pts.   5.25 pts.  <u>Preplant (IA, ea, NE, ND, SD, MN, MI)</u> Coarse      Medium      Fine 2.25 pts.   3.5 pts.    3.5 pts.	†Rates according to geographical region and soil characteristics. Refer to label. Apply low rates on light soils, and high rates on medium and heavy soils. In spring, apply to dry soil and incorporate immediately 2-3" deep. In fall, incorporate before the ground freezes. Weak on mustard. May be impregnated on dry fertilizer.
Far-Go or Far-Go	4E	1.5 qts. or 15 lbs.	PPI in spring or fall.
Far-Go	10G		
Gramoxone SL 2.0 + NIS or COC	2L	2-4 pts.  + 1 pt./100 gal. or 1 gal./100 gal.	Apply before or after planting, but before crop emerges for the control of emerged weeds.
Norton®	4SC	<u>All Regions Except ND &amp; MN</u> Coarse      Medium      Fine 2.25-3.75 pts.   3.75-6 pts.   6-7.5 pts.  <u>ND &amp; MN Region</u> Coarse      Medium      Fine 6 pts.      6 pts.      7.5 pts.	Apply PPI 1-2" deep or PRE. Do not rotate with any other crop for 12 months. Can be mixed with liquid fertilizer. PRE provides good to excellent control of kochia.
Roundup WEATHER-MAX or Roundup PowerMAX or Duramax or Durango DMA	5.5S 5.5S 5.4S 5.4S	See label for recommended rates.	Apply to emerged weeds prior to crop emergence. Adding AMS may aid in control.
Touchdown Total + AMS	4.17 lb. a.e. LC	<u>Annual weeds†</u> 12-36 ozs. or <u>Perennial weeds†</u> .4-3.6 qts.  + 8.5-17 lbs./100 gal.	†Check label for rates; rates vary according to weed spp. and weed stage of growth. Apply to emerged weeds prior to crop emergence. Maximum rate for preplant or preemergence use is 3.6 qts./A.



## SUGAR BEETS-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Assure II or Targa + COC or NIS or MSO + UAN	.88 lb. a.i.	5-12 ozs. + 4 pts./100 gal. or 1 qt./100 gal. or 1 gal./100 gal. + 2 qts.			Reduction in grass control is possible when Assure II or Targa is applied immediately prior to or sequentially after an application of a broadleaf herbicide. PHI= 45 days. Do not apply more than 4 applications/season at intervals no less than 7 days apart. Do not apply to stressed plants.
Dual MAGNUM	7.62E	Coarse	Medium	Fine	Apply postemerge after sugar beets have reached the 1-true leaf stage. However, Dual MAGNUM will only control weeds that have not yet emerged. Another appropriately labeled herbicide would need to be used for emerged weeds. May be tankmixed with microrates. Do not apply tankmixed with strobiluron fungicides or following soil applied Nortron.
		1 pt.	1.33 pts.	1.67 pts.	
Dual II MAGNUM	7.64E	Coarse	Medium	Fine	Apply postemerge after the sugar beets have reached the first true leaf stage. Weeds emerged at time of application will not be controlled. See label for further instructions and restrictions.
Durango DMA or Duramax + AMS	5.4 S	Emergence to 8-leaf: Up to 36 fl oz			POST on Roundup Ready sugar beets only. No more than 5.75 qts./A/year for all applications (including soil applications). Up to four sequential applications may be made. Apply between emergence and canopy closure. Allow at least 10 days between applications. PHI = 30 days.
	4 lb ae	8-leaf to Canopy Closure: Up to 24 fl oz. + 8.5-17 lbs./100 gal.			
Eptam or Eptam	7E	3.5 pts. (incorporated)† or Irrigation: 2.25-3.5 pts.†,††			†Apply to beets after thinning and clean cultivation. ††At post-thinning, meter into irrigation water after thinning and after last cultivation. Incorporate to a depth of 2-3". Regional rates, refer to label.
Fusilade DX + COC or NIS	2L	4 - 6 oz/A with glyphosate for control of Volunteer Corn + 0.5-1 gal./100 gal. or 1-2 qts./100 gal.			Do not apply a total of more than 48 fl. oz. of Fusilade DX Herbicide per acre per season to sugar beets. Do not apply more than 24 fl. oz. of Fusilade DX Herbicide per acre per application. Maintain a minimum of 14 days between applications. Do not harvest sugar beets within 90 days of last application.
		6-16 ozs.† + 1 qt.			
Intensity + COC	2 EC	6-16 ozs.† + 1 qt.			†A 4 ozs./A rate is recommended under certain circumstances. Refer to label. Always use a COC. The addition of AMS has shown improved grass control for difficult to control species. Refer to label. PHI= 40 days. See label for directions and restrictions on its usage. See label for information on tankmixes that include: Betamix, Betanex, and Stinger.
Mad Dog Plus	4 lb. a.i.	<u>Emergence to 8-leaf</u> Up to 1.5 qts. <u>8-leaf to Canopy Closure</u> Up to 1 qt.			POST on Roundup Ready sugar beets only. No more than 8 qts./A/year for all applications (including soil applications). Up to four sequential applications may be made. Apply from emergence to 30 days prior to harvest. Allow at least 10 days between applications.
Makaze or Makaze Yield Pro	4 lb. a.i.	<u>Emergence to 8-leaf</u> Up to 1.5 qts. <u>8-leaf to Canopy Closure</u> Up to 1 qt.			POST on Roundup Ready sugar beets only. No more than 8 qts./A/year for all applications (including soil applications). Up to four sequential applications may be made. Apply from emergence to 30 days prior to harvest. Allow at least 10 days between applications. Makaze Yield Pro contains IBA and kinetin which promotes plant health for increased yields.



## SUGAR BEETS-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Norton	4 SC	0.5-3 pt.			Residual and foliar tank mix with glyphosate on RR sugarbeets. Good control of pigweeds and Kochia. REI: 12 hrs PHI: 90 days Max/year: 1 gal
Outlook	6EC	Coarse      Medium      Fine			Apply at layby after sugar beets have reached the 2-leaf stage, but prior to the 12-leaf stage. A total of 24 oz./A may be used if split applied in two applications, no closer than 14 days apart.
		12-18 ozs.	18-21 ozs.	18-21 ozs.	
Poast  + COC or MSO + AMS or UAN	1.5 EC	<u>Annual Grasses†</u> 1-2 pts. <u>Perennial Grasses†</u> 1.5-2.5 pts. + 2 pts. or 1.5 pts. + 2.5 lbs. or 4-8 pts.			†Regional rates provided on label. Special early season application option at lower rate of .5-.75 pts./A. Also, split application recommendations for perennial weeds such as quackgrass are available; refer to label for details.
Roundup WEATHER-MAX or Roundup PowerMAX + AMS	5.5S	<u>Emergence to 8-leaf</u> Up to 32 ozs. <u>8-leaf to Canopy Closure</u> Up to 22 ozs. + 8.5-17 lbs./100 gal.			POST on Roundup Ready sugar beets only. No more than 5.3 qts./A/year for all applications (including soil applications). Up to four sequential applications may be made. Apply between emergence and canopy closure. Allow at least 10 days between applications. PHI= 30 days.
Select Max or Intensity One + NIS	1EC	<u>Perennial Grasses</u> 12-32 ozs. <u>Annual Grasses</u> 9-12 ozs. + 1 qt./100 gal.			PHI=40 days. Refer to label for directions, restrictions and information on tankmixing that includes Betamix, Betanex and Stinger.
Sequence  + AMS	5.25 EW	Coarse      Medium      Fine 2.5 pts.†   2.5-3 pts.†   2.5-3 pts.†			†Rates for beets in 2 true-leaf stage to the 8 true-leaf stage; also based on weed spp. and weed stage of growth.
		Coarse      Medium      Fine 2.5 pts.††   2.5 pts.††   2.5 pts.†† + 8.5-17 lbs./100 gal.			††Rates for beets 8 true-leaf stage to canopy closure; also based on weed spp. and weed stage of growth. POST on glyphosate tolerant beets only. Apply from 2 true-leaf stage to canopy closure. Apply no more than a total of 5.7 qts./A/season from all applications. Allow 10 days between applications. PHI=60 days.



## SUGAR BEETS-POSTEMERGENCE



Product	Formulation	Rate Per Acre			Comments
Stinger	3S	<u>Annual Weeds</u> .25-.5 pt. <u>Perennial Weeds</u> .5-.66 pt.			Apply from cotyledon to 8-leaf stage of beets. Check label for rates and weed size. Tankmixes include: Betamix, Betanex, Durango DMA and Duramax, UpBeet®, Intensity, and Poast. PHI=45 days. Check label for rotational restrictions.
Trifluralin	4EC	Coarse		Medium	Fine
		1 pt.		1.25-1.5 pts.	1.25-1.5 pts.
UpBeet + COC or NIS	50DF	 .5-1 oz. + 1 gal./100 gal. or 1 qt./100 gal.			Apply to beets anytime after planting. For best results, apply to weeds from cotyledon to 2nd true leaf stage. Application when crop is under stress may result in injury. Field may be replanted to corn after 21 days and to other crops after 14 days. May be tankmixed with Stinger or glyphosate on Roundup Ready sugar beets.
UpBeet	50 DF	<u>Cotyledon Stage</u> .5 oz.			Apply when weeds are between cotyledon and 4 true-leaf stage (less than 2" tall or across). For best results on the broadest spectrum of weeds, use a minimum of 2 sequential applications of UpBeet tankmixed with Betamix or Betanex. Applications should be made 5-10 days apart or as weeds germinate. Use a close sequential application if first application was on weeds with 4 leaves. Stinger herbicide may be tankmixed for additional broadleaf control. No additional surfactant needed with these tankmixes.
Warrant®	3 ME	Coarse			Apply postemergence to sugar beets from the 2 leaf up to the 8 leaf stage. Can mix with Roundup Brands in Roundup Ready Sugar beet. For more information and restrictions, refer to the Warrant supplemental labeling.
		<1.5%OM 1.25-1.6 qts.	≤1.5%OM 1.25-1.7 qts.	<1.5%OM 1.25-1.9 qts.	
		>1.5%OM 1.25-1.7 qts.	≥1.5%OM 1.25-1.9 qts.	>1.5%OM 1.25-2.0 qts.	

## NOTES



**Loveland**  
PRODUCTS

*Sunflower Herbicides*





## SUNFLOWER-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments
		Coarse	Medium	Fine	
Broadaxe	7 EC	<1.5% OM 19-21 ozs. 1.5 - 3% OM 19-25 ozs. >3% OM 21-25 ozs.	<1.5% OM 19-25 ozs. 1.5 - 3% OM 21-32 ozs. ≥3% OM 25-32 ozs.	<1.5% OM 21-30 ozs. 1.5 - 3% OM 25-32 ozs. ≥3% OM 32-38.7 ozs.	May be applied PPI, or preemergence within 3 days after planting. Do not use on soils classified as sand with less than 1% OM. Plant sunflowers 1.5" deep and completely cover with soil. See label for details on other restrictions and weeds controlled.
Dual MAGNUM	7.62E	Coarse  ≤3%OM 1-1.33 pts. ≥3%OM 1.33 pts.	Medium  <3%OM 1.33-1.67 pts. ≥3%OM 1.33-1.67pts.	Fine  ≤3%OM 1.33-1.67 pts. ≥3%OM 1.67-2 pts.	Use the higher rate in the rate range if heavy weed pressures are expected. For control of broadleaf weeds, may tank mix with Spartan Herbicide.
Dual II MAGNUM	7.64E	Coarse  ≤3%OM 1-1.33 pts. ≥3%OM 1.33 pts.	Medium  ≤3%OM 1.33-1.67 pts. ≥3%OM 1.33-1.67pts.	Fine  ≤3%OM 1.33-1.67 pts. ≥3%OM 1.67-2 pts.	Within the rate ranges given, use the higher rate if heavy weed infestations are expected.
Durango DMA or Duramax + AMS	5.4 S  4 lb ae	Up to 24 fl oz  + 8.5-17 lbs./100 gal.			Apply preplant or preemergence to control emerged weeds.
Eptam	7EC	<u>Spring Application:</u> 2.5-3.5 pts.† <u>Fall Application:</u> †† Coarse 4.5 pts.			†For spring use in CO, KS, NE, MN, ND, & SD. Incorporate immediately after application. ††For use in MN and ND. Apply and incorporate in late fall before the ground freezes. Use lower rate on lighter soils.
+ Trifluralin HF	7EC  4EC	For Eptam, see rates, recommendations and details above in application alone. + Coarse† 1 pt.			†Refer to label for rates for soils with 2-5% OM. Apply in fall or spring before planting and incorporate immediately. See Eptam and Trifluralin HF labels for more detailed instructions.
Gramoxone SL 2.0 + NIS	2.0L	2.5-4 pts.  + 1 pt./100 gal.			Apply before, during or after planting but before the crop has emerged for control of emerged weeds.
Prowl® H2O	3.8CS	Coarse  ≤3%OM 2 pt. ≥3%OM 2 pt.	Medium  2.5 pt. ≥3%OM 3 pt.	Fine  3 pt. ≥3%OM 3 pt.	May be applied PPI or PRE (immediately after planting). Apply up to 60 days prior to planting and incorporate. Fall PPI may be made in MN, ND and SD only. May be applied PRE within two days after planting in conventional tillage sunflowers. Refer to label for southern states rates. Rates listed are for northern states. Do not apply postemergence and do not feed forage or graze livestock in treated fields.

RU



## SUNFLOWER-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre			Comments	
Prowl or Stealth	3.3EC	Spring Application†			†Regional rates. ††For use only in ND, SD, and MN. PPI apply up to 60 days prior to planting and incorporate within 7 days of application. Do not use on peat or muck soils. Do not feed forage or graze livestock in treated fields. May be applied as a preplant surface or preemergence treatment in no-till sunflowers in CO, KS, MN, NE, ND, OK, SD and TX. May be applied preemergence in conventional tillage sunflowers in CO, KS, MN, NE, ND or SD. Application and incorporation should be made in the late fall when soil temperatures are 45 degrees F or below, but before the ground freezes. Do NOT apply when the air temperature is below 45 degrees F. Incorporation is needed in the fall and again in the spring.	
		Coarse	Medium	Fine		
	7EC	<3%OM 1.2-2.4 pts.	>3%OM 1.8-3 pts.	<3%OM 2.4-3.6 pts.		
		>3%OM 2.4 pts.	>3%OM 3-3.6 pts.	>3%OM 3.6 pts.		
Prowl or Stealth  + Eptam	3.3EC	Fall Application††			†For use in ND, SD & MN only. Immediately incorporate in late fall prior to ground freezing. Prior to planting in the spring, a light incorporation is necessary.	
		Coarse	Medium	Fine		
	7EC	<3%OM 1.2-2.4 pts.	>3%OM 1.8-3 pts.	<3%OM 2.4-3.6 pts.		
		>3%OM 2.4 pts.	>3%OM 3-3.6 pts.	>3%OM 3.6 pts.		
Roundup WEATHER-MAX or Roundup PowerMAX + NIS (PowerMAX Only) + AMS	5.5S	Up to 22 ozs.			Apply preplant or preemergence to control emerged weeds.	
	5.5S	or Up to 22 ozs.				
		+ 1-2 qts./100 gal.				
		+ 8.5-17 lbs./100 gal.				
Sequence		Up to 2.75 pts.			Make only 1 application. Do not graze or feed forage. The addition of AMS may improve control. Avoid contact with sunflower foliage. Tankmix options include: Eptam, Prowl and trifluralin.	
Sonalan HFP or Sonalan	3 EC	Coarse	Medium	Fine	†Fall application with dry bulk fertilizer only. ††Higher rates are available for ground-cherry or nightshade control. For 10G, a second incorporation should be made 3-5 days after the first incorporation. Incorporate as soon as possible, but within two days of application. Use incorporation equipment that uniformly mixes into the top 2-3" of soil.	
	10G	1.5-2 pts.† or 5.5-7.5 lbs.††	2-2.5 pts.† or 7.5-9.5 lbs.††	2.5-3 pts.† or 9.5-11.5 lbs.††		
Sonalan HFP + Eptam	3 EC	1.25-3 pts.			For use only in CO, KS, NE, MN, ND, and SD. Apply and immediately incorporate prior to planting in the spring.	
	7 EC	+ 2.5-3.5 pts.				
Spartan	4F	Coarse†	Medium†	Fine†	†Use higher rates for soils of pH less than 7.0 and lower rates for pH greater than 7.0 within the rate range. For fall, early spring preplant, and spring preemergence and PPI applications. Maybe tankmixed with Prowl or Stealth at rates for control of other grass and broadleaf weeds. Do not incorporate.	
		<1%OM 3-3.75 ozs. 1-3%OM 3-4.5 ozs. ≥3%OM 3.75-6 ozs.	<1%OM 3-4.5 ozs. 1-3%OM 3.75-6 ozs. ≥3%OM 4.5-6.75 ozs.	<1%OM 3.75-5.25 ozs. 1-3%OM 4.5-6.75 ozs. ≥3%OM 6-8 ozs.		



## SUNFLOWER-PREPLANT AND/OR PREEMERGENCE



Product	Formulation	Rate Per Acre	Comments																												
Spartan Charge + NIS or COC or MSO	3.5 lbs. a.i.	<table border="1"> <thead> <tr> <th></th><th>Coarse</th><th>Medium</th><th>Fine</th></tr> </thead> <tbody> <tr> <td>&lt;1.5%OM</td><td>&lt;1.5%OM</td><td>&lt;1.5%OM</td><td></td></tr> <tr> <td>3.75-5 ozs.</td><td>3.75-5.75 ozs.</td><td>5-6.5 ozs.</td><td></td></tr> <tr> <td>1.5-3%OM</td><td>1.5-3%OM</td><td>1.5-3%OM</td><td></td></tr> <tr> <td>3.75-5.75 ozs.</td><td>5-7.75 ozs.</td><td>5.75-8.5 ozs.</td><td></td></tr> <tr> <td>&gt;3%OM</td><td>&gt;3%OM</td><td>&gt;3%OM</td><td></td></tr> <tr> <td>5-7.75 ozs.</td><td>5.75-8.5 ozs.</td><td>7.75-10.2 ozs.</td><td></td></tr> </tbody> </table>		Coarse	Medium	Fine	<1.5%OM	<1.5%OM	<1.5%OM		3.75-5 ozs.	3.75-5.75 ozs.	5-6.5 ozs.		1.5-3%OM	1.5-3%OM	1.5-3%OM		3.75-5.75 ozs.	5-7.75 ozs.	5.75-8.5 ozs.		>3%OM	>3%OM	>3%OM		5-7.75 ozs.	5.75-8.5 ozs.	7.75-10.2 ozs.		For fall application, preplant burndown, early preplant, and preemergence applications. Apply prior to planting up to 3 days after planting. Optimum control of annual and perennial weeds requires a tankmix with a broad spectrum burndown herbicide such as glyphosate, glufosinate, or paraquat. Refer to label for warnings on applying to soil with <1.5% OM or high pH soils.
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Touchdown Total or Touchdown CT/CT2 or Touchdown HiTech + NIS (HiTech only) + AMS	4.17 lb. a.i.  5 lb. gly. acid	Up to 24 ozs.  or 10-30 ozs.  + 1-2 qts./100 gal.  + 8.5-17 lbs./100 gal.	Apply preplant or preemergence.																												

## SUNFLOWER-NO-TILL

Product	Formulation	Rate Per Acre			Comments																																																						
Trifluralin  or Treflan TR-10	4EC  10G	<table border="1"> <thead> <tr> <th></th><th>Coarse</th><th>Medium</th><th>Fine</th></tr> </thead> <tbody> <tr> <td>&lt;2%OM</td><td>&lt;2%OM</td><td>&lt;2%OM</td><td></td></tr> <tr> <td>1 pt.</td><td>1.25-1.5 pts.†</td><td>1.5-2 pts.†</td><td></td></tr> <tr> <td>2-5%OM</td><td>2-5%OM</td><td>2-5%OM</td><td></td></tr> <tr> <td>1.5-2 pts.†</td><td>1.5-2 pts.†</td><td>2 pts.</td><td></td></tr> <tr> <td>&gt;5-10%OM</td><td>&gt;5-10%OM</td><td>&gt;5-10%OM</td><td></td></tr> <tr> <td>2 pts.</td><td>2 pts.</td><td>2 pts.</td><td></td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th></th><th>Coarse</th><th>Medium</th><th>Fine</th></tr> </thead> <tbody> <tr> <td>&lt;2%OM</td><td>&lt;2%OM</td><td>&lt;2%OM</td><td></td></tr> <tr> <td>5 lbs.</td><td>6.25-7.5 lbs.†</td><td>7.5-10 lbs.†</td><td></td></tr> <tr> <td>2-5%OM</td><td>2-5%OM</td><td>2-5%OM</td><td></td></tr> <tr> <td>7.5-10 lbs.†</td><td>7.5-10 lbs.†</td><td>10 lbs.</td><td></td></tr> <tr> <td>&gt;5-10%OM</td><td>&gt;5-10%OM</td><td>&gt;5-10%OM</td><td></td></tr> <tr> <td>10 lbs.</td><td>10 lbs.</td><td>10 lbs.</td><td></td></tr> </tbody> </table>		Coarse	Medium	Fine	<2%OM	<2%OM	<2%OM		1 pt.	1.25-1.5 pts.†	1.5-2 pts.†		2-5%OM	2-5%OM	2-5%OM		1.5-2 pts.†	1.5-2 pts.†	2 pts.		>5-10%OM	>5-10%OM	>5-10%OM		2 pts.	2 pts.	2 pts.			Coarse	Medium	Fine	<2%OM	<2%OM	<2%OM		5 lbs.	6.25-7.5 lbs.†	7.5-10 lbs.†		2-5%OM	2-5%OM	2-5%OM		7.5-10 lbs.†	7.5-10 lbs.†	10 lbs.		>5-10%OM	>5-10%OM	>5-10%OM		10 lbs.	10 lbs.	10 lbs.		†Use lower rate in the rate range in areas receiving less than 20" total annual rainfall and irrigation. Fall Applications: In CA, ND, SD and MN, apply and incorporate (within 24 hours) anytime between Sept. 1 and Dec. 31. In other states, fall apply between Oct. 15 and Dec. 31. Spring Applications: Apply prior to planting and incorporate within 24 hours.
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## SUNFLOWER-NO-TILL



Product	Formulation	Rate Per Acre			Comments
Spartan Charge	3.5 lb. a.i. suspo-emulsion	Coarse †	Medium †	Fine †	†Use higher rates for soils of pH <7.0 and lowest rate for pH >7.0 within the rate range. Refer to label for precautions. Provides postemergent contact and soil residual weed control. May be applied in the fall (after harvest) or spring (preplant burndown, early PRE or PRE) before or after weed emergence for broadleaf weed control. Tankmix with herbicides such as glyphosate, glufosinate, or paraquat for optimum broad-spectrum control.
		<1.5%OM 3.75-5 ozs.	<1.5%OM 3.75-5.75 ozs.	<1.5%OM 5-6.5 ozs.	
		1.5-3%OM 3.75-5.75 ozs.	1.5-3%OM 5-7.75 ozs.	1.5-3%OM 5.75-8.5 ozs.	
		>3%OM 5-7.75 ozs.	>3%OM	>3%OM 7.75-10.2 ozs.	

## SUNFLOWER-POSTEMERGENCE

Assure II or Targa + COC or NIS or MSO + UAN or AMS	.88 lb. a.i.	5-12 ozs.† + 1-2 gals./100 gal. or 1 qt./100 gal. or 1 gal./100 gal. + 2 qts. or 2 lbs.	†Rate dependent on weed species and weed stage of growth. Refer to label.
Beyond + COC or MSO or NIS + AMS or UAN	1AS	4 ozs. + 1-2 gals./100 gal. or 1-2 gals./100 gal. or 1 qt./100 gal. + 12-15 lbs./100 gal. or 2.5 gals./100 gal.	Post on Clearfield sunflowers only. Clearfield Plus sunflowers have a rate range of 4-6oz/A Apply at 2-8 leaf stage. Apply when broadcast weeds are less than 3" tall and when grasses are less than 4-5 leaf stage.
Defol® 750 (Sodium chloride)	7.5 lb. a.i.	3.2 qts.	For use as a defoliant at harvest. Apply 7 or more days before harvest when heads are fully mature. Do not graze or feed treated forage within 14 days of application.
Dual II MAGNUM	7.64E	Coarse <3%OM 1-1.33 pts. >3%OM 1.33 pts. Medium <3%OM 1.33-1.67 pts. >3%OM 1.33-1.67 pts. Fine <3%OM 1.33-1.67 pts. >3%OM 1.67-2 pts.	Within the rate ranges given, use the higher rate if heavy weed infestations are expected.
Express + MSO	50%SG	.25-.5 oz. + 1 gal./100 gal.	Apply only to sunflower hybrids with the DuPont ExpressSun™ trait. Refer to supplemental label.
Gramoxone SL 2.0 + NIS	2.0L	1.2-2 pts.† + 1 pt./100 gal.	†Use higher rate on heavy crop stands or heavy weed infestations. For use as a harvest aid treatment. Apply when sunflower seeds reach physiological maturity. PHI=7 days.
Intensity + COC + AMS or UAN	2EC	6-16 ozs. + 1 qt. + 2.5-4 lbs. or 1-2 qts.	For control of annual or perennial grasses. For perennial grasses, a split application may be needed for control. PHI=70 days.



Gramoxone SL 2.0 + NIS

Intensity + COC + AMS or UAN



## SUNFLOWER-POSTEMERGENCE



Product	Formulation	Rate Per Acre	Comments
Poast + COC + AMS	1.5EC	<u>Annual Grasses</u> .5-2 pts. <u>Perennial Grasses</u> 1.25-2.5 pts. + 1 qt. + 2.5 lbs.	May be applied sequentially to control perennial grasses. PHI=70 days.
Select Max or Intensity One + NIS + AMS	.97 lb. a.i.	6-32 ozs.† + 1 qt./100 gal. + 2.5-4 lbs.	†6-8 ozs./A is a reduced rate application. Higher rates are needed for perennial weeds and larger weeds, refer to label. For control of annual or perennial grasses. For perennial grasses, a split application may be needed for control. PHI=70 days.
Sharpen + MSO† + AMST or UANT	2.85SC	1-2 ozs. + 1 gal./100 gals. + 8.5 to 17 lbs./100 gals. or 1.25 to 2.5 gals./100 gals.	†For optimal burndown activity. For use for harvest aid/desiccation. Apply to sunflower that has reached physiological maturity (seed moisture is less than 36%) and at least 7 days prior to harvest. Up to 2 sequential applications may be made. May be tankmixed with glyphosate. 1 hour rainfast. <b>For use for harvest aid/desiccation only.</b>

### NOTES

## **NOTES**



**Loveland**  
*PRODUCTS*

*Insect Control*



## CORN INSECT CONTROL-AT PLANTING

At planting application rate (per acre), based on 30" rows applying a 7" band.



	INSECTICIDES	Field	Sweet	Pop	Direct Seed Contact	Corn Rootworm Larvae	Wireworms
<b>RU</b>	Aztec® 2.1G	YES	YES	YES	YES	7.3 lbs.	7.3 lbs.
<b>RU</b>	Aztec 4.67G (Smartbox)	YES	YES	YES	YES	3.27 lbs.	3.27 lbs.
<b>RU</b>	Brigade® 2EC	YES	YES	YES	YES	2.55-5.12 ozs.	2.55-5.12 ozs.
<b>RU</b>	Capture®/Sniper 2EC	YES	YES	YES	YES	5.12-6.4 ozs.	2.56-6.4 ozs.
<b>RU</b>	Capture LFR	YES	YES	YES	YES	6.8-8.5 ozs.	3.4-8.5 ozs.
<b>RU</b>	Cobalt® 2.5EC	YES	YES	NO	YES	-	2.87 ozs./ 1,000' row
<b>RU</b>	Cobalt® Advanced	YES	YES	NO	YES	-	2.87 ozs./ 1,000' row
<b>RU</b>	Counter® 15G Smartbox®/Lock'N Load®	YES	YES	YES	YES	8.7 lbs.	8.7 lbs.
<b>RU</b>	Counter 20G Smartbox/Lock'N Load	YES	YES	YES	YES	6.5 lbs.	6.5 lbs.
<b>RU</b>	Declare™	YES	YES	YES	YES	.26 oz./ 1,000' row	.26 oz./ 1,000' row
<b>RU</b>	Force® 3G	YES	YES	YES	YES	3.3-5.5 lbs.	3.3-5.5 lbs.
<b>RU</b>	Force CS	YES	YES	YES	YES	6-10 ozs.	6-10 ozs.
	Lorsban® 15G	YES	YES	NO	YES	8.7 lbs.	8.7 lbs. (T-band or in-furrow)
<b>RU</b>	Precept™	YES	YES	YES	YES	3.3-5.5 lbs.	3.3-5.5 lbs.
<b>RU</b>	Proaxis™	YES	YES	YES	YES	11.5 ozs.	11.5 ozs.
<b>RU</b>	SmartChoice® 5G Smartbox/Lock'N Load®	YES	YES	YES	YES	4.9-5.4 lbs.	3.3-3.8 lbs.
<b>RU</b>	Tombstone™ Helios® or Tombstone	YES	YES	YES	YES	-	2-2.8 ozs.
	Warhawk® 4E	YES	YES	YES	YES	2.6 pts. (T-band)	-

### TO CONVERT BANDED APPLICATIONS FROM:

30" Rows to ..... 40" Rows, multiply by ..... .75

30" Rows to ..... 38" Rows, multiply by ..... .7895

30" Rows to ..... 36" Rows, multiply by ..... .833



## CORN INSECT CONTROL-AT PLANTING



Seedcorn Beetle	Seedcorn Maggot	White grub	Nematodes	Comments
7.3 lbs.	7.3 lbs.	7.3 lbs.	-	Apply specified dosage of Aztec at planting over the row behind the disc openers and in front of press wheels. Aztec can be applied directly in-furrow or "T-banded". T-band applications must be incorporated for optimum results. No herbicide interactions.
3.27 lbs.	3.27 lbs.	3.27 lbs.	-	Same comments as Aztec 2.1G.
2.55-5.12 ozs.	2.55-5.12 ozs.	2.55-5.12 ozs.	-	-
2.56-6.4 ozs.	2.56-6.4 ozs.	2.56-6.4 ozs.	-	Apply as a 5-7" band (T-band) over an open furrow or in-furrow with the seed.
3.4-6.8 ozs.	3.4-6.8 ozs.	3.4-6.8 ozs.	-	Same as above.
2.87 ozs./ 1,000' row	2.87 ozs./ 1,000' row	2.87 ozs./ 1,000' row	-	Apply as an at-plant or T-band treatment.
2.87 ozs./ 1,000' row	2.87 ozs./ 1,000' row	2.87 ozs./ 1,000' row	-	Apply as an at-plant or T-band treatment.
8.7 lbs.	8.7 lbs.	8.7 lbs.	8.7 lbs.	Closed handling system. Do not exceed 8.7 lbs./A. May be applied at reduced rates for enhanced insect control with rootworm trait hybrids.
6.5 lbs.	6.5 lbs.	6.5 lbs.	6.5 lbs.	Closed handling system. Do not exceed 6.5 lbs./A. Ma be applied at reduced rates for enhanced insect control with rootworm trait hybrids.
.26 oz./ 1,000' row	.26 oz./ 1,000' row	.26 oz./ 1,000' row	-	T-band or in-furrow application. Apply in a minimum spray volume of 3 gals./A. Wireworm suppression only.
4.4-5.5 lbs.	4.4-5.5 lbs.	4.4-5.5 lbs.	-	Can be used on seed corn. Controls cutworms. Can be applied banded or in-furrow. For best control of wireworm and white grub, apply in-furrow.
8-10 ozs.	8-10 ozs.	8-10 ozs.	-	Can be applied banded or in-furrow.
8.7 lbs. (T-band or in-furrow)	8.7 lbs. (T-band or in-furrow)	8.7 lbs. (T-band or in-furrow)	-	Lorsban® performs well under a variety of planting time conditions. Used as a seed treatment, this product will enhance wireworm protection.
4.4-5.5 lbs.	4.4-5.5 lbs.	4.4-5.5 lbs.	-	Can be used on seed corn. Controls cutworms. Can be applied banded or in-furrow. For best control of wireworm and white grub, apply in-furrow.
11.5 ozs.	11.5 ozs.	11.5 ozs.	-	T-band or in-furrow application. Apply in a minimum spray volume of 3 gals./A. Wireworm suppression only.
-	3.3-3.8 lbs.	3.3-3.8 lbs.	-	Closed handling system. Apply SmartChoice 5G in-furrow only. May be applied at reduced rates for enhanced insect control with rootworm trait hybrids.
-	2-2.8 ozs.	2.5-2.8 ozs.	-	Apply in water or liquid pop-up starter fertilizer at planting.
2.6 pts. (T-band)	2.6 pts. (T-band)	2.6 pts. (T-band)	-	Controls all species of cutworms.



# CORN INSECT CONTROL-POSTPLANT



## APHIDS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana® XL	5.8-9.6 fl. ozs.	Corn (except sweet): Sweet corn: For best results, direct spray at aphid population.	12 hr. 12 hr.	21 days 1 day	.25 lb. a.i. .5 lb. a.i.
RU Besiege®	6-10 ozs.	Corn Refer to label for further instructions and restrictions	24 hr.	21 days	31 ozs/A
RU Brigade® 2EC or RU Sniper® 2EC	2.1-6.4 ozs.	Corn (except sweet): Sweet corn: Apply when populations reach economically damaging levels.	12 hr. 12 hr.	30 days 1 day	.3 lb. a.i. .2 lb. a.i.
RU Cobalt® 2.5EC	13-26 ozs.	Corn: May be applied through chemigation.	24 hr.	21 days (grain or ears)	2.4 lb. a.i. Refer to label for further restrictions.
RU Cobalt® Advanced	11-26 ozs.	For use in field, sweet, and seed corn.	24 hr.	21 days† †Grain, ears, forage or fodder.	†† ††129 ozs. product (2.5 lb. a.i. chlorpyrifos and .13 lb. a.i. lambda-cyhalothrin).
RU Declare™	1.02-1.54 ozs.	Corn (except sweet):	24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)	.06 lb. a.i.
		Sweet corn:	24 hr.	1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.24 lb. a.i.
		Suppression only.			Refer to label for further restrictions.
Dimethoate 400	.66-1 pt.	Field Corn: Make no more than 3 applications per year. Do not apply during pollen shed period if bees are present. For use in field corn only.	48 hr.	14 days	1.5 lb. a.i.
RU Fastac™ EC	2.7-3.8 oz./A	Control may be variable depending on species present and host-plant relationships.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero®	4-10.3 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.4 lb. a.i.
		Sweet corn: REI listed is for foliar applications.	12 hr.	3 days	.266 lb. a.i.



# CORN INSECT CONTROL-POSTPLANT



## APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lannate LV	.75-1.5 pts.	Corn (except sweet): Sweet corn:	48 hr. 48 hr.	† †† †tears and stover: 21 days forage: 3 days ††tears: 0 days stover: 21 days forage: 3 days	2.25 lb. a.i. 6.3 lb. a.i.
RU Lorsban Advanced or RU Warhawk® 4E	1-2 pts.	Corn: Make no more than 3 applications per season. Ground, air or chemigation application options.	24 hr.	21 days† †Warhawk: 35 days (fodder)	3 lb. a.i.
RU Match-Up	5.5-16.4 ozs.	Corn (except sweet): Sweet corn: See product label for additional for additional restrictions and instructions.	24 hr. 24 hr.	30 days 21 days	49.2 ozs 32.8 ozs.
RU Mustang Maxx®	2.72-4 ozs.	Corn (except sweet): Sweet corn:	12 hr. 12 hr.	Variet† 3 days	.1 lb. a.i. .15 lb. a.i.
				†SLN labels available for IA, IL, and NE that provide shorter PHIs. Grain and stover: 30 days forage: 60 days	
RU Penncap-M®	2-3 pts.	Corn: May be applied by chemigation. Refer to label. Do not apply during pollen shed if bees are foraging in the area.	4-5 days† †Ave. annual rainfall: <25" yr=5 days; 25"+/yr=4 days	12 days	3 lb. a.i.
RU Pounce® 1.5G	6.7-13.3 lbs.	Corn (except sweet): Sweet corn:	12 hr. 12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i. 1.2 lb. a.i.
RU Proaxis®	2.56-3.84 ozs.	Corn (except sweet): Sweet corn: Suppression only. See label for resistance statements.	24 hr. 24 hr.	21 days 1 day	.06 lb. a.i.† .24 lb. a.i.
RU Stallion®	9.25-11.75 ozs./A	Corn (except sweet): Sweet corn:	24 hr. 24 hr.	30 days 21 days	35.25 ozs./A 35.25 ozs./A
RU Voliam Xpress	6-9 ozs./A	Corn (except sweet): Sweet corn: Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions. Suppression only	24 hr. 24 hr.	21 days 1 day	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year. Suppression only.

Spraying some insecticides on pollen-shedding corn can be extremely hazardous to bees. Coordinate with local beekeepers before applying insecticides.


**APHIDS (cont.)**

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Warrior® II	1.28-1.92 ozs.	Corn (except sweet): Sweet corn: Suppression only. See label for resistance statements. With Zeon Technology	24 hr. 24 hr.	21 days 1 day	.12 lb. a.i.† .48 lb. a.i.† †Refer to label for details.

**ARMYWORMS**

RU Ambush 2E	6.4 – 12.8 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
RU Asana XL	5.8-9.6 fl. ozs.	Corn (except sweet): Sweet corn: Apply as necessary to maintain control. For fall armyworm control in sweet corn, apply to 1st and 2nd instar larvae.	12 hr. 12 hr.	21 days 1 day	.25 lb. a.i. .5 lb. a.i.
Avaunt®	2.5-3.5 ozs.	Sweet corn:  Foliar and chemigation application options. Apply through tassle push only.	12 hr. (14 days for hand harvesting)	3 days; 35 days (fodder or stover)	.26 lb. a.i.
RU Baythroid® XL	1.6-2.8 ozs.	Corn (except sweet): Sweet corn:	12 hr. 12 hr.	21 days† 0 days	.088 lb. a.i.†† .22 lb. a.i.†††
RU or Tombstone Helios or Tombstone		Do not apply more than 4 applications per season for field, pop and seed corn, and 10 apps/season for sweet corn. For control of 1st and 2nd instar larvae. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).		†Grain and fodder (PHI for green forage=0 days).	††Baythroid XL: .175 lb. a.i. = max. for Tombstone Helios and Tombstone. †††Baythroid XL: .44 lb. a.i. = max. for Tombstone Helios and Tombstone.
Belt™	2-3 ozs.	Corn:  May be applied by chemigation.	12 hr.	varies†	.375 lb. a.i.
RU Besiege®	6-10 ozs.	Corn  Refer to label for further instructions and restrictions	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
Biobit® HP	.5-2 lbs.	Corn:  For organic production. Treat at early instars before crop is extensively damaged. Larvae must be feeding on treated, exposed plants. Multiple applications may be necessary when populations are heavy. Full spray coverage is essential. Chemigation option available.	4 hrs.	0 days	N/A

Spraying some insecticides on pollen-shedding corn can be extremely hazardous to bees.  
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## CORN INSECT CONTROL-POSTPLANT



### ARMYWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt 2.5EC	13-26 ozs.	Corn: May be applied through chemigation.	24 hrs.	21 days (grain or ears)	2.4 lb. a.i. Refer to label for further restrictions.
RU Cobalt Advanced	11-26 ozs.	For use in field, sweet, and seed corn.	24 hr.	21 days† †Grain, ears, forage or fodder.	†† ††129 ozs. product (2.5 lb. a.i. chlorpyrifos and .13 lb. a.i. lambda-cyhalothrin).
Coragen	3.5-5 ozs.	Field and Pop Corn:  Sweet and seed corn:  For control of beet armyworm, corn earworm, European corn borer, and fall armyworm. Apply no more than 4 applications/a/crop. Use no more than 15.4 floz/a/crop.	4 hr.  4 hr.  	14 days  1 day  	.2 lb. a.i.  .2 lb. a.i.  
RU Declare	1.02-1.54 ozs.	Corn (except sweet):	24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)	.06 lb. a.i.
		Sweet corn:	24 hr.	1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.24 lb. a.i.
		Use higher rate for large larvae.			Refer to label for further restrictions.
Dipel® ES or Dipel DFT†	2-4 pts. or .5-2 lbs.	Corn:  †For organic production. Treat at early instars when plants first exhibit feeding signs in the whorls or leaves. Larvae must be feeding on treated, exposed plants. Multiple applications may be necessary when populations are heavy. Full spray coverage is essential. Chemigation option available.	4 hrs.	0 days	N/A
RU Fastac™ EC	3.2-3.8 oz./A	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage of foliage.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.4 lb. a.i.
		Sweet corn:	12 hr.	3 days	.266 lb. a.i.
		Apply when armyworms first appear and repeat as necessary.	REI listed is for foliar applications.		

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Coordinate with local beekeepers before applying insecticides.


**ARMYWORMS (cont.)**

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/lb/season
Intrepid® 2F	4-16 ozs.	Corn (except sweet):	4 hr.	21 days	1 lb. a.i.
		Sweet corn:	4 hr.	3 days (ears or forage) 21 days (dry fodder)	1 lb. a.i.
		Refer to label for important spray volume information.			
RU Lannate LV	.75-1.5 pts.	Corn (except sweet):	48 hr.	†	2.25 lb. a.i.
		Sweet corn:	48 hr.	†† † tears and stover: 21 days forage: 3 days †† tears: 0 days stover: 21 days forage: 3 days	6.3 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	1-2 pts.	Corn:	24 hr.	21 days†	3 lb. a.i.
		Make no more than 3 applications per season. Ground, air or chemigation application options.		† Warhawk: 35 days (fodder)	
RU Match-Up	5.5-16.4 ozs.	Corn (except sweet):	24 hr.	30 days	49.2 ozs
		Sweet corn:	24 hr.	21 days	32.8 ozs.
		See product label for additional for additional restrictions and instructions.			
RU Mustang Maxx	Corn (except sweet) 3.2-4 Sweet corn 2.8-4 ozs.	Corn (except sweet):	12 hr.	Varies†, ††	.1 lb. a.i.
		Sweet corn:	12 hr.	3 days	.15 lb. a.i.
				† SLN labels available for IA, IL, and NE that provide shorter PHIs. †† PHI for grain and stover= 30 days; forage=60 days.	
RU Penncap-M	2-3 pts.	Corn:	4-5 days†	12 days	3 lb. a.i.
		May be applied by chemigation. Refer to label. Do not apply during pollen shed if bees are foraging in the area. Labeled for true armyworm only.	† Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days		
RU Permethrin 3.2	4-8 ozs.	Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
		Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Chemigation option available.			
RU Pounce 1.5G	6.7-13.3 lbs.	Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
		Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Apply when eggs begin to hatch. Repeat as necessary following label restrictions.			

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## CORN INSECT CONTROL-POSTPLANT



### ARMYWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Prevathon	14-20 ozs.	Field and Pop Corn:	4 hr.	14 days	.2 lb. a.i.
		seed corn:	4 hr.	1 day	.2 lb. a.i.
		For control of corn earworm, beet armyworm, European cornborer, and fall armyworm. Apply no more than 4 applications/a/crop. Use no more than 59.7 floz/a/crop.			
RU Proaxis	2.56-3.84 ozs.	Corn (except sweet):	24 hr.	21 days	.06 lb. a.i.†
		Sweet corn:	24 hr.	1 day	.24 lb. a.i.
		For control of 1st and 2nd instar larvae only.			†Refer to label for details.
RU Stallion	9.25-11.75 ozs./A	Corn (except sweet):	24 hr.	30 days	35.25 ozs./A
		Sweet corn:	24 hr.	21 days	35.25 ozs./A
Tracer® 4SC	1-3 ozs. (rate for beet armyworm is 2-3 ozs./A.)	Corn (except sweet, seed, and popcorn):	4 hr.	28 days (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Seed corn and popcorn:	4 hr.	1 day (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Not for use in sweet corn. Chemigation option available. Application should be timed with peak egghatch.			
RU Voliam Xpress	6-9 ozs./A	Corn (except sweet):	24 hr.	21 days	31.0 fl. oz. of Voliam Xpress or .012 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
		Sweet corn:	24 hr.	1 day	
		Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.			
RU Warrior II	1.28-1.92 ozs.	Corn (except sweet):	24 hr.	21 days	.12 lb. a.i.†
		Sweet corn:	24 hr.	1 day	.48 lb. a.i.
		Use higher rates for large larvae. With Zeon Technology			†Refer to label for details.

### BLACK CUTWORM

RU Ambush 2E	6.4 – 12.8 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
RU Asana XL	Field corn only 5.8-9.6 fl. ozs.	Field Corn:  Apply when populations reach locally determined economic thresholds.	12 hr.	21 days	.25 lb. a.i.


**BLACK CUTWORM (cont.)**

Product		Comments	REI	PHI	Max. allowable product/A/season
<b>RU</b> Baythroid XL or <b>RU</b> Tombstone Helios or <b>RU</b> Tombstone	.8-1.6 ozs.	Corn (except sweet):  Sweet corn:  Do not apply more than 4 applications per season for field, pop and seed corn, and 10 apps/season for sweet corn. Refer to label. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.  12 hr.	21 days†  0 days	.088 lb. a.i.††  .22 lb. a.i.†††
<b>RU</b> Belt®	2-3 ozs.	Corn: Refer to label for further instructions and restrictions	12 hr.	1 day (green, forage, and sweet) 28 days (grain and stover)	.375 lb. a.i.
<b>RU</b> Besiege®	6-10 ozs.	Corn  Refer to label for further instructions and restrictions	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
<b>RU</b> Brigade 2EC or <b>RU</b> Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet):  Sweet corn: Apply when populations reach locally determined economic thresholds.	12 hr.  12 hr.	30 days  1 day	.3 lb. a.i.  .2 lb. a.i.
<b>RU</b> Cobalt 2.5 EC	13-38 ozs.	Corn: May be applied through chemigation. For use in field, sweet, and seed corn. Preferable to apply when soil is moist and worms are active on or near the soil surface.	24 hr.	21 days (grain, ears) 14 days (graze treated silage)	2.4 lb. a.i. Refer to label for further restrictions.
<b>RU</b> Cobalt Advanced	11-38 ozs.	For use in field, sweet, and seed corn. May be applied through chemigation. Preferable to apply when soil is moist and worms are active on or near the soil surface.	24 hr.	21 days†  †Grain, ears, forage or fodder.	††  ††129 ozs. product (2.5 lb. a.i. chloryrifos and .13 lb. a.i. lambda-cyhalothrin).
<b>RU</b> Declare	Corn (except sweet): .77-1.28 ozs.  Sweet corn: 1.02-1.54 ozs.	Corn (except sweet):  Sweet corn:	24 hr.  24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)  1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.06 lb. a.i.  .24 lb. a.i.
<b>RU</b> Fastac™ EC	1.3-2.8 fl. oz.	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage of foliage. May be applied in-furrow, banded or T-banded at 1.8-3.8 fl. oz./A depending on row spacing.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.

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**BLACK CUTWORM (cont.)**

	Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU	Hero	Corn (except sweet) 2.6-6.1 ozs.  Sweet corn 4-10.3 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.4 lb. a.i.
			Sweet corn:	12 hr.	3 days	.266 lb. a.i.
				REI listed is for foliar applications.		
RU	Lorsban Advanced or Warhawk 4E	1-2 pts.	Corn:	24 hr.	21 days†	3 lb. a.i.
			Ground, air or chemigation application options.		†Warhawk: 35 days (fodder)	
RU	Mustang Maxx	Corn (except sweet) 1.28-2.8 ozs.  Sweet corn 2.24-4 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.1 lb. a.i.
			Sweet corn:	12 hr.	3 days	.15 lb. a.i.
			Refer to label for detailed instructions and precautions.			
RU	Penncap-M	Corn (except sweet) 4 pts.  Sweet corn 3 pts.	Corn (except sweet):	4-5 days†	12 days	3 lb. a.i.
			Sweet corn:	4-5 days†	12 days	3 lb. a.i.
RU	Proaxis	Corn (except sweet) 1.92-3.2 ozs.  Sweet corn 2.56-3.84 ozs.		†REI=4 days in areas with an Ave. rainfall of 25+"/yr. & 5 days in areas with an Ave. annual rainfall of <25"/yr.		
			Corn (except sweet):	24 hr.	21 days	.06 lb. a.i.†
			Sweet corn:	24 hr.	1 day	.24 lb. a.i.
			Refer to label for detailed instructions and precautions.		†Refer to label for details.	
RU	Stallion	3.75-11.75 ozs./A	Corn (except sweet):	24 hr.	30 days	35.25 ozs./A
			Sweet corn:	24 hr.	21 days	35.25 ozs./A
RU	Voliam Xpress	5-9 ozs./A	Corn (except sweet):	24 hr.	21 days	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
			Sweet corn:	24 hr.	1 day	Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.
RU	Warrior II	Corn (except sweet) .96-1.6 ozs.  Sweet corn 1.28-1.92 ozs.	Corn (except sweet):	24 hr.	21 days	.12 lb. a.i.†
			Sweet corn:	24 hr.	1 day	.48 lb. a.i.
			Refer to label for specific timings, rates and precautions. With Zeon Technology			†Refer to label for details.

Spraying some insecticides on pollen-shedding corn can be extremely hazardous to bees.  
Coordinate with local beekeepers before applying insecticides.



# CORN INSECT CONTROL-POSTPLANT



## COMMON STALK BORER

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Ambush 2E	6.4 – 12.8 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
RU Asana XL	5.8-9.6 ozs.	Corn (except sweet): Sweet corn:  Applications must be made early in migration from grassy borders to corn, before borers enter the plant. More than one application may be necessary.	12 hr. 12 hr.	21 days 1 day	.25 lb. a.i. .5 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.	Corn (except sweet): Sweet corn:  Do not apply more than 4 applications per season for field, pop and seed corn, and 100 apps/season for sweet corn. Application must be made before larvae bore into plant. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr. 12 hr.	21 days† 1 day	.088 lb. a.i.†† .22 lb. a.i.†††
RU Belt	2-3 ozs.	Corn: Refer to label for further instructions and restrictions	12 hr.	1 day (green, forage, and sweet) 28 days (grain and stover)	.375 lb. a.i.
RU Besiege	6-10 ozs.	Corn  Refer to label for further instructions and restrictions	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet): Sweet corn:  See label for application timing.	12 hr. 12 hr.	30 days 1 day	.3 lb. a.i. .2 lb. a.i.
RU Cobalt 2.5EC	38-42 ozs.	Corn: For use in field, sweet, and seed corn.  Do not use in a burndown herbicide combination. Treat after applying herbicide, refer to label for timing. May be applied through chemigation. See label for application timing.	24 hr.	21 days (grain or ears)	2.4 lb. a.i. Refer to label for further restrictions.
RU Cobalt Advanced	32-42 ozs.	Corn: For use in field, sweet, and seed corn. Do not use in combination with a burndown herbicide. Refer to label. May be applied through chemigation.	24 hr.	21 days† †Grain, ears, forage or fodder.	†† ††129 ozs. product (2.5 lb. a.i. chlorpyrifos and .13 lb. a.i. lambda-cyhalothrin).



# CORN INSECT CONTROL-POSTPLANT



## COMMON STALK BORER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Declare	1.02-1.54 ozs.	Corn (except sweet):	24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)	.06 lb. a.i.
		Control before larvae bore into the stalk or ear.			Refer to label for further restrictions.
RU Fastac™ EC	2.7-3.8 oz./A	Controls larvae before boring into plant stalk or ear.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero	Corn (except sweet) 2.6-6.1 ozs.  Sweet corn 4-10.3 ozs.	Corn (except sweet): Foliar use only.	12 hr.	30 days (grain or stover) 60 days (forage)	4 lb. a.i.
		Sweet corn:	12 hr.	3 days	.266 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	2 pts.	Corn:	24 hr.	21 dayst	3 lb. a.i.
		Do not apply in combination with a burndown herbicide. Apply at time of stalk borer movement from grasses to corn plants. Make no more than 3 applications per season. Ground, air or chemigation application options.		†Warhawk: 35 days (fodder)	
RU Mustang Maxx	2.72-4 ozs.	Corn (except sweet):	12 hr.	Varies†, ‡‡	.1 lb. a.i.
		Sweet corn:	12 hr.	3 days	.15 lb. a.i.
RU Permethrin 3.2	4-8 ozs.	The label does not include this pest in sweet corn pests controlled list.		†SLN labels available for IA, IL, and NE that provide shorter PHIs. ††PHI for grain and stover= 30 days; forage=60 days.	
		Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
RU Pounce 1.5G	6.7-13.3 lbs.	Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Apply at time of stalk borer movement from grasses to corn plants. Refer to label for details. Chemigation option available.			
		Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
		Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Apply when or shortly before larvae move into corn from surrounding weeds or grasses.			

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## COMMON STALK BORER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Proaxis	2.56-2.84 ozs.	Corn (except sweet): Sweet corn: Pest is not listed in sweet corn pests controlled section. Apply before larvae bore into the stalk or ear.	24 hr. 24 hr.	21 days 1 day	.06 lb. a.i.† .24 lb. a.i. †Refer to label for details.
RU Stallion	9.25-11.75 ozs./A	Corn (except sweet): Sweet corn:	24 hr. 24 hr.	30 days 21 days	35.25 ozs./A 35.25 ozs./A
RU Voliam Xpress	6-9 ozs./A	Corn (except sweet): Sweet corn: Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.	24 hr. 24 hr.	21 days 1 day	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
RU Warrior II	1.28-1.92 ozs.	Corn (except sweet): Sweet corn: For control before the larvae have bored into the stalk. See label. With Zeon Technology	24 hr. 24 hr.	21 days 1 day	.12 lb. a.i.† .48 lb. a.i. †Refer to label for details.

## CORN EARWORM

RU Ambush 2E	6.4 – 12.8 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
RU Asana XL	5.8-9.6 fl. ozs.	Corn (except sweet): Sweet corn: First application should be made at or before silking. Repeat applications may be made. See label for timings and further instruction.	12 hr. 12 hr.	21 days 1 day	.25 lb. a.i. .5 lb. a.i.
Avaunt®	2.5-3.5 ozs.	Sweet corn:  Foliar and chemigation application options. Apply through tassle push only.	12 hr. (14 days for hand harvesting)	3 days; 35 days (fodder or stover)	.26 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.	Corn (except sweet): Sweet corn: Do not apply more than 4 applications per season for field, pop and seed corn, and 10 apps/season for sweet corn. See label for application timing. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone Helios or Tombstone Helios (cyfluthrin).	12 hr. 12 hr.	21 days† 0 days	.088 lb. a.i.†† .22 lb. a.i.††† †Grain and fodder (PHI for green forage=0 days). ††Baythroid XL; .175 lb. a.i. = max. for Tombstone Helios and Tombstone. †††Baythroid XL; .44 lb. a.i. = max. for Tombstone Helios and Tombstone.



## CORN INSECT CONTROL-POSTPLANT



### CORN EARWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Belt	2-3 ozs.	Corn: May be applied by chemigation.	12 hr.	varies†	.375 lb. a.i.
RU Besiege	6-10 ozs.	Corn Refer to label for further instructions and restrictions	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
Blackhawk™	2.2-3.3 ozs.	Corn: field, sweet, popcorn and seed corn. Sweet corn, 1 to 2-day re-treatment schedule may be necessary at silking	4 hr.	1-day†	†For sweet corn, popcorn and seed corn grain harvest, 7-days for forage and 28-days for fodder harvest. For field corn: 28-days for grain and fodder and 7-days for forage harvest. / 0.45 lb a.i.† / For sweet corn, popcorn and seed corn. 0.188 lb a.i. for field corn
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet): Sweet corn: Apply just before silking and repeat as necessary to maintain control.	12 hr. 12 hr.	30 days 1 day	.3 lb. a.i. .2 lb. a.i.
RU Cobalt 2.5EC	19-38 ozs.	Corn: For use in field, sweet, and seed corn. See label for application timing and further directions.	24 hrs.	21 days (grain or ears)	2.4 lb. a.i. Refer to label for further restrictions.
RU Cobalt Advanced	16-38 ozs.	Corn: For use in field, sweet, and seed corn.	24 hr.	21 days†	††
Coragen	3.5-5 ozs.	Field and Pop Corn:	4 hr.	14 days	15.4 floz/a/crop
		Sweet and seed corn: Apply no more than 4 applications/a/crop. Use no more than 15.4 floz/a/crop. Max allowable is 0.2 lbs a.i. of chlorantraniliprole containing products per acre per crop.	4 hr.	1 day	15.4 floz/a/crop

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# CORN INSECT CONTROL-POSTPLANT



## CORN EARWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Declare	Corn (except sweet): .77-1.28 ozs.	Corn (except sweet):	24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)	.06 lb. a.i.
	Sweet corn: 1.02-1.54 ozs.	Sweet corn:	24 hr.	1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.24 lb. a.i.
		Control before larvae bore into the corn stalk or ear.			Refer to label for further restrictions.
Dipel ES	2-4 pts.	Corn:  See label for timings and complete directions.	4 hrs.	0 days	N/A
RU Fastac™ EC	1.8-3.8 fl. oz.	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero	Corn (except sweet): 4-10.3 ozs.	Corn (including sweet): Foliar use only. Apply just before silking and repeat as necessary to maintain control.	12 hr.	30 days (grain or stover) 60 days (forage)	4 lb. a.i.
	Sweet corn: 4-10.3 ozs.	Sweet corn:  See comments above.	12 hr.	3 days	.266 lb. a.i.
				† tears and stover: 21 days forage: 3 days †† tears: 0 days stover: 21 days forage: 3 days	
RU Lannate LV	.75-1.5 pts.	Corn (except sweet):	48 hr.	†	2.25 lb. a.i.
		Sweet corn:	48 hr.	††	6.3 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	1.5-2 pts.	Corn:  See label for application timing. Make no more than 3 applications per season. Ground, air or chemigation application options.	24 hr.	21 days†  †Warhawk: 35 days (fodder)	3 lb. a.i.
RU Mustang Maxx	Corn (except sweet) 1.76-4 ozs. Sweet corn 2.8-4 ozs.	Corn (except sweet):	12 hr.	Varies†, ††	.1 lb. a.i.
		Sweet corn:	12 hr.	3 days	.15 lb. a.i.
		For control before larvae bore into stalk or ear.		†SLN labels available for IA, IL, and NE that provide shorter PHIs. ††PHI for grain and stover= 30 days; forage=60 days.	

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# CORN INSECT CONTROL-POSTPLANT



## CORN EARWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Permethrin 3.2	Corn (except sweet) 4-8 ozs. Sweet corn 4-10 ozs.	Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
		Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Apply before silking and continue as necessary.			
Prevathon	14-20 ozs.	Field and Pop Corn:	4 hr.	14 days	59.7 floz/a/crop
		Seed corn:	4 hr.	1 day	59.7 floz/a/crop.
		Apply no more than 4 applications/a/crop. Use no more than 59.7 floz/a/crop. Max allowable is 0.2 lbs ai of chlorantraniliprole containing products per acre per crop or Refer to label.			
RU Proaxis	Corn (except sweet) 1.92-3.2 ozs. Sweet corn 2.56-3.84 ozs.	Corn (except sweet):	24 hr.	21 days	.06 lb. a.i.†
		Sweet corn:	24 hr.	1 day	.24 lb. a.i.
		This pest is not listed in sweet corn pests controlled section. Apply before larvae bore into the stalk or ear.			†Refer to label for details.
RU Stallion	9.25-11.75 ozs./A	Corn (except sweet):	24 hr.	30 days	35.25 ozs./A
		Sweet corn:	24 hr.	21 days	35.25 ozs./A
Tracer 4SC	2-3 ozs.	Corn (except sweet, seed, and popcorn):	4 hrs.	28 days (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Seed corn and popcorn:	4 hrs.	1 day (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Not for use in sweet corn. See label for application timings and directions.			
RU Voliam Xpress	5-9 ozs./A	Corn (except sweet):	24 hr.	21 days	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
		Sweet corn:	24 hr.	1 day	
		Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.			
RU Warrior II	Corn (except sweet) .96-1.6 Sweet corn 1.28-1.92 ozs.	Corn (except sweet):	24 hr.	21 days	.12 lb. a.i.† .48 lb. a.i.
		Sweet corn:	24 hr.	1 day	
		For control before the larvae have bored into the stalk. See label. With Zeon Technology.			

## EUROPEAN CORN BORER

RU Ambush 2E	6.4 – 12.8 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
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# CORN INSECT CONTROL-POSTPLANT



## EUROPEAN CORN BORER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	7.8-9.6 ozs.	Corn (except sweet): Sweet corn: Apply in 20-30 gals. water/A for 1st generation, when eggs are in the blackhead stage, or beginning to hatch. For 2nd generation, make applications when sufficient egg masses are found, when eggs are in the same stage as previously stated. Refer to label.	12 hr. 12 hr.	21 days 1 day	.25 lb. a.i. .5 lb. a.i.
Avaunt®	2.5-3.5 ozs.	Sweet corn:  Foliar and chemigation application options. Apply through tassel push only.	12 hr. (14 days for hand harvesting)	3 days; 35 days (fodder or stover)	.26 lb. a.i.
RU Baythroid® XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.	Corn (except sweet): Sweet corn: Do not apply more than 4 applications per season for field, pop and seed corn, and 10 apps/season for sweet corn. For control of 1st and 2nd instar larvae. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr. 12 hr.	21 days† 0 days	.088 lb. a.i.†† .22 lb. a.i.†††
Belt	2-3 ozs.	Corn: May be applied by chemigation.	12 hr.	varies†	.375 lb. a.i.
RU Besiege	6-10 ozs.	Corn Refer to label for further instructions and restrictions	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
Blackhawk	1.67-3.3 ozs.	Corn: field, sweet, popcorn and seed corn. Sweet corn, 1 to 2-day re-treatment schedule may be necessary at silking	4 hr.	1-day†	†For sweet corn, popcorn and seed corn grain harvest, 7-days for forage and 28-days for fodder harvest. For field corn: 28-days for grain and fodder and 7-days for forage harvest. / 0.45 lb a.i.† / †For sweet corn, popcorn and seed corn. 0.188 lb a.i. for field corn
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet): Sweet corn: Make application at or initially before egg hatch.	12 hr. 12 hr.	30 days 1 day	.3 lb. a.i. .2 lb. a.i.



# CORN INSECT CONTROL-POSTPLANT



## EUROPEAN CORN BORER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt 2.5EC	19-38 ozs.†	Corn: †Rate different when using chemigation, refer to label. For use in field, sweet, and seed corn.	24 hr.	21 days (grain or ears)	2.4 lb. a.i. Refer to label for further restrictions.
RU Cobalt Advanced	16-38 ozs.†	†Rate different when applying by chemigation or power-operated ground or aerial equipment, refer to label. For use in field, sweet, and seed corn.	24 hr.	21 days† †Grain, ears, forage or fodder.	††129 ozs. product (2.5 lb. a.i. chlorpyrifos and .13 lb. a.i. lambda-cyhalothrin).
Coragen	3.5-5 ozs.	Field and Pop Corn:  Sweet and seed corn:  Apply no more than 4 applications/a/crop. Use no more than 15.4 floz/a/crop. Max allowable is 0.2 lbs a/c of chlorantraniliprole containing products per acre per crop.	4 hr.  4 hr.  	14 days  1 day	15.4 floz/a/crop  15.4 floz/a/crop
RU Declare	1.02-1.54 ozs.	Corn (except sweet):	24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)	.06 lb. a.i.
		Sweet corn:	24 hr.	1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.24 lb. a.i.
		Control before larvae bore into the corn stalk or ear.			Refer to label for further restrictions.
Dipel® ES or Dipel DFT†	1.5-2.5 pts. or .5-2 lbs.	Corn:  †For organic production. Refer to label for detailed instructions on first, second and potentially more extended ECB control.	4 hr.	0 days	N/A
RU Fastac™ EC	2.7-3.8 oz./A	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage of foliage.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Corn (except sweet):	12 hr.	30 days (grain or fodder) 60 days (forage)	.4 lb. a.i.
		Sweet corn:  Make initial application at or near egg hatch.	12 hr.  REI listed is for foliar applications.	3 days	.266 lb. a.i.
		Corn (except sweet):  Sweet corn: Refer to label for important spray information.	4 hr.  4 hr.	21 days  3 days (ears or forage) 21 days (dry fodder)	1 lb. a.i.  1 lb. a.i.



# CORN INSECT CONTROL-POSTPLANT



## EUROPEAN CORN BORER (cont.)

<b>RU</b>	Lannate LV	.75-1.5 pts.	Corn (except sweet): Sweet corn:	48 hr. 48 hr.	† †† †tears and stover: 21 days forage: 3 days ††tears: 0 days stover: 21 days forage: 3 days	2.25 lb. a.i. 6.3 lb. a.i.
<b>RU</b>	Lorsban Advanced or Warhawk 4E	1.5-2 pts. or 1-2 pts. chemigation	Corn:  May use sprinkler irrigation application on 1st or 2nd generation with 2 pts. of non-emulsifiable crop oil (has shown excellent results). Refer to label for safety precautions and other use instructions and restrictions.	24 hr.	21 days†  †Warhawk: 35 days (fodder)	3 lb. a.i.
<b>RU</b>	Lorsban® 15G	1st generation 5-6.5 lbs. 2nd generation 6.5 lbs.	Corn:  Apply granules into corn whorls if applying with ground equipment. Apply before larvae have entered the stalks.	24 hr.	21 days	3 lb. a.i.
<b>RU</b>	Mustang Maxx	Corn (except sweet) 2.72-4 ozs. Sweet corn 2.8-4 ozs.	Corn (except sweet): Sweet corn:  Refer to label for detailed use instructions and restrictions.	12 hr. 12 hr.	Varies†, †† 3 days  †SLN labels available for IA, IL, and NE that provide shorter PHLs. ††PFI for grain and stover= 30 days; forage=60 days.	.1 lb. a.i. .15 lb. a.i.
<b>RU</b>	Penncap-M	Corn (except sweet) 2-4 pts. Sweet corn 2-3 pts.	Corn:  Refer to label for detailed use instructions and restrictions.	4-5 days†  †Ave. annual rainfall: <25" /yr=5 days; 25"+/ yr=4 days	12 days	3 lb. a.i.
<b>RU</b>	Pounce 1.5G	6.7-13.3 lbs.	Corn (except sweet):  Sweet corn:  Treatment should occur when eggs are about to hatch.	12 hr. 12 hr.	30 days (grain or fodder) 0 days (forage)  1 day	.6 lb. a.i. 1.2 lb. a.i.
<b>RU</b>	Permethrin 3.2	4-8 ozs.	Corn (except sweet):  Sweet corn:  Refer to label for detailed use instructions and restrictions.	12 hr. 12 hr.	30 days (grain or fodder) 0 days (forage)  1 day	.6 lb. a.i. 1.2 lb. a.i.
	Prevathon	14-20 ozs.	Field and Pop Corn:  Seed corn:  Apply no more than 4 applications/a/crop. Use no more than 59.7 floz/a/crop. Max allowable is 0.2 lbs ai of chlorantraniliprole containing products per acre per crop or Refer to label.	4 hr. 4 hr.	14 days 1 day	59.7 floz/a/crop


**EUROPEAN CORN BORER (cont.)**

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
<b>RU</b> Proaxis	2.56-3.8-4 ozs.	Corn (except sweet): Sweet corn:  Control before the larvae borer into stalk or ear. Refer to label for detailed use instructions and restrictions.	24 hr. 24 hr.	21 days 1 day	.06 lb. a.i.† .24 lb. a.i.  †Refer to label for details.
<b>RU</b> Stallion	9.25-11.75 ozs./A	Corn (except sweet): Sweet corn:	24 hr. 24 hr.	30 days 21 days	35.25 ozs./A 35.25 ozs./A
Tracer 4SC	1-3 ozs.	Corn (except sweet, seed, and popcorn):	4 hr.	28 days (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Sweet corn and popcorn:	4 hr.	1 day (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Application should be timed to coincide with peak egg hatch.			
<b>RU</b> Tombstone Helios or <b>RU</b> Tombstone or <b>RU</b> Baythroid XL	1.6-2.8 ozs.	Corn (except sweet): Sweet corn:  Application must be made prior to larvae boring into the plant.	12 hr. 12 hr.	21 days† 0 days	.088 lb. a.i.†† .22 lb. a.i.†††  †Grain and fodder (PHI for green forage=0 days). ††Baythroid XL; .175 lb. a.i. = max. for Tombstone Helios and Tombstone. †††Baythroid XL; .44 lb. a.i. = max. for Tombstone Helios and Tombstone.
<b>RU</b> Voliam Xpress	6-9 ozs./A	Corn (except sweet): Sweet corn:  Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.	24 hr. 24 hr.	21 days 1 day	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
<b>RU</b> Warrior II	1.28-1.92 ozs.	Corn (except sweet): Sweet corn:  For control before the larvae bore into the stalk or ear. With Zeon Technology.	24 hr. 24 hr.	21 days 1 day	.12 lb. a.i.† .48 lb. a.i.  †Refer to label for details.

**FLEA BEETLES**

<b>RU</b> Ambush 2E	6.4 – 12.8 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
<b>RU</b> Asana XL	Field Corn only 5.8-9.6 ozs.	Apply when populations reach locally determined economic thresholds.	12 hr.	21 days	.25 lb. a.i.
<b>RU</b> Baythroid XL or <b>RU</b> Tombstone Helios or <b>RU</b> Tombstone	.8-1.6 ozs.	Corn (except sweet): Sweet corn:  Do not apply more than 4 applications per season for field, pop and seed corn, and 10 apps/season for sweet corn. Refer to label. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr. 12 hr.	21 days† 0 days	.088 lb. a.i.†† .22 lb. a.i.†††  †Grain and fodder (PHI for green forage=0 days). ††Baythroid XL; .175 lb. a.i. = max. for Tombstone Helios and Tombstone. †††Baythroid XL; .44 lb. a.i. = max. for Tombstone Helios and Tombstone.

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# CORN INSECT CONTROL-POSTPLANT



## FLEA BEETLES (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
<b>RU</b> Besiege	6-10 ozs.	Corn Refer to label for further instructions and restrictions	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
<b>RU</b> Brigade 2EC or <b>RU</b> Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet):  Sweet corn:  Apply when populations reach economically damaging levels.	12 hr.  12 hr.  	30 days  1 day  	.3 lb. a.i.  .2 lb. a.i.
<b>RU</b> Cobalt 2.5EC	13-26 ozs.	May be applied through chemigation.	24 hr.	21 days (grain or ears) 14 days (graze, treated silage)	2.4 lb. a.i. Refer to label for further restrictions.
<b>RU</b> Cobalt Advanced	11-26 ozs.	For use in field, sweet, and seed corn.	24 hr.	21 days†  †Grain, ears, forage or fodder.	††  ††129 ozs. product (2.5 lb. a.i. chlorpyrifos and .13 lb. a.i. lambda-cyhalothrin).
<b>RU</b> Declare	1.02-1.54 ozs.	Corn (except sweet):  Sweet corn:  Refer to label for detailed instructions and precautions.	24 hr.  24 hr.  	1 day (graze or forage) 21 days (grain, ears, fodder, silage)  1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.06 lb. a.i.  .24 lb. a.i.  Refer to label for further restrictions.
<b>RU</b> Fastac™ EC	2.7-3.8 oz./A	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage of foliage.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
<b>RU</b> Hero	Corn (except sweet) 2.6-6.1 ozs. Sweet corn 4-10.3 ozs.	Corn (except sweet):  Sweet corn:  Refer to label for detailed instructions and precautions.	12 hr.  12 hr.  	30 days (grain or stover) 60 days (forage)  3 days	.4 lb. a.i.  .266 lb. a.i.
<b>RU</b> Lorsban Advanced or <b>RU</b> Warhawk 4E	1-2 pts.	Corn:  Ground, air or chemigation application options.	24 hr.  	21 days†  †Warhawk: 35 days (fodder)	3 lb. a.i.
<b>RU</b> Match-Up	5.5-16.4 ozs.	Corn (except sweet):  Sweet corn:  See product label for additional for additional restrictions and instructions.	24 hr.  24 hr.  	30 days  21 days  	49.2 ozs.  32.8 ozs.

# CORN INSECT CONTROL-POSTPLANT



## FLEA BEETLES (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Mustang Maxx	Corn (except sweet) 2.72-4 ozs. Sweet corn 2.24-4 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.1 lb. a.i.
		Sweet corn:	12 hr.	3 days	.15 lb. a.i.
		Refer to label for detailed instructions and precautions.			
RU Penncap-M	2-3 pts.	Corn:	31 days	12 days	3 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	Corn (except sweet):	24 hr.	21 days	.06 lb. a.i.†
		Sweet corn:	24 hr.	1 day	.24 lb. a.i.
		Refer to label for detailed instructions and precautions.			† Refer to label for details.
RU Stallion	9.25- 11.75 ozs./A	Corn (except sweet):	24 hr.	30 days	35.25 ozs./A
		Sweet corn:	24 hr.	21 days	35.25 ozs./A
RU Voliam Xpress	6-9 ozs./A	Corn (except sweet):	24 hr.	21 days	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
		Sweet corn:	24 hr.	1 day	
		Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.			
RU Warrior II	1.28-1.92 ozs.	Corn (except sweet):	24 hr.	21 days	.12 lb. a.i.†
		Sweet corn:	24 hr.	1 day	.48 lb. a.i.
		Refer to label for specific timings, rates and precautions. With Zeon Technology.			† Refer to label for details.

## GRASSHOPPERS

RU Asana XL	1st & 2nd instar 3.9-5.8 ozs. ≥2nd instar stage 5.8-9.6 ozs.	Corn (except sweet):	12 hr.	21 days	.25 lb. a.i.
		Sweet corn:	12 hr.	1 day	.5 lb. a.i.
		Apply as necessary to maintain control.			
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	Corn (except sweet) 2.1-2.8 ozs. Sweet corn 2-2.8 ozs.	Corn (except sweet):	12 hr.	21 days†	.088 lb. a.i.††
		Sweet corn:	12 hr.	0 days	.22 lb. a.i.†††
		Do not apply more than 4 applications per season for field, pop and seed corn, and 10 apps/season for sweet corn. Refer to label. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).		†Grain and fodder (PHI for green forage=0 days).	††Baythroid XL; .175 lb. a.i. = max. for Tombstone Helios and Tombstone. †††Baythroid XL; .44 lb. a.i. = max. for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Corn	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
		Refer to label for further instructions and restrictions			
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet):	12 hr.	30 days	.3 lb. a.i.
		Sweet corn:	12 hr.	1 day	.2 lb. a.i.
		Apply when populations reach economically damaging levels.			



# CORN INSECT CONTROL-POSTPLANT



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt 2.5EC	7-13 ozs.	Corn:	24 hr.	21 days	2.4 lb. a.i.†
		(grain or ears) 14 days (silage)			† Refer to label for further restrictions.
RU Cobalt Advanced	6-13 ozs.	For use in field, sweet, and seed corn. Broadcast foliar or chemigation.	24 hr.	21 days†	††
				†Grain, ears, forage or fodder.	††129 ozs. product (2.5 lb. a.i. chlorpyrifos and .13 lb. a.i. lambda-cyhalothrin).
RU Declare	1.02-1.54 ozs.	Corn (except sweet):	24 hr.	1 day (graze or forage) 21 days (grain, ears, fodder, silage)	.06 lb. a.i.
		Sweet corn:	24 hr.	1 day (grain, ears, graze or forage) 21 days (fodder, silage)	.24 lb. a.i.
					Refer to label for further restrictions.
Dimethoate 400	1 pt.	Field Corn:	48 hr.	14 days	1.5 lb. a.i.
		Make no more than 3 applications per year. Do not apply during pollen shed period if bees are present. For use in field corn only.			
RU Fastac™ EC	2.7-3.8 oz./A	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage of foliage.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero	2.6-6.1 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.4 lb. a.i.
		Sweet corn:	12 hr.†	3 days	.266 lb. a.i.
		Refer to label for detailed instructions and precautions.	†REI listed is for foliar applications.		
RU Lorsban Advanced or RU Warhawk 4E	0.5-1 pt.	Corn:	24 hr.	21 days†	3 lb. a.i.
		Use low rate if second instar or younger. Ground, air or chemigation application options.		†Warhawk 35 days (fodder)	
Malathion 57% EC	1.5 pts.	Sweet corn (only):	24 hr.	5 days	-
		Apply in sufficient water for good coverage. Apply when nymphs are young. Injury may occur in whorl and silk stage, refer to label.			



# CORN INSECT CONTROL-POSTPLANT



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Match-Up	5.5-16.4 ozs.	Corn (except sweet): Sweet corn: See product label for additional for additional restrictions and instructions.	24 hr. 24 hr.	30 days 21 days	49.2 ozs 32.8 ozs.
RU Mustang Maxx	Corn (except sweet) 2.72-4 ozs. Sweet corn 2.8-4 ozs.	Corn (except sweet): Sweet corn: Refer to label for detailed use instructions and restrictions.	12 hr. 12 hr.	Varies†, †† 3 days	.1 lb. a.i. .15 lb. a.i.
RU Penncap-M	2-3 pts.	Corn:  Use higher rates if grasshoppers are large (past 2nd instar nymph stage) or weather is cool. Refer to label. Do not apply during pollen shed if bees are foraging in the area.	4-5 days†	12 days	3 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	Corn (except sweet): Sweet corn: Refer to label for detailed instructions and precautions.	24 hr. 24 hr.	21 days 1 day	.06 lb. a.i.† .24 lb. a.i.
RU Stallion	9.25-11.75 ozs./A	Corn (except sweet): Sweet corn:	24 hr. 24 hr.	30 days 21 days	35.25 ozs./A 35.25 ozs./A
RU Voliam Xpress	6-9 ozs./A	Corn (except sweet): Sweet corn: Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.	24 hr. 24 hr.	21 days 1 day	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
RU Warrior II	1.28-1.92 ozs.	Corn (except sweet): Sweet corn: Refer to label for specific timings, rates and precautions. With Zeon Technology.	24 hr. 24 hr.	21 days 1 day	.12 lb. a.i.† .48 lb. a.i.
<b>SPIDER MITES</b>					
Oberon 4SC	2.85-8 ozs.	For best results, apply treatment when target pest populations begin to build and before a damaging population becomes established, prior to leaf damage or discoloration. OBERON 4 SC INSECTICIDE/MITICIDE is most effective when applications are targeted toward egg and nymphal stages of target pests.	12 hr.	30 days	8.5 fl ozs



# CORN INSECT CONTROL-POSTPLANT



## SPIDER MITES (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Zeal	1.5 – 3 ozs.	Apply prior to threshold. May be applied by ground or air. Use 2 to 3 oz. rate for Banks Grass Mites. Coverage is essential for control.	12 hr.	21 days	6 oz./A/Yr. or 0.27 lb. a.i.

## WESTERN BEAN CUTWORM

<b>RU</b>	Ambush 2E	3.2 – 6.4 ozs.	See label for further instructions and restrictions.	12 hr.	Field, pop, seed 30 days (grain or fodder) 0 days for Forage.	0.6 lb. a.i.
<b>RU</b>	Asana XL	2.9-5.8 ozs.	Corn (except sweet):	12 hr.	21 days	.25 lb. a.i.
			Sweet corn:	12 hr.	1 day	.5 lb. a.i.
<b>RU</b>	Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.	Apply before larvae enter the ear. Refer to label for detailed use instructions and restrictions.			
			Corn (except sweet):	12 hr.	21 days†	.088 lb. a.i.††
			Sweet corn:	12 hr.	0 days	.22 lb. a.i.†††
	Belt	2-3 ozs.	Refer to label for detailed use instructions and restrictions. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).		†Grain and fodder (PHI for green forage=0 days).	††Baythroid XL; .175 lb. a.i. = max. for Tombstone Helios and Tombstone. †††Baythroid XL; .44 lb. a.i. = max. for Tombstone Helios and Tombstone.
			Corn:	12 hr.	varies†	.375 lb. a.i.
<b>RU</b>	Besiege	6-10 ozs.	May be applied by chemigation.		†PHI for grain and stover=28 days; green forage, silage and sweet corn=1 day	
			Corn	24 hr.	21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
<b>RU</b>	Blackhawk	2.2-3.3 ozs.	Refer to label for further instructions and restrictions			
			Corn: field, sweet, popcorn and seed corn. Sweet corn, 1 to 2-day re-treatment schedule may be necessary at silking	4 hr.	1-day†	†For sweet corn, popcorn and seed corn grain harvest, 7-days for forage and 28-days for fodder harvest. For field corn: 28-days for grain and fodder and 7-days for forage harvest. / 0.45 lb a.i.† / †For sweet corn, popcorn and seed corn. 0.188 lb a.i. for field corn
<b>RU</b>	Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	Corn (except sweet):	12 hr.	30 days	.3 lb. a.i.
			Sweet corn:	12 hr.	1 day	.2 lb. a.i.
<b>RU</b>	Cobalt 2.5EC	13-26 ozs.	Refer to label for detailed use instructions and restrictions.			
			Corn: Refer to label for detailed use instructions and restrictions.	24 hr.	21 days (grain or ears)	2.4 lb. a.i. Refer to label for further restrictions.



# CORN INSECT CONTROL-POSTPLANT



## WESTERN BEAN CUTWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt Advanced	11-26 ozs.	For use in field, sweet, and seed corn. Broadcast foliar or chemigation.	24 hr.	21 days†	††
Dipel ES	1.5-2.5 pts.	Corn: Treat when plants first exhibit feeding signs in the whorls of leaves.	4 hr.	0 days	N/A
RU Fastac™ EC	1.3-2.8 oz./A	Make applications when insect populations reach economic thresholds. Use sufficient water to obtain full coverage of foliage. May be applied in-furrow, banded or T-banded at 1.8-3.8 fl. oz./A depending on row spacing.	12 hr.	30 days (grain) 60 days (forage) 3 days for sweet corn	0.075 lb. a.i.
RU Hero	2.6-6.1 ozs.	Corn (except sweet):	12 hr.	30 days (grain or stover) 60 days (forage)	.4 lb. a.i.
		Sweet corn: Refer to label for detailed instructions and precautions.	12 hr.	3 days REI listed is for foliar applications.	.266 lb. a.i.
		Corn (except sweet): Sweet corn: Refer to label for important spray information.	4 hr. 4 hr. Refer to label for important spray information.	21 days 3 days (ears or forage) 21 days (dry fodder)	1 lb. a.i. 1 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	1-2 pts.	Corn: Refer to label for safety precautions and other use instructions and restrictions.	24 hr.	21 days	3 lb. a.i.
RU Match-Up	5.5-16.4 ozs.	Corn (except sweet): Sweet corn: See product label for additional for additional restrictions and instructions.	24 hr. 24 hr. Refer to label for additional for additional restrictions and instructions.	30 days 21 days	49.2 ozs. 32.8 ozs.
RU Mustang Maxx	1.76-4 ozs.	Corn (except sweet): Sweet corn: Label does not list this pest in sweet corn section. Apply before larvae bores into stalk or ear. Refer to label for detailed use instructions and restrictions.	12 hr. 12 hr. Refer to label for detailed use instructions and restrictions.	Varies†, †† 3 days †SLN labels available for IA, IL, and NE that provide shorter PHIs. ††PHI for grain and stover= 30 days; forage=60 days.	.1 lb. a.i. .15 lb. a.i.
RU Penncap-M	Corn (except sweet) 2 pts. Sweet corn 2-3 pts.	Corn: Refer to label for detailed use instructions and restrictions.	4-5 days† †Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days	12 days	3 lb. a.i.



## CORN INSECT CONTROL-POSTPLANT



### WESTERN BEAN CUTWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Permethrin 3.2	2-4 ozs.	Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
		Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Refer to label for detailed use instructions and restrictions.			
RU Pounce 1.5G	6.7-13.3 lbs.	Corn (except sweet):	12 hr.	30 days (grain or fodder) 0 days (forage)	.6 lb. a.i.
		Sweet corn:	12 hr.	1 day	1.2 lb. a.i.
		Apply when eggs begin to hatch.			
Prevathon	14-20 ozs.	Field and Pop Corn:	4 hr.	14 days	59.7 floz/a/crop
		Seed corn:	4 hr.	1 day	59.7 floz/a/crop.
		Apply no more than 4 applications/a/crop. Use no more than 59.7 floz/a/crop. Max allowable is 0.2 lbs ai of chlorantraniliprole containing products per acre per crop or Refer to label.			
Tracer 4SC	2-3 ozs.	Corn (except sweet, seed, and popcorn):	4 hr.	28 days (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Sweet corn and popcorn:	4 hr.	1 day (grain) 3 days (forage and fodder)	.188 lb. a.i.
		Refer to label for detailed instructions.			
RU Stallion	5-11.75 ozs./A	Corn (except sweet):	24 hr.	30 days	35.25 ozs./A
		Sweet corn:	24 hr.	21 days	35.25 ozs./A
RU Voliam Xpress	5-9 ozs./A	Corn (except sweet):	24 hr.	21 days	31.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per year.
		Sweet corn:	24 hr.	1 day	
		Apply as required by scouting, or locally prescribed corn growth stages. Refer to label for further instructions and restrictions.			
RU Warrior II	1.28-1.92 ozs.	Corn (except sweet):	24 hr.	21 days	.12 lb. a.i.†
		Sweet corn:	24 hr.	1 day	.48 lb. a.i.
		Control before the larvae bore into the stalk. With Zeon Technology.			†Refer to label for details.

### COTTON INSECT CONTROL-POSTPLANT

#### ARMYWORMS

Acephate 90 WDG	1.1 lb	Repeat application as necessary to maintain control.	24	21	4 lbs
Baythroid XL or Tombstone or Tombstone Helios	3.2 ozs	Spray when needed. Respray if necessary. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs


**ARMYWORMS (cont.)**

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Belt SC	2.0 – 3.0 ozs	Spray when needed.	12	28	9 ozs
<b>RU</b> Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs
Brigade or Sniper	3.8 – 6.4 ozs	Spray when needed.	12	14	32 ozs
<b>RU</b> Brigadier	5.1 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
<b>RU</b> Cobalt® or <b>RU</b> Cobalt Advanced	19 – 38 ozs	Spray when needed.	24	21	126 ozs
Consero	45 – 32 Ac/Container	See label for uses.	24	28	14.4/10.2 ozs
Curacron 8E	0.75 – 1 pt	Spray when young larvae first appear feeding on leaf surfaces.	48	14 days with water 30 days with oil carrier	5 pts
Denim	8.0 – 12.0 ozs	Spray when needed.	12	21	48 ozs
<b>RU</b> Dimilin 2L	4 – 8 ozs	Spray when needed.	12	14	24 ozs
<b>RU</b> Endigo ZC	4.5 – 5.5 ozs	Spray when needed.	24	21	13.5 ozs
Fastac EC	2.6-3.6 ozs	Spray when needed.	12	14	11.4 ozs
Intrepid	4 – 10 ozs	Apply at egg hatch or first signs of feeding.	4	14	64 ozs
<b>RU</b> Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
<b>RU</b> Karate with Zeon <b>RU</b> Warrior II with Zeon	1.6 – 2.56 ozs	Spray when needed. Spray when needed. May redden cotton.	24	21	12.8 ozs
<b>RU</b> Lannate LV	1.5 pts		48	15	6 pts
<b>RU</b> Larvin 3.2	24 – 36 ozs	Spray when needed.	48	28	5.4 lbs
<b>RU</b> Lorsban or Lorsban Advanced or Warhawk	0.5 – 2.0 pts	Spray when needed. Not for use in Mississippi.	24	14	6 pts
<b>RU</b> Mustang Max	2.64 – 3.6 ozs	Spray when needed.	12	14	24 ozs
Prevathon SC	14 – 27 ozs	Spray when needed.	4	21	59.7 ozs
<b>RU</b> Stallion	9.3 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs
Steward	9.2 – 11.3 ozs	Spray when needed.	12	14	45 ozs
<b>RU</b> Swagger	10.2 – 15.4 ozs	Spray when needed. Minimum appl. Interval is 7 days.	12	14	79.36 oz
Tracer®	2.14 – 2.90 ozs.	Spray when needed.	4	28	14.4 ozs



# COTTON INSECT CONTROL-POSTPLANT



## BOLL WEEVIL

Asana XL	5.8 – 9.6 ozs	Spray when weevil populations are threatening. Repeat if needed 3-5 days apart.	12	21	42.2 ozs
Baythroid XL or Tombstone or Tombstone Helios	1.6 – 2.6 ozs	Spray when weevil populations are threatening. Repeat if needed 3-5 days apart. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs
Bidrin 8	1.6 – 8 ozs	Spray when needed. Use higher rates for late season applications.	6 days	30	3.2 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
RU Dimilin 2L	4 – 8 ozs	Spray when needed.	12	14	24 ozs
RU Endigo ZC	4.5 – 5.5 ozs	Spray when needed.	24	21	13.5 ozs
Fastac EC	2.6-3.6 ozs	Apply at 3-4 day interval until pest numbers are reduced.	12	14	11.4 ozs
RU Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
RU Karate with Zeon RU Warrior II with Zeon	1.6 – 2.56 ozs	Spray when needed.	24	21	12.8 ozs
Leverage	3.8 – 5.0 ozs	Spray when needed.	12	14	25 ozs
Malathion 57 EC	1 – 4 pts	Spray when needed.	48	7	12 pts
Methyl Parathion 4EC	0.5 – 1.5 pts	Follow trapping and scouting info for when to spray.	4	7	3.75 lbs ai
RU Mustang Max	2.64 – 3.6 ozs	Spray when weevil populations are threatening. Repeat if needed 3 – 5 days apart.	12	14	24 ozs
RU Stallion	9.3 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs
Vydate C-LV	4.25 – 17 ozs	Spray when weevil populations are threatening. Repeat if needed.	48	14	102 ozs

## BOLLWORM/TOBACCO BUDWORM

Acephate 90 WDG	0.5 – 1.1 lbs	See label for uses.	24	21	4 lbs
Asana XL	5.8 – 9.6 ozs	Spray when needed.	12	21	42.2 ozs
Baythroid XL or Tombstone or Tombstone Helios	1.6 – 2.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Belt SC	2.0 – 3.0 ozs	Spray when needed.	12	28	9 ozs
Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs



## COTTON INSECT CONTROL-POSTPLANT



### BOLLWORM/TOBACCO BUDWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Blackhawk	1.6 – 3.2 ozs	Use higher rate for post bloom application. Target worms when majority of population is within the time of blackhead egg stage to 1/8 inch larval stage.	4	28	20 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
RU Brigadier	5.1 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
RU Cobalt or Cobalt Adv.	19 – 38 ozs	Spray when needed. No more than 3 applications per season.	24	21	126 ozs
Consero	45 – 32 Ac/container	See label for uses.	24	28	14.4/10.2 ozs
Curacron 8E	0.75 – 1 pt	Spray when needed.	48	14 days with water 30 days with oil carrier	5 pts
Danitol	10.67 – 16 ozs	Spray when needed.	24	21	42.6 ozs
Denim	8.0 – 12.0 ozs	Spray when needed.	12	21	48 ozs
RU Endigo ZC	4.5 – 5.5 ozs	Spray when needed. Do not graze livestock to treated fields.	24	21	13.5 ozs
Fastac EC	2.6-3.6 ozs	Spray when needed. See resistance statement on label.	12	14	11.4 ozs
RU Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
Intruder 70 WSP	0.6 – 1.1 oz	For use as an Ovicide, spray as needed.	12	28	9 ozs
RU Karate with Zeon	1.6 – 2.56 ozs	Spray when needed.	24	21	12.8 ozs
RU Warrior II with Zeon					
RU Lannate LV	1.5 pts	Spray when needed. May redden cotton.	48	15	6 pts
RU Larvin 3.2	24 – 36 ozs	Spray when needed.	48	28	5.4 lbs
Leverage	3.0 – 5.0 ozs	Spray when needed.	12	14	25 ozs
RU Lorsban or Lorsban Advanced or Warhawk	1.5 – 2.0 pts	Spray when needed. Not for use in Mississippi.	24	14	6 pts
RU Mustang Max	2.64 – 3.6 ozs	Spray when needed.	12	14	24 ozs
Prevathon SC	14 – 27 ozs	Spray when needed.	4	21	59.7 ozs



## COTTON INSECT CONTROL-POSTPLANT



### BOLLWORM/TOBACCO BUDWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Steward	11.3 ozs	Spray when needed. Time application to egg hatch through 1/8 inch larval stage.	12	14	45 ozs
<b>RU</b> Swagger	10.2 – 15.4 ozs	Spray when needed. Minimum appl. Interval is 7 days.	12	14	79.36 oz

### Cotton Aphids

Acephate 90 WDG	0.5 – 1.1 lbs	See label for uses. See label for additional use rates.	24	21	4 lbs
Baythroid XL or Tombstone or Tombstone Helios	1.6 – 2.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Belay	4.0 ozs	Apply prior to threshold.	12	21	12 ozs
<b>RU</b> Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
<b>RU</b> Brigadier	3.8 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
<b>RU</b> Carbine	1.7 – 2.8 ozs	Spray when needed.	12	30	8.4 ozs
Centric 40 WG	1.25 – 2.5 ozs	Apply when aphid population begins to build. Reapply after 14 days if needed.	12	21	5 ozs
Curacron 8E	0.5 pt	Spray when needed.	48	14 days with water 30 days with oil carrier	5 pts
Dimethoate 400	0.25 – 1.0 pts	Spray when needed. Reapply after 14 days if needed.	48	14	0.5 lbs
<b>RU</b> Endigo ZC	5.0 – 6.0 ozs	Spray when needed. Do not graze livestock to treated fields.	24	21	13.5 ozs
Fastac EC	2.8-3.8 ozs	Control may be variable depending on species present.	12	14	11.4 ozs
Intruder 70 WSP	0.6 – 1.1 ozs	Spray when needed.	12	28	9 ozs
<b>RU</b> Lannate LV	0.75 pt	Spray when needed. May redden cotton.	48	15	6 pts
Leverage	3.0 – 5.0 ozs	Spray when needed.	12	14	25 ozs
<b>RU</b> Lorsban or Lorsban Advanced or Warhawk	0.5 – 2.0 pts	Spray when needed. Not for use in Mississippi.	24	14	6 pts
<b>RU</b> Swagger	7.6 – 15.4 ozs	Spray when needed. Minimum appl. Interval is 7 days.	12	14	79.36 ozs
Transform	0.75 – 1.0 ozs	Spray when needed.	24	14	8.5 ozs
Trimax Pro	0.9 – 1.8 ozs	Spray when needed.	12	14	8.9 ozs



# COTTON INSECT CONTROL-POSTPLANT



## Cotton Fleahopper

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Acephate 90 WDG	0.25 lbs	Apply when eggs first appear, repeat as necessary to maintain control.	24	21	4 lbs
Asana XL	5.8 – 9.6 ozs	Spray when needed.	12	21	42.2 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Athena	10 – 17 ozs	Spray when needed.	12	20	42 ozs
Baythroid XL or Tombstone or Tombstone Helios	1.6 – 2.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs
Bidrin 8	1.6 – 8 ozs	Spray when needed. Use higher rates for late season applications.	6 days	30	3.2 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Brigadier	3.8 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Carbine	2.0 – 2.8 ozs	Spray when needed.	12	30	8.4 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Cobalt or Cobalt Adv.	19 – 38 ozs	Spray when needed. No more than 3 applications per season.	24	21	126 ozs
Consero	45 – 32 Ac/ container	See label for uses.	24	28	14.4/10.2 ozs
Dimethoate 400	0.25 – 1.0 pts	Spray when needed. Reapply after 14 days if needed.	48	14	0.5 lbs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Endigo ZC	4.5 – 5.5 ozs	Spray when needed. Do not graze livestock to treated fields.	24	21	13.5 ozs
Fastac EC	2.6-3.6 ozs	Spray when needed.	12	14	11.4 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
Intruder 70 WSP	0.6 – 1.1 oz	Spray when needed.	12	28	9 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Karate with Zeon Warrior II with Zeon	1.28-1.92 ozs	Spray when needed.	24	21	12.8 ozs
Leverage	3.0 – 5.0 ozs	Spray when needed.	12	14	25 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Lorsban or Lorsban Advanced or Warhawk	0.375-1.0 pts	Spray when needed. Not for use in Mississippi.	24	14	6 pts
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Mustang Max	2.64 – 3.6 ozs	Spray when needed.	12	14	24 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Stallion	9.3 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs
<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px;">RU</span> Swagger	7.6 – 15.4 ozs	Spray when needed. Minimum appl. Interval is 7 days.	12	14	79.36 oz
Transform	0.75 – 1.0 ozs	Spray when needed.	24	14	8.5 ozs
Trimax Pro	0.9 – 1.8 ozs	Spray when needed.	12	14	8.9 ozs



## COTTON INSECT CONTROL-POSTPLANT



### Cutworms

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Acephate 90 WDG	0.8 lbs	See label for uses.	24	21	4 lbs
Asana XL	5.8 – 9.6 ozs	Spray when needed.	12	21	42.2 ozs
Baythroid XL or Tombstone or Tombstone Helios	0.8-1.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Belt SC	2.0 – 3.0 ozs	Spray when needed.	12	28	9 ozs
Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
<b>RU</b> Brigadier	5.1 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
Cobalt	19 – 38 ozs	Spray when needed.	24	21	126 ozs
Consero	45 – 32 Ac/container	See label for uses.	24	28	14.4/10.2 ozs
Fastac EC	1.3-1.9 ozs	Spray when needed.	12	14	11.4 ozs
<b>RU</b> Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
<b>RU</b> Karate with Zeon <b>RU</b> Warrior II with Zeon	0.96 – 1.28 ozs	Spray when needed.	24	21	12.8 ozs
<b>RU</b> Larvin 3.2	24 ozs	Spray when cutworms are actively feeding.	48	28	5.4 lbs
Leverage	3.0 – 5.0 ozs	Spray when needed.	12	14	25 ozs
<b>RU</b> Lorsban or Lorsban Advanced or Warhawk	1.5 – 2.0 pts	Spray when needed. Not for use in Mississippi.	24	14	6 pts
<b>RU</b> Mustang Max	1.28 – 1.92 ozs	Spray when needed. May be applied preemergent from 14 days prior to planting up to crop emergence as a broadcast spray, in-furrow treatment or behind the planter press wheel.	12	14	24 ozs
<b>RU</b> Stallion	3.75 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs
<b>RU</b> Swagger	10.2 – 15.4 ozs	Spray when needed. Minimum appl. Interval is 7 days.	12	14	79.36 oz



## COTTON INSECT CONTROL-POSTPLANT



### Plant Bugs

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Acephate 90 WDG	0.5 – 1.1 lbs	Apply when eggs first appear, repeat as necessary to maintain control.	24	21	4 lbs
Admire Pro or Wrangler	0.9 – 1.7 ozs 1.0 – 2.0 ozs	Excluding Lygus Hesperus. See label for additional use rates	14	12	9.2 ozs
Asana XL	5.8 – 9.6 ozs	Spray when needed.	12	21	42.2 ozs
RU Athena	13.5 – 17 ozs	Spray when needed.	12	20	42 ozs
Baythroid XL or Tombstone or Tombstone Helios	1.6 – 2.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Belay	3 – 6 ozs	Apply prior to threshold.	12	21	12 ozs
Bidrin 8	4 – 8 ozs	Spray when needed.	6 days	30	16 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
RU Brigadier	3.8 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
RU Carbine	2.0 – 2.8 ozs	Spray when needed.	12	30	8.4 ozs
Centric 40 WG	2.0 – 2.5 ozs	Apply when local thresholds have been reached. Reapply as needed. Minimum 14 day interval.	12	21	5 ozs
RU Cobalt or Cobalt Adv.	19 – 38 ozs	Spray when needed.	24	21	126 ozs
Curacron 8E	0.25 – 0.5 pt	Apply at high rate for heavy populations.	48	14 days with water 30 days with oil carrier	5 pts
Danitol 2.4	10.67 – 16 ozs	Spray when needed.	24	21	42.6 ozs
Dimethoate 400	0.25 – 1.0 pts	Spray when needed.	48	14	0.5 lbs
RU Endigo ZC	4.5 – 5.5 ozs	Spray when needed. Do not graze livestock to treated fields.	24	21	13.5 ozs
Fastac EC	2.6 - 3.6 ozs	Spray when needed.	12	14	11.4 ozs
RU Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
Intruder 70 WSP	1.1 oz	Spray when needed. Suppression only for Lygus species.	12	28	9 ozs
RU Lannate LV	1.5 pts	Spray when needed. May reddens cotton.	48	15	6 pts
Leverage	3.8 – 5.0 ozs	Spray when needed.	12	14	25 ozs



# COTTON INSECT CONTROL-POSTPLANT



## Plant Bugs (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban or Lorsban Advanced or Warhawk	0.375 – 1.0 pts	Spray when needed. Not for use in Mississippi.	24	14	6 pts
RU Mustang Max	2.64 – 4.0 ozs	Spray when needed.	12	14	24 ozs
RU Stallion	9.3 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs
Steward	9.2 – 11.3 ozs	Spray when needed.	12	14	45 ozs
RU Swagger	7.6 – 15.4 ozs	Spray when needed. Minimum appl. Interval is 7 days.	12	14	79.36 oz
Transform	1.5 – 2.25 ozs	Spray when needed.	24	14	8.5 ozs
Trimax Pro	0.9 – 1.8 ozs	Spray when needed. Not effective on Lygus species.	12	14	8.9 ozs
Vydate C-LV	4.25 – 17 ozs	Spray when needed. Apply in 6-8 day intervals.	48	14	102 ozs

## Spider Mites

RU Agri-Mek or Agri-Mek SC	8 – 16 ozs 1 – 3.5 ozs 8 – 16 ozs	Apply when mites are spreading. Use lower rates in early season.	12	20	32 ozs 7 ozs 32 ozs
RU Athena	10 – 17 ozs	Spray when needed.	12	20	42 ozs
Bidrin 8	1.6-8 ozs	Spray when needed.	6 days	30	16 ozs
Brigade or Sniper	3.8 – 6.4 ozs	Spray when needed.	12	14	32 ozs
Curacron 8E	0.5 – 0.75 pt	Spray when needed. appear. Respray at 5-7 day intervals if needed.	48	14 days with water 30 days with oil carrier	5 pts
Danitol 2.4	10.67 – 16 ozs	Spray when needed.	24	21	42.6 ozs
RU Hero	10.3 ozs	Spray when needed.	12	14	46.3 ozs
Zeal	0.66 – 1 oz	Spray when needed. Do not apply more than 1 oz per acre in a season.	12	28	1 oz

## Stink Bugs

Acephate 90 WDG	0.83 lbs	Apply when eggs first appear, and repeat application using 7 day spray intervals.	24	21	4 lbs
Asana XL	5.8 – 9.6 ozs	Spray when weevil populations are threatening. Repeat if needed 3-5 days apart.	12	21	42.2 ozs
Baythroid XL or Tombstone or Tombstone Helios	1.6 – 2.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Besiege	6.5 – 12.5 ozs	Spray when needed.	24	21	31 ozs



# COTTON INSECT CONTROL-POSTPLANT



## Stink Bugs (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Bidrin 8	4 – 8 ozs	See label for uses.	6 days	30	16 ozs
Brigade or Sniper	2.6 – 6.4 ozs	Spray when needed.	12	14	32 ozs
<b>RU</b> Brigadier	3.8 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
Consero	32 Ac/container	See label for uses.	24	28	14.4/10.2 ozs
Dimethoate 400	0.25 – 1.0 pts	See label for uses.	48	14	0.5 lbs
<b>RU</b> Endigo ZC	4.5 – 5.5 ozs	Use 6 oz for brown stink bugs.	24	21	13.5 ozs
Fastac EC	2.6 – 3.6 ozs	Spray when needed.	12	14	11.4 ozs
<b>RU</b> Hero	5.2 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
<b>RU</b> Karate with Zeon <b>RU</b> Warrior II with Zeon	1.6 – 2.56 ozs	Spray when needed.	24	21	12.8 ozs
<b>RU</b> Mustang Max	2.64 – 4.0 ozs	Spray when needed.	12	14	24 ozs
<b>RU</b> Stallion	9.3 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs

## Thrips – Seed Treatments

Aeris	25.6 ozs/cwt	See label for uses.			5.4 lbs
Avicta Duo	17 ozs/cwt	See label for uses.			
<b>RU</b> Cruiser 5FS	10.7 ozs/cwt	See label for uses.	12	21	34 grms.
Gaucho or Dyna-Shield Imidacloprid 5	12.8 ozs/cwt	See label for uses.	12		0.5 lbs

## Thrips - Foliar Sprays

Acephate 90 WDG	3.2 ozs	Apply when eggs first appear, repeat as necessary to maintain control.	24	21	4 lbs
Baythroid XL or Tombstone or Tombstone Helios	0.8 – 1.6 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Besiege	5-6 ozs	Spray when needed.	24	21	31 ozs
Bidrin 8	1.6-3.2 ozs	Spray when needed.	6 days	30	3.2 ozs
Brigade or Sniper	1.3 – 6.4 ozs	Spray when needed.	12	14	32 ozs
<b>RU</b> Brigadier	5.1 – 7.7 ozs	Spray when needed.	12	14	39.6 ozs
<b>RU</b> Centric 40 WG	2.0 – 2.5 ozs	Check for reapplication at 10 days	12	21	5 fl. ozs



# COTTON INSECT CONTROL-POSTPLANT



## Thrips - Foliar Sprays (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt or Cobalt Adv.	19 – 38 ozs	Spray when needed.	24	21	126 ozs
Consero	45 – 32 Ac/container	See label for uses.	24	28	14.4/10.2 ozs
Dimethoate 400	0.25 – 1.0 pts	Spray when needed. Reapply after 14 days if needed.	48	14	0.5 lbs
Fastac EC	1.3 - 1.9 ozs	Spray when needed.	12	14	11.4 ozs
RU Hero	3.6 – 10.3 ozs	Spray when needed.	12	14	46.3 ozs
Intruder 70 WSP	0.8-1.1 oz	Spray when needed.	12	28	9 ozs
RU Karate with Zeon	.96 – 1.28 ozs	Spray when needed.	24	21	12.8 ozs
RU Warrior II with Zeon					
Leverage	3.0 – 5.0 ozs	Spray when needed.	12	14	25 ozs
RU Mustang Max	2.64 – 3.6 ozs	Spray when needed.	12	14	24 ozs
RU Radiant	1.5 – 3.0 ozs	Spray when needed.	4	28	34 ozs
RU Stallion	3.75 – 11.75 ozs	Spray when needed.	24	14	35.25 ozs

## Whitefly

Acephate 90 WDG	0.5-1.1 lb s	Repeat application as necessary to maintain control.	24	21	4 lbs
Baythroid XL or Tombstone or Tombstone Helios	3.2 ozs	Spray when needed. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12	0	32 ozs
Centric 40 WG	2.0 – 2.5 ozs	Control may require the use of 2 applications 5-10 days apart.	12	21	5 ozs
Courier 40 SC	9.0 – 12.5 ozs	See label for uses.	12	14	24.9 ozs
RU Endigo ZC	5.0-6.0 ozs	See label for uses.	24	21	13.5 ozs
Danitol 2.4 + Acephate 90 WDG	8.0 – 16 ozs + 8.0 – 16 ozs	See label for uses.	24	21	42.6 ozs + 4 lbs
Fastac EC	2.8 - 3.8 ozs	Spray when needed.	12	14	11.4 ozs
RU Hero	10.3 ozs	Spray when needed.	12	14	46.3 ozs
Knack	8.0 – 10.0 ozs	See label for uses.	12	28	10 ozs
Oberon 2	8.0 – 16.0 ozs	See label for uses.	12	30	32 ozs
Transform	2.0 – 2.25 ozs	Spray when needed.	24	14	8.5 ozs
Venom 70 WDG	1 – 3 ozs	See label for uses.	12	14	6 ozs



## SOYBEAN INSECT CONTROL-POSTPLANT



## BEAN LEAF BEETLE

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	5.8-9.6 ozs.	Repeat as necessary. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.†	†.8-1.6 ozs./A rate for application to VC-V2. For longer residual control, use higher rate in rate range. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	21 days††	.088 lb. a.i.†††
Belay® 2.13 EC	3-4 ozs.†	†Valent U.S.A. recommends a high quality NIS at 0.25% v/v.	12 hr.	21 days	.2 lb. a.i.
RU Besiege	5-8 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	30 days	20 ozs/A
RU Cobalt 2.5EC	19-38 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	1.66 lb. a.i.
RU Cobalt Advanced	16-38 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	† †59 ozs. product (1.15 lb. a.i. chlorpyrifos and .06 lb. a.i. lambda-cyhalothrin) and no more than 3 app./yr.
RU Declare	.77-1.28 ozs.	Refer to label for grazing restrictions.	24 hr.	45 days	.03 lb. a.i.
Dimethoate 400	1 pt.	Do not graze within 5 days of last application.	48 hr.	21 days	-
RU Endigo® ZC	3.5-4.5 ozs.†	†Use the higher rate for longer residual.	24 hr.	30 days	† †9 ozs. product or 0.06 lb. a.i. lambda-cyhalothrin containing products or 0.125 lb. a.i. thiamethoxam containing products.
RU Fastac™ EC	2.8-3.8 oz./A	Use higher specified dosage for increased pest pressure, increased residual pest control or later season applications.	12 hr.	21 days	0.075 lb. a.i.
RU Hero	2.6-6.1 ozs.	Do not graze or harvest treated soybean forage, straw or hay for livestock feed. May apply by chemigation.	12 hr.	21 days	.4 lb. a.i.



# SOYBEAN INSECT CONTROL-POSTPLANT



## BEAN LEAF BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lannate LV	.75-1.5 pts.†	†Refer to label.	48 hr.	14 days†	1.35 lb. a.i.
				††Forage PHI=3 days; Hay PHI=12 days	
RU Leverage® 360	2.8 ozs.	Crop oil concentrate is recommended with Leverage in all cases. A high quality COC is recommended for ground applications.	12 hr.	45 days†	.1 lb. a.i. cyfluthrin + .14 lb. a.i. imidicloprid (11.4 ozs. product)
				†Green forage may be fed 15 days after last application.	
RU Lorsban Advanced or RU Warhawk 4E	1-2 pts.	Refer to label for grazing restrictions and application methods.	24 hr.	28 days	3 lb. a.i.†
					†Lorsban Advanced: 2.82 lb. a.i.
RU Match-Up	5.5-16.4 ozs.	See product label for additional restrictions and instructions.	24 hr.	28 days	49.2 ozs.
RU Mustang Maxx	2.8-4 ozs.	Use higher rate in rate range for increased pest pressure, increased residual pest control, or later season applications.	12 hr.	21 days	.15 lb. a.i.
				Do not graze or harvest treated forage, straw or hay for livestock feed.	
Orthene® 90S	.83-1.1 lbs.	Supplemental label. Insecticide is in a water soluble bag.	24 hr.	14 days	1.5 lb. a.i.
RU Penncap-M	2-3 pts.	May be applied by chemigation. Refer to label for detailed use instructions and restrictions. Do not apply during pollen shed if bees are in the area.	4-5 days†	20 days	1.5 lb. a.i.
			†Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days		
RU Permethrin	2-4 ozs.	-	12 hr.	60 days	.4 lb. a.i.
RU Proaxis	1.92-3.2 ozs.	Use a rate in the lower end of the rate range for early season applications and/or lighter populations.	24 hr.	45 days	.03 lb. a.i.
				Do not graze or harvest treated soybean forage, straw or hay for livestock feed.	
RU Seeker™	1.6-2.6 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
RU Sniper® 2EC	2.1-6.4 ozs./A	Refer to label for detailed instructions and grazing restrictions. For distribution and use only within the state of IA, IL, IN, WI, MN, MI, MS, OH, KY, ND, SD, NE, KS.	24 hr.	18 days	.3 lb. a.i.



# SOYBEAN INSECT CONTROL-POSTPLANT



## BEAN LEAF BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Stallion	5-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	28 days	.35.25 ozs./A
RU Swagger™	7.6-12.2 ozs.	Refer to label for grazing restrictions. Multiple modes of action.	12 hr.	18 days	.19 lb. a.i.
RU Warrior II	.96-1.6 ozs.†	Chemigation option available. With Zeon Technology.	24 hr.	30 days	.06 lb. a.i.

## GRASSHOPPERS

RU Asana XL	3.9-9.6 ozs.†	†1st and 2nd instar, use 3.9-5.8 ozs./A; later stages use 5.8-9.6 ozs./A. Repeat as necessary. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2-2.8 ozs.	Use lower rates for nymphs and higher rates for adult grasshoppers. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	21 days†	.088 lb. a.i. ††
RU Besiege	8-10 ozs.	Corn  Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	30 days	20 ozs/A
RU Cobalt 2.5EC	7-13 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	1.66 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	†
RU Declare	1.28-1.54 ozs.	Refer to label for grazing restrictions.	24 hr.	45 days	.03 lb. a.i.
Dinemethoate 400	1 pt.	Do not graze within 5 days of last application.	48 hr.	21 days	-
RU Endigo ZC	3.5-4.5 ozs.†	†Use the higher rate for longer residual.	24 hr.	30 days	†
					†9 ozs. product or 0.06 lb. a.i. lambda-cyhalothrin containing products or 0.125 lb. a.i. thiamethoxam containing products.



# SOYBEAN INSECT CONTROL-POSTPLANT



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Fastac™ EC	3.2-3.8 oz./A	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.	12 hr.	21 days	0.075 lb. a.i.
RU Hero	2.6-6.1 ozs.	Do not graze or harvest treated soybean forage, straw or hay for livestock feed. May apply by chemigation.	12 hr.	21 days	.4 lb. a.i.
RU Leverage 360	2.8 ozs.	A high quality COC is recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	45 days† †Green forage may be fed 15 days after last application.	.07 lb. a.i. $\beta$ -cyfluthrin + .14 lb. a.i. imidicloprid (9 ozs. product)
RU Lorsban Advanced or RU Warhawk 4E	.5-1 pt.	Refer to label for grazing restrictions and application methods.	24 hr.	28 days	3 lb. a.i.† †Lorsban Advanced: 2.82 lb. a.i.
RU Match-Up	5.5-16.4 ozs.	See product label for additional restrictions and instructions.	24 hr.	28 days	49.2 ozs.
RU Mustang Maxx	3.2-4 ozs.	The addition of 1-2 qts./A of emulsified oil to the spray solution may improve spray deposition and insect control. Do not graze or harvest treated forage, straw or hay for livestock feed.	12 hr.	21 days	.15 lb. a.i. Do not graze or harvest treated forage, straw or hay for livestock feed.
Orthene® 90S	.28-.56 lbs.	Supplemental label. Insecticide is in a water soluble bag.	24 hr.	14 days	1.5 lb. a.i.
RU Penncap-M	2-3 pts.	Use higher rate in rate range if insects are large or weather is cool. May be applied by chemigation. Do not apply during pollen shed if bees are in the area.	4-5 dayst †Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days	20 days	1.5 lb. a.i.
RU Proaxis	3.2-3.84 ozs.	-	24 hr.	45 days	.03 lb. a.i. Do not graze or harvest treated forage, straw or hay for livestock feed.
RU Seeker™	2.6-3.1 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
RU Stallion	5-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	28 days	35.25 ozs./A



# SOYBEAN INSECT CONTROL-POSTPLANT



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Swagger	7.6-12.2 ozs.	Refer to label for grazing restrictions. Multiple modes of action.	12 hr.	18 days	.19 lb. a.i.
RU Warrior II	1.28-1.92 ozs.†	Chemigation option available. With Zeon Technology.	24 hr.	30 days	.06 lb. a.i.

## GREEN CLOVERWORM

RU Asana XL	2.9-5.8 ozs.	Repeat as necessary. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	.8-1.6 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	21 days†	.088 lb. a.i.††
Belt	2-3 ozs.	-	12 hr.	1 day (immature seed), 14 days (dry seed) and 3 days (forage and hay)	.188 lb. a.i.
RU Besiege	5-8 ozs.	Corn Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	30 days	20 ozs/A
RU Cobalt 2.5EC	7-13 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	1.66 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	†
RU Endigo ZC	2.5-3.5 ozs.†	†Use the higher rate for longer residual.	24 hr.	30 days	†
RU Fastac™ EC	2.8-3.8 oz./A	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.	12 hr.	21 days	0.075 lb. a.i.
RU Hero	2.6-6.1 ozs.	Do not graze or harvest treated soybean forage, straw or hay for livestock feed. May apply by chemigation.	12 hr.	21 days	.4 lb. a.i.



## SOYBEAN INSECT CONTROL-POSTPLANT



## GREEN CLOVERWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Intrepid Edge™	4 -6.4 fl oz/A	Refer to label for detailed instructions	4 hr.	28 days	27.75 fl oz
RU Lannate LV	2/5-1.5 pts.†	†Refer to label	48 hr.	14 days††	1.35 lb. a.i.
				††Forage =3 days; Hay=12 days	
RU Leverage 360	2.8 ozs.	A high quality COC is recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	45 day†	.07 lb. a.i. β-cyfluthrin + .14 lb. a.i. imidicloprid (9 ozs. product)
RU Lorsban Advanced or Warhawk 4E	.5-1 pt.	Refer to label for grazing restrictions and application methods.	24 hr.	28 days	3 lb. a.i.†
RU Match-Up	5.5-16.4 ozs.	See product label for additional restrictions and instructions.	24 hr.	28 days	49.2 ozs.
RU Mustang Maxx	2.8-4 ozs.	The addition of 1-2 qts./A of emulsified oil to the spray solution may improve spray deposition and insect control. Do not graze or harvest treated forage, straw or hay for livestock feed. Chemigation option available.	12 hr.	21 days	.15 lb. a.i.
				Do not graze or harvest treated forage, straw or hay for livestock feed.	
Orthene 90S	.83-1.1 lb.	Supplemental label. Insecticide is in a water soluble bag.	24 hr.	14 days	1.5 lb. a.i.
RU Penncap-M	2-3 pts.	May be applied by chemigation. Do not apply during pollen shed if bees are in the area.	4-5 day†	20 days	1.5 lb. a.i.
			†Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days		
RU Permethrin	2-4 ozs.	-	12 hr.	60 days	.4 lb. a.i.
RU Proaxis	1.92-3.2 ozs.	-	24 hr.	45 days	.03 lb. a.i.
				Do not graze or harvest treated forage, straw or hay for livestock feed.	
RU Seeker™	1-6-2.6 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
RU Stallion	5-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	28 days	35.25 ozs./A



# SOYBEAN INSECT CONTROL-POSTPLANT



## GREEN CLOVERWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Steward® EC	5.6-11.3 ozs.	Do not feed or graze livestock on treated fields.	12 hr.	21 days	.44 lb. a.i.
RU Swagger	7.6-12.2 ozs.	Refer to label for grazing restrictions. Multiple modes of action.	12 hr.	18 days	.19 lb. a.i.
RU Warrior II	1.28-1.92 ozs.†	Chemigation option available. With Zeon Technology.	24 hr.	30 days	.06 lb. a.i.

## SOYBEAN APHID

RU Asana XL	5.8-9.6 ozs.	Repeat as necessary. Refer to label for tankmix options. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	2-2.8 ozs.	For longer residual control, use higher rate in rate range. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	21 days†	.088 lb. a.i.††
				†Dry vines may be fed 45 days and green forage may be fed 15 days after application.	††For Baythroid XL; .175 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	5-8 ozs.	Corn  Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	30 days	20 ozs/A
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	—	12 hr.	18 days	.3 lb. a.i.
RU Cobalt 2.5EC	13-26 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	1.66 lb. a.i.
RU Cobalt Advanced	11-26 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	†
					†59 ozs. product (1.15 lb. a.i. chlorpyrifos and .06 lb. a.i. lambda-cyhalothrin) and no more than 3 app./yr.
Dimethoate 400	1 pt.	Do not graze within 5 days of last application.	48 hr.	21 days	-
RU Endigo ZC	2.5-3.5 ozs.†	†Use lower rates for early season applications and/or lighter populations. Use the higher rate for longer residual control. Do not graze or harvest treated soybean forage, straw or hay for livestock feed.	24 hr.	30 days	Do not exceed 9 ozs. of product, 0.06 lb. a.i. lambda-cyhalothrin containing products or 0.125 lb. a.i. of thiamethoxam containing products.
RU Fastac™ EC	2.8-3.8 oz./A	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.	12 hr.	21 days	0.075 lb. a.i.



# SOYBEAN INSECT CONTROL-POSTPLANT



## SOYBEAN APHID (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Hero	4-10.3 ozs.	Do not graze or harvest treated soybean forage, straw or hay for livestock feed. May apply by chemigation.	12 hr.	21 days	.4 lb. a.i.
RU Lannate LV	.5-1 pt.	Chemigation option available. For control of larvae.	48 hr.	14 days††	1.35 lb. a.i.
RU Leverage 360	2.8 ozs.	A high quality COC is recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	45 days†	.07 lb. a.i. $\beta$ -cyfluthrin + .14 lb. a.i. imidicloprid (9 ozs. product)
RU Lorsban Advanced or RU Warhawk 4E	1-2 pts.	Refer to label for grazing restrictions and application methods.	24 hr.	28 days	3 lb. a.i.†
RU Match-Up	5.5-16.4 ozs.	See product label for additional restrictions and instructions.	24 hr.	28 days	49.2 ozs.
RU Mustang Maxx	2.8-4 ozs. .83-1.1 lb.	The addition of 1-2 qts./A of emulsified oil to the spray solution may improve spray deposition and insect control. Do not graze or harvest treated forage, straw or hay for livestock feed. Chemigation option available.	12 hr.	21 days	.15 lb. a.i.
Orthene 90S		Supplemental label. Insecticide is in a water soluble bag.	24 hr.	14 days	1.5 lb. a.i.
RU Penncap-M	1-3 pts.	May be applied by chemigation. Refer to label for detailed use instructions and restrictions. Do not apply during pollen shed if bees are in the area.	4-5 dayst†	20 days	1.5 lb. a.i.
RU Proaxis	1.92-3.2 ozs.	-	24 hr.	45 days	.03 lb. a.i.
RU Seeker™	1-6-2.6 fl oz/acre	-	24 hr.	30 days	6.1 fl oz



# SOYBEAN INSECT CONTROL-POSTPLANT



## SOYBEAN APHID (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Sniper	2.1-6.4 ozs.	-	12 hr.	18 days	.3 lb. a.i.
RU Stallion	5-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	28 days	35.25 ozs./A
RU Swagger	7.6-12.2 ozs.	Refer to label for grazing restrictions. Multiple modes of action.	12 hr.	18 days	.19 lb. a.i.
Transform® WG	0.75 -1 fl oz./A	Refer to label for detailed instructions.	24 hr.	7 days	8 fl. ozs.
RU Warrior II	1.28-1.92 ozs.	Refer to label for resistance statement. With Zeon Technology.	24 hr.	30 days	.06 lb. a.i.

## SPIDER MITES

RU Brigade 2EC or RU Sniper 2EC	5.12-6.4 ozs.	Refer to label for detailed information and grazing restrictions.	12 hr.	21 days	.2 lb. a.i.
RU Besiege	10 ozs.	Corn  Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	30 days	20 ozs/A
RU Cobalt 2.5EC	13-26 ozs.	Supplemental label. Do not graze treated areas. Refer to label for full grazing/feeding restrictions.	24 hr.	30 days	1.66 lb. a.i.
RU Cobalt Advanced	11-26 ozs.	Broadcast foliar or chemigation.	24 hr.	30 days	†  †59 ozs. product (1.15 lb. a.i. chlorpyrifos and .06 lb. a.i. lambda-cyhalothrin) and no more than 3 app./yr.
RU Declare	1.54 ozs.	Refer to label for grazing restrictions.	24 hr.	45 days	.03 lb. a.i.
Dimethoate 400	1 pt.	Do not graze within 5 days of last application.	48 hr.	21 days	-
RU Endigo ZC	4-4.5 ozs.†	†Suppression only. Use the higher rate for longer residual.	24 hr.	30 days	†  †9 ozs. product or 0.06 lb. a.i. lambda-cyhalothrin containing products or 0.125 lb. a.i. thiamethoxam containing products.



## SPIDER MITES (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Hero	10.3 ozs.	Do not graze or harvest treated soybean forage, straw or hay for livestock feed. May apply by chemigation.	12 hr.	21 days	.4 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	.5-1 pt.	Refer to label for grazing restrictions and application methods.	24 hr.	28 days	3 lb. a.i.†
					†Lorsban Advanced: 2.82 lb. a.i.
RU Match-Up	13.2-16.4 ozs.	See product label for additional restrictions and instructions.	24 hr.	28 days	49.2 ozs.
RU Proaxis	3.84 ozs.	Suppression only listed on label.	24 hr.	45 days	.03 lb. a.i.
				Do not graze or harvest treated forage, straw or hay for livestock feed.	
RU Seeker™	3.1 fl oz/acre	-	24 hr.	30 days	6.1 fl oz
RU Swagger	7.6-12.2 ozs.	For control of two-spotted spider mite. Refer to label for grazing restrictions. Multiple modes of action.	12 hr.	18 days	.19 lb. a.i.
RU Warrior II	1.92 ozs.	Suppression only listed on label. With Zeon Technology.	24 hr.	30 days	.06 lb. a.i.

## ALFALFA-INSECT CONTROL

Spraying some insecticides on alfalfa blooms can be extremely hazardous to bees. Coordinate with local beekeepers before applying insecticides.

## ALFALFA WEEVIL

RU Baythroid XL or RU Tombstone Helios or Tombstone	1.6-2.8 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days†	.175 lb. a.i.††
				†PHI or pre-grazing	††For Baythroid XL; .2 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Do not apply more than 9 ozs/cutting.	24 hr.	1-7 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				1 day-forage 7 days - hay	
RU Cobalt® 2.5EC	19-38 ozs. (larvae and adults)	This product is highly toxic to bees. Refer to the label.	24 hrs.	14-21† days	3 lb. a.i.††
				†13 ozs.=7 days. 26 ozs.=14 days. >26 ozs.=21 days. PHIs are for cutting or grazing.	††Maximum of 4 applications of 38 ozs./A for this pest.



## ALFALFA-INSECT CONTROL

Spraying some insecticides on alfalfa blooms can be extremely hazardous to bees. Coordinate with local beekeepers before applying insecticides.



### ALFALFA WEEVIL (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt Advanced	16-38 ozs.	Broadcast foliar or chemigation. This product is highly toxic to bees.	24 hr.	†	††
				†Dependent upon use rate: 7 days for 6-13 ozs./A, 14 days for 13-26 ozs./A, and 21 days for >26 ozs./A.	††119 ozs. product (2.3 lb. a.i. chlorpyrifos and .12 lb. a.i. lambda-cyhalothrin).
RU Fastac™ EC	2.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	3 days, 7 days for seed harvest	0.075 lb. a.i.
Imidan 70-W	All states except AZ, CA and NV† 1-1.33 lbs.	†Refer to label for use rate in these states. For control of common and Egyptian alfalfa weevil larvae and adults.	5 days	7 days†	--
				†Except AZ, CA and NV; refer to label.	
RU Lannate LV	3 pts.	Chemigation option available. For control of larvae.	48 hr.	7 days†	3.6 lb. a.i.
				†Refer to label.	
RU Lorsban Advanced or RU Warhawk 4E	1-2 pts. (larvae and adults)	Highly toxic to bees.	24 hr.	7-21 days†	1 lb. a.i.††,†††
				†8 ozs.=7 days 16 ozs.=14 days >16 ozs.=21 days	††Maximum single application. †††Lorsban Advanced: 0.94 lb. a.i. (Maximum single application)
Malathion 57 EC	1.5-2.25 pts. (larve)	Chemigation option available. Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the field or are not hanging on the outside of hives.	12 hr.	0 days	-
RU Mustang Maxx	2.24-4 ozs. (control of certain species only; control may be variable, refer to label)	Chemigation option available. Use higher rate in rate range for increased pest pressure or to achieve longer residual control. May be applied to mixed stands (alfalfa + other legumes or grass crops).	12 hr.	3 days (cutting or grazing) 7 days (harvesting seed)	.075 lb. a.i.



## ALFALFA-INSECT CONTROL

Spraying some insecticides on alfalfa blooms can be extremely hazardous to bees. Coordinate with local beekeepers before applying insecticides.



### ALFALFA WEEVIL (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Permethrin	4-8 ozs.	Use higher recommended dosage for increased pest pressure or for increased residual pest control.	12 hr.	0 days	.2 lb. a.i.†
					†Maximum allowable application per cutting.
RU Proaxis	2.56-3.84 ozs. (certain species only)	Chemigation option available. See resistance statements on the label.	24 hr.	1 day (forage) 7 days (hay)	.06 lb. a.i.
RU Stallion	9.25-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	7 days	35.25 ozs./A
Steward EC	4-6.7 ozs. 6.7-11.3 ozs. (larvae)	Rates for 10-14 days residual control. Rates for 14-21 days residual control. Lower rates on light to moderate infestations or high rates on heavier infestations or when later instar larvae exist. Use highest recommended rate for controlling severe infestations. See 2(ee) label for other restrictions	12 hr.	7 days	.44 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	Bee warnings, refer to label. With Zeon Technology.	24 hr.	1 day (forage) 7 days (hay)	.12 lb. a.i.

### APHIDS

RU Baythroid XL or Tombstone Helios or Tombstone	2.8 ozs.	Suppression only. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days†	.175 lb. a.i.††
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Do not apply more than 9 ozs/cutting.	24 hr.	1-7 days	††For Baythroid XL; .2 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
				1 day-forage 7 days - hay	
RU Cobalt 2.5EC	13-38 ozs.† †Specific rates for each aphid species, refer to label.	This product is highly toxic to bees. Refer to the label.	24 hr.	7-21 days††	2.9 lb. a.i.
				††13 ozs.=7 days 26 ozs.=14 days >26 ozs.=21 days PHIs are for cutting or grazing.	



## ALFALFA-INSECT CONTROL



### APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Cobalt Advanced	11-38 ozs.	Broadcast foliar or chemigation. This product is highly toxic to bees.	24 hr.	†	††
				†Dependent upon use rate: 7 days for 6-13 ozs./A, 14 days for 13-26 ozs./A, and 21 days for >26 ozs./A.	††119 ozs. product (2.3 lb. a.i. chlorpyrifos and .12 lb. a.i. lambda-cyhalothrin).
Dimethoate 400	.5-1 pt.	This product is highly toxic to bees. Refer to the label.	48 hr.	10 days†	††
				†Harvesting or pasturing.	††No more than 1 application per cutting.
RU Fastac™ EC	2.2-3.8 oz./A	Use higher specified dosage for increased pest pressure or for increased residual pest control. Control variable depending on species present and host-plant relationships.	12 hr.	3 days, 7 days for seed harvest	0.075 lb. a.i.
RU Lannate LV	1.5-3 pts.	Do not apply to dormant or semi-dormant alfalfa when min. daily temperature is 50 degrees F or lower.	48 hr.	7 days†	3.6 lb. a.i.
				†Refer to label.	
RU Lorsban Advanced or RU Warhawk 4E	1-2 pts.† †Specific rates for each aphid species, refer to label.	Highly toxic to bees.	12 hr.	7-21 days††	1 lb. a.i. †††, ††††
				††8 ozs.=7 days 16 ozs.=14 days >16 ozs.=21 days	†††Maximum single application. ††††Lorsban Advanced: 0.94 lb. a.i. (Maximum single application)
Malathion 57 EC	1.5-2.25 pts.† †Specific rates for each aphid species, refer to label.	Chemigation option available. Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the field or are not hanging on the outside of hives.	12 hr.	0 days	-
RU Mustang Maxx	2.24-4 ozs.† †Specific rates for each aphid species, refer to label.	Chemigation option available. Use higher rate in rate range for increased pest pressure or to achieve longer residual control. May be applied to mixed stands (alfalfa + other legumes or grass crops).	12 hr.	3 days (cutting or grazing) 7 days (harvesting seed)	.075 lb. a.i.
RU Permethrin	2-8 ozs.† †Certain species only, refer to label.	Use higher recommended dosage for increased pest pressure or for increased residual pest control.	12 hr.	0 days	.2 lb. a.i.††
					††Maximum allowable application per cutting.
RU Proaxis	2.56-3.84 ozs.† †Certain species only, refer to label.	Chemigation option available. See resistance statements on the label.	24 hr.	1 day (forage) 7 days (hay)	.06 lb. a.i.



## APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Stallion	9.25-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	7 days	35.25 ozs./A
RU Warrior II	1.28-1.92 ozs.†	Bee warnings; refer to label. Resistance management statement on label. With Zeon Technology. †Certain species only, refer to label.	24 hr.	1 day (forage) 7 days (hay)	.12 lb. a.i.

## GRASSHOPPERS

RU Baythroid XL or Tombstone Helios or Tombstone	2-2.8 ozs.	Use higher rate for heavier infestation and larger grasshoppers. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone Helios or Tombstone (cyfluthrin).	12 hr.	7 days† †PHI or pre-grazing	.175 lb. a.i.†† ††For Baythroid XL; .2 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Do not apply more than 9 ozs/cutting.	24 hr.	1-7 days 1 day-forage 7 days - hay	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Cobalt 2.5EC	7-13 ozs.	This product is highly toxic to bees. Refer to the label.	24 hrs.	7-21 days† †13 ozs.=7 days 26 ozs.=14 days >26 ozs.=21 days PHIs are for cutting or grazing.	2.9 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	Broadcast foliar or chemigation. This product is highly toxic to bees.	24 hr.	† †Dependent upon use rate: 7 days for 6-13 ozs./A, 14 days for 13-26 ozs./A, and 21 days for >26 ozs./A.	††119 ozs. product (2.3 lb. a.i. chlorpyrifos and .12 lb. a.i. lambda-cyhalothrin).
RU Fastac™ EC	2.8-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	3 days, 7 days for seed harvest	0.075 lb. a.i.
Dimethoate 400	.5-1 pt.	This product is highly toxic to bees. Refer to the label.	48 hr.	10 days† †Harvesting or pasturing.	2 lb. a.i.†† ††Using highest rate for grasshopper control times maximum number of applications (4). No more than 1 application per cutting.



# ALFALFA-INSECT CONTROL



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban Advanced or RU Warhawk 4E	.5-1 pts.	Highly toxic to bees.	12 hr.	7-21 days†	1 lb. a.i.††, †††
				†8 ozs.=7 days 16 ozs.=14 days >16 ozs.=21 days	††Maximum single application. †††Lorsban Advanced: 0.94 lb. a.i. (Maximum single application)
Malathion 57 EC	1.5-2.25 pts.	Chemigation option available. Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the field or are not hanging on the outside of hives.	12 hr.	0 days	-
RU Methyl 4EC	.5-1 pts.	Do not apply to alfalfa if the crop or weeds in treatment area are in bloom.	4 days	15 days	6 lbs. a.i.
RU Mustang Maxx	2.8-4 ozs.	Chemigation option available. Use higher rate in rate range for increased pest pressure or increased residual pest control. May be applied to mixed stands (alfalfa + other legumes or grass crops).	12 hr.	3 days (cutting or grazing) 7 days (harvesting seed)	.075 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	Chemigation option available.	24 hr.	1 day (forage) 7 days (hay)	.06 lb. a.i.
RU Stallion	9.25-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	7 days	35.25 ozs./A
RU Warrior II	1.28-1.92 ozs.	Bee warnings; refer to label. With Zeon Technology.	24 hr.	1 day (forage) 7 days (hay)	.12 lb. a.i.

## POTATO LEAFHOPPER

RU Baythroid XL or RU Tombstone Helios or RU Tombstone	.8-1.6 ozs.†	†Use higher rate for heavier infestation or longer residual. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days††	.175 lb. a.i.†††
				††PHI or pre-grazing	†††For Baythroid XL: .2 lbs. a.i./A for Tombstone Helios and Tombstone.
RU Besiege	5-8 ozs.	Toxic to bees, see label for bee precautions. Do not apply more than 9 ozs/ cutting.	24 hr.	1-7 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				1 day-forage 7 days - hay	
RU Cobalt 2.5EC	7-13 ozs.	This product is highly toxic to bees. Refer to the label.	24 hr.	14-21 days†	2.9 lb. a.i.
				†13 ozs.=7 days 26 ozs.=14 days >26 ozs.=21 days This is for cutting or grazing.	



## POTATO LEAFHOPPER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
<b>RU</b> Cobalt Advanced	6-13 ozs.	Broadcast foliar or chemigation. This product is highly toxic to bees.	24 hr.	7 days for 6-13 ozs./A, 14 days for 13-26 ozs./A, and 21 days above 26 ozs./A.	119 fl. oz. per year
Dimethoate 400	.5-1 pt.	This product is highly toxic to bees. Refer to the label.	48 hr.	10 days† †Harvesting or pasturing.	.5 lb. a.i.† ††No more than 1 application per cutting, 3 per season.
<b>RU</b> Fastac™ EC	2.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	3 days, 7 days for seed harvest	0.075 lb. a.i.
<b>RU</b> Lorsban Advanced or <b>RU</b> Warhawk 4E	.5-1 pts.	This product is highly toxic to bees.	24 hr.	7-21 days† †8 ozs.=7 days 16 ozs.=14 days >16 ozs.=21 days	1 lb. a.i.††, ††† ††Maximum single application. †††Lorsban Advanced: 0.94 lb. a.i. (Maximum single application)
Malathion 57 EC	1.5-2.25 pts.	Chemigation option available. Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the field or are not hanging on the outside of hives.	12 hr.	0 days	-
<b>RU</b> Mustang Maxx	2.24-4 ozs.	Chemigation option available. Use higher rate in rate range for increased pest pressure or increased residual pest control. May be applied to mixed stands (alfalfa + other legumes or grass crops).	12 hr.	3 days (cutting or grazing) 7 days (harvesting seed)	.075 lb. a.i.
<b>RU</b> Permethrin	4-8 ozs.	Use higher recommended dosage for increased pest pressure or for increased residual pest control.	12 hr.	0 days	.2 lb. a.i.† †Maximum allowable application per cutting.
<b>RU</b> Proaxis	1.92-3.2 ozs.	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.	24 hr.	1 day (forage) 7 days (hay)	.06 lb. a.i.
<b>RU</b> Stallion	5-11.75 ozs./A	Refer to label for detailed instructions and grazing restrictions. Not for use in Mississippi.	24 hr.	7 days	35.25 ozs./A
<b>RU</b> Warrior II	.96-1.6 ozs.	Bee warnings; refer to label. Chemigation option available. With Zeon Technology.	24 hr.	1 day (forage) 7 days (hay)	.12 lb. a.i.



## EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



### APHIDS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	5.8-9.6 ozs.	Do not feed or graze live-stock on treated vines.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	3.2 ozs.†	†Suppression of pea aphid only. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	.05 lb. a.i.††
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.†	†For control of beet aphid only.	12 hr.	14 days	
RU Brigadier	3.8-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	1.02-1.54 ozs.	Refer to label for further restrictions.	24 hr.	7 days†	.06 lb. a.i.
Dimethoate 400	.5-1 pt.	This pesticide is highly toxic to bees. Chemigation option available. Do not feed treated vines.	48 hr.	0 days	-
RU Fastac™ EC	3.2-3.9 oz./A	Use higher specified dosage for increased pest pressure or for increased residual pest control. Control variable depending on species present and host-plant relationships.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Labeled for use in succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	1.5-3 pts.	Labeled for use in succulent and dry beans.	48 hr.	†, ††	4.5 lb. a.i.
				†Succulent beans: .75-1.5 pts.-1 day >1.5 pts.-3 days vines - 3 days hay - 7 days ††Dry beans: beans, vine & hay- Do not apply within 14 days of cutting.	



## EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



### APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
Malathion 8-E	1-1.5 pts.	Do not graze or feed treated crop forage.	12 hr.	1 day	-
Movento	4-5 ozs.	For edible and succulent shelled beans and dried shelled beans. See label for complete list.	7 days	1 day†	10 ozs. a.i.
				†Edible podded and succulent beans. 7 days PHI for dry shelled beans.	
RU Mustang Maxx	3.2-4 ozs.	See resistance statements on label. Aphid control may be variable depending on species and host-plant relationship.	12 hr.	21 days†	.15 lb. a.i.
				†Dried shelled beans; 1 day PHI for edible shelled or succulent podded.	
Orthene 75S	.66-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	.2 lb. a.i.
				†Snapbeans, (succulent or dry); 0 days for lima beans (succulent).	
RU Penncap-M	2 pts.	May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days†	20 days	1.5 lb. a.i.
			†Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days		
RU Proaxis	2.56-3.84 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. See resistance statement on label.	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
RU Swagger	7.6-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Thionex® 3EC	.66-1.33 pts.†	†Black bean aphid only.	24 hr.	3 days	3 lb. a.i.
Transform WG	0.75 -1 fl oz/A	Refer to label for further instructions.	24 hr.	7 days	8.5 fl oz
RU Warrior II	1.28-1.92 ozs.	Refer to label for resistance statement. For use in succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†	.12 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	



# EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



## BEAN LEAF BEETLE

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Baythroid XL or Tombstone Helios	2.4-3.2 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	†
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	†.05 lbs./A For Baythroid XL; .1 lb./A for Tombstone Helios.
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
RU Brigadier®	5.1-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	1.02-1.54 ozs.	Refer to label for resistance statement.	24 hr.	7 days†	.06 lb. a.i.
Dimethoate 400	.5-1 pt.	This pesticide is highly toxic to bees. Chemigation option available. Do not feed treated vines.	48 hr.	0 days	-
RU Fastac™ EC	2.7-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Labeled for use in succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
Malathion 5	2 pts.	Do not graze or feed treated crop forage.	12 hr.	1 day	-
RU Mustang Maxx	2.72-4 ozs.	-	12 hr.	21 days†	.15 lb. a.i.
Orthene 75S	.66-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
				†Snapbeans, (succulent or dry); 0 days for lima beans, succulent.	



## EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



### BEAN LEAF BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Proaxis	2.56-3.84 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	
RU Swagger	10.2-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†	.12 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	

### CUTWORMS

RU Asana XL	5.8-9.6 ozs.	For use in succulent snap beans only and many dry bean species. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	.8-1.6 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	† †.05 lbs./A For Baythroid XL; .1 lb. a.i./A for Tombstone Helios and Tombstone.
Belt	2-3 ozs.	Apply BELT SC Insecticide in sufficient water volume that provides thorough coverage of plant foliage and fruit.	12 hr. Pre-harvest Interval	Edible podded and succulent shelled peas and beans - 1 day; Dry peas and beans - 14 days; Forage, hay and vines - 3 days.	.188 lb. a.i.
RU Besiege	5-8 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days 7 days – edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
RU Brigadier	5.1-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	.77-1.28 ozs.	-	24 hr.	7 days† †Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	.06 lb. a.i.



## EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



### CUTWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Fastac™ EC	1.3-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Labeled for use in succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	1.5 pts.	Varigated cutworm control on succulent and dry beans.	48 hr.	†	4.5 lb. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	1.28-4 ozs.	-	12 hr.	21 days†	.15 lb. a.i.
Orthene 75S	.66-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
				†Snap beans, (succulent or dry); 0 days for lima beans (succulent).	
RU Proaxis	1.92-3.2 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days†	.06 lb. a.i.
RU Swagger	10.2-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	1.6 ozs.	For use in succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†	.12 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	



# EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



## EUROPEAN CORN BORER

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	5.8-9.6 ozs.	For use in succulent snap beans only and many dry bean species. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	2.4-3.2 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	†
					†.05 lbs./A for Baythroid XL; .1 lb. a.i./A for Tombstone Helios and Tombstone.
Belt	2-3 ozs.	Apply BELT SC Insecticide in sufficient water volume that provides thorough coverage of plant foliage and fruit.	12 hr. Pre-harvest Interval	Edible podded and succulent shelled peas and beans - 1 day; Dry peas and beans - 14 days; Forage, hay and vines - 3 days.	.188 lb. a.i.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				7 days - edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	
Blackhawk	1.7-3.3 ozs./A	For use in succulent and dry beans. See label for resistance management notes. Dry beans, do not feed forage to meat or dairy animals.	4 hr.	3 days†	†For succulent beans; 28 days for dried beans. / .045 lb. a.i. † / For succulent beans; 0.188 lb ai for dried beans
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
RU Brigadier	5.1-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.
Coragen	3.5-5 ozs.	Apply no more than 4 applications/a/crop. Use no more than 15.4 floz/a/crop. Max allowable is 0.2 lbs ai of chlorantraniliprole containing products per acre per crop.	4 hr.	1 day	15.4 floz/a/crop
RU Declare	1.02-1.54 ozs.	For control before larvae bore into the plant stalk or pods.	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
RU Fastac™ EC	2.7-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.



## EDIBLE BEANS-INSECT CONTROL (LIMA, NAVY, RED KIDNEY, SNAP)



### EUROPEAN CORN BORER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Hero	4-10.3 ozs.	Labeled for use in succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	1.5-3 pts.	Refer to edible beans section of label for PHIs.	48 hr.	† Refer to edible beans-insect control, APHIDS for PHIs.	4.5 lbs. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	2.72-4 ozs.	-	12 hr.	21 days†	.15 lb. a.i.
				†Dried shelled beans; 1 day PHI for edible shelled or succulent podded.	
Orthene 75S	1-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
				†Snap beans, succulent or dry; 0 days for lima beans succulent.	
RU Penncap-M	2-4 pts.	May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days† †Ave. annual rainfall: <25"/yr=5 days; 25"+/yr=4 days	15 days	3 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	For use in succulent and dried shelled beans. Control before borers bore into plants. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days† †Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	.06 lb. a.i.
Radiant®	3-8 ozs.	For use in succulent and dry beans. Refer to label for resistance management notes.	4 hr.	3 days† †Succulent beans; 28 day PHI for dried beans.	.219 lb. a.i.†† ††Succulent beans; .094 lb. a.i. for dried beans.
RU Swagger	10.2-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days† †Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	.12 lb. a.i.



# EDIBLE BEANS-INSECT CONTROL

(LIMA, NAVY, RED KIDNEY, SNAP)



## GRASSHOPPERS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	5.8-9.6 ozs.	For use in succulent snap beans only and many dry bean species. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	2.4-3.2 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	† †.05 lbs./A for Baythroid XL; .1 lb. a.i./A for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or Sniper 2EC	1.6-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
RU Brigadier	3.8-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	1.02-1.54 ozs.	-	24 hr.	7 days†	.06 lb. a.i.
Dimethoate 400	.5-1 pt.	This product is highly toxic to bees. Chemigation option available. Do not feed treated vines.	48 hr.	0 days	-
RU Fastac EC	3.2-3.9 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Labeled for use in succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	3.2-4 ozs.	-	12 hr.	21 days†	.15 lb. a.i.
				†Dried shelled beans; 1 day PHI for edible shelled or succulent podded.	



# EDIBLE BEANS-INSECT CONTROL

(LIMA, NAVY, RED KIDNEY, SNAP)



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Orthene 75S	.33-.66 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
				†Snapbeans, succulent or dry; 0 days for lima beans, succulent.	
RU Penncap-M	2-4 pts.†	†Use higher rates if the majority of grasshoppers are large or the weather is cool.	4-5 days††	15 days	-
			††Ave. annual rainfall <25" /yr=5 days; 25"+/yr=4 days		
RU Proaxis	2.56-3.84 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	
RU Swagger	7.6-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†	.12 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	

## GREEN CLOVERWORM

RU Baythroid XL or Tombstone Helios or Tombstone	2.4-3.2 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	
					†.05 lbs./A For Baythroid XL; .1 lb. a.i./A for Tombstone Helios and Tombstone.
RU Belt	2-3 ozs.	Apply BELT SC Insecticide in sufficient water volume that provides thorough coverage of plant foliage and fruit.	12 hr. Pre-harvest Interval	7 days	.188 lb. a.i.
RU Besiege	5-8 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				7 days – edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
RU Brigadier	5.1-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.



# EDIBLE BEANS-INSECT CONTROL

(LIMA, NAVY, RED KIDNEY, SNAP)



## GREEN CLOVERWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Declare	.77-1.28 ozs.	-	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
DiPel ES or XenTari	1-2 pts. or .5-1.5 lbs.	Treat when larvae are young and before economic threshold damage have been exceeded. XenTari is for organic production.	4 hr.	0 days	-
RU Fastac EC	2.7-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Labeled for use in succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	2.72-4 ozs.	-	12 hr.	21 days†	
				†Dried shelled beans; 1 day PHI for edible shelled or succulent podded.	
Orthene 75S	.66-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	
				†Snapbeans, succulent or dry; 0 days for lima beans, succulent.	
RU Penncap-M	2 pts.	May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days†	15 days	
			†Ave. annual rainfall <25"/yr=5 days; 25"+/yr=4 days		
RU Proaxis	1.92-3.2 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	
RU Swagger	10.2-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	.96-1.6 ozs.	For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†	.12 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI is 21 days.	



# EDIBLE BEANS-INSECT CONTROL

(LIMA, NAVY, RED KIDNEY, SNAP)



## LEAFHOPPERS AND PLANT BUGS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	Leafhoppers 2.9-9.6 ozs.	For use in succulent snap beans only and many dry bean species. Do not feed or graze livestock on treated fields.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	Potato leafhopper .8-1.6 ozs. Tarnished plant bug† 1.6-2.4 ozs. <i>Lygus</i> bug 2.4-3.2 ozs.	†See resistance statements on label. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	.05 lbs. a.i.†† ††For Baythroid XL; .1 lb. a.i./A for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or RU Sniper 2EC	Leafhoppers 1.6-6.4 ozs. Alfalfa plant bug 2.1-6.4 ozs. <i>Lygus</i> 5.12-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
RU Brigadier	3.8-5.5 ozs.	Succulent beans only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	1.02-1.54 ozs.	For plant bugs, including <i>Lygus</i> , refer to label for resistance statements.	24 hr.	7 days†	.06 lb. a.i.
Dimethoate 400	Leafhoppers & <i>Lygus</i> bug .5-1 pt.	This pesticide is highly toxic to bees. Chemigation option available. Do not feed treated vines.	48 hr.	0 days	-
RU Fastac EC	2.7-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	Leafhoppers 4-10.3 ozs.	Labeled for use on succulent beans.	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	Leafhoppers .75-3 pts. <i>Lygus</i> bug 1.5-3 pts.	For use in succulent and dry beans.	48 hr.	Refer to Edible Beans section for labels for PHIs.	4.5 lbs. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock. Leafhopper and tarnished plant bug control only.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)



# EDIBLE BEANS-INSECT CONTROL

(LIMA, NAVY, RED KIDNEY, SNAP)



## LEAFHOPPERS AND PLANT BUGS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Malathion 8-E	<u>Leafhoppers</u> 1-1.5 pts.	Do not graze or feed treated crop forage.	12 hr.	1 day	-
<b>RU</b> Mustang Maxx	<u>Leafhoppers &amp; Plant bugs</u> 2.72-4 ozs. <u>Lygus bug</u> 3.2-4 ozs.	-	12 hr.	21 days†	.15 lb. a.i.
				†Dried shelled beans; 1 day PHI for edible shelled or succulent podded.	
Orthene 75S	<u>Leafhoppers &amp; Lygus bug</u> .66-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
				†Snapbeans, (succulent or dry); 0 days for lima beans, (succulent).	
<b>RU</b> Penncap-M	<u>Leafhoppers &amp; Lygus bug</u> 2 pts.	May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days†  †Ave. annual rainfall <25"/yr=5 days; 25"+/yr=4 days	15 days	3 lb. a.i.
<b>RU</b> Proaxis	<u>Leafhoppers &amp; Plant bugs†</u> (including Lygus) 2.56-3.84 ozs.	†See resistance statement on label. For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days†	.06 lb. a.i.
Provado® 1.6F or Sherpa®	<u>Leafhoppers</u> 3.5 ozs.	-	12 hr.	7 days	.13 lb. a.i.
<b>RU</b> Swagger	7.6-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
Transform WG	1.5-2.25 fl oz/A	Refer to label for further instructions.	24 hr.	7 days	8.5 fl oz
<b>RU</b> Warrior II	<u>Plant bugs†</u> (including Lygus) 1.28-1.92 ozs.	†See resistance statement regarding plant bugs, including Lygus. For use in succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†  †Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	.12 lb. a.i.
<b>SPIDER MITES</b>					
<b>RU</b> Brigade 2EC or <b>RU</b> Sniper 2EC	5.12-6.4 ozs.	-	12 hr.	14 days	.3 lb. a.i.
<b>RU</b> Besiege	10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days  7 days – edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.



# EDIBLE BEANS-INSECT CONTROL

(LIMA, NAVY, RED KIDNEY, SNAP)



## SPIDER MITES (cont.)

<b>RU</b>	Declare	1.54 ozs.	Suppression only.	24 hr.	7 days†	.06 lb. a.i.
					†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
	Dimethoate 400	.5-1 pt.	This product is highly toxic to bees. Chermigation option available. Do not feed treated vines.	48 hr.	0 days	-
<b>RU</b>	Hero	4-10.3 ozs.	Labeled for use on succulent beans.	12 hr.	3 days	.266 lb. a.i.
	Malathion 8-E	1-1.5 pts.	Do not graze or feed treated crop forage.	12 hr.	1 day	-
<b>RU</b>	Proaxis	3.84 ozs.†	†Suppression only. For succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	7 days†	.06 lb. a.i.
					†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
<b>RU</b>	Warrior II	1.92 ozs.†	†Suppression only. For use in succulent and dried shelled beans. Do not graze livestock in treated areas or harvest vines for forage or hay. With Zeon Technology.	24 hr.	7 days†	.12 lb. a.i.

## WHITEFLIES

	Acephate 90SP	.25-5 lb.	Not for control of sweet potato or silverleaf whiteflies. Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
					†Snap, succulent or dry beans; for lima beans (succulent) PHI=0 days	
<b>RU</b>	Fastac EC	3.2-3.9 oz./A	Suppression only. See resistance statement on label.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
	Movento	4-5 ozs.	For edible and succulent shelled beans and dried shelled beans. See label for complete list.	7 days	1 day†	10 ozs. a.i.
					†Edible podded and succulent beans. 7 days PHI for dry shelled beans.	
<b>RU</b>	Orthene 75S	.66-1.33 lbs.	Do not feed treated vines to livestock.	24 hr.	14 days†	2 lb. a.i.
					†Snapbeans, succulent or dry; 0 days for lima beans, succulent.	
<b>RU</b>	Swagger	10.2-11 ozs.	For use in succulent beans. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.



## PEAS-INSECT CONTROL



### APHID

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	5.8-9.6 ozs.†	†For control of pea and soybean aphid. Do not feed or graze livestock on treated vines. For use in dry and green peas.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	3.2 ozs.†	†Suppression only; for control of pea aphid only. Do not feed treated vines or hay to livestock. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	.05 lb. a.i.††
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	3 days	.2 lb. a.i.
RU Brigadier	3.8-5.5 ozs.	Succulent peas only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	1.02-1.54 ozs.	Refer to label for resistance statement.	24 hr.	7 days†	.06 lb. a.i.
Dimethoate 400	.33-1 pt.	This pesticide is highly toxic to bees.	48 hrs.	0 days†	.5 lb. a.i.
RU Fastac EC	3.2-3.8 oz./A	Use higher specified dosage for increased pest pressure or for increased residual pest control. Control variable depending on species present and host-plant relationships.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	-	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	1.5-3 pts.	-	48 hr.	†	2.7 lbs. a.i.
				†Peas: 1 day Forage: 5 days Hay: 14 days	



## PEAS-INSECT CONTROL



### APHID (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
Malathion 57E	1.5-2 pts.	Do not graze or feed treated crop to livestock.	12 hr.	3 days	-
Movento	4-5 ozs.	For edible and succulent shelled peas and dried shelled peas. See label for complete list.	7 days	1 day†	10 ozs. a.i.
				†Edible podded and succulent peas. 7 days PHI for dry shelled peas.	
RU Mustang Maxx	3.2-4 ozs.	See resistance statement on label. Control may be variable depending on aphid species present and host-plant relationships.	12 hr.	21 days†	.15 lb. a.i.
				†Dried shelled peas. The PHI for succulent shelled or edible podded peas is 1 day.	
RU Proaxis	2.56-3.84 ozs.	See resistance statement on label. For succulent and dried shelled peas, do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	21 days†	.06 lb. a.i.
				†Dried shelled legume vegetables. The PHI for edible-podded and succulent shelled legume vegetables is 7 days.	
RU Swagger	7.6-11 ozs.	For use in succulent peas. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	See resistance statement on label. With Zeon Technology.	24 hr.	21 days†	.12 lb. a.i.
				†Dried shelled peas. The PHI for edible-podded and succulent shelled peas is 7 days.	

### ARMYWORMS

RU Asana XL	5.8-9.6 ozs.	†For aid in control of beet armyworm only. Do not feed or graze livestock on treated vines. For use in dry and green peas.	12 hr.	21 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2.4-3.2 ozs.†	†For control of 1st and 2nd instar larvae of the following armyworms only: beet, fall and yellow-striped. Do not feed treated vines or hay to livestock. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	.05 lb. a.i.††
					††For Baythroid XL; .1 lb. a.i./A is maximum for Tombstone Helios and Tombstone.



## PEAS-INSECT CONTROL



### ARMYWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Belt	2-3 ozs.	Apply BELT SC Insecticide in sufficient water volume that provides thorough coverage of plant foliage and fruit.	12 hr. Pre-harvest Interval	Edible podded and succulent shelled peas and beans - 1 day; Dry peas and beans - 14 days; Forage, hay and vines - 3 days.	.188 lb. a.i.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				7 days – edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	
Blackhawk	2.2-3.3 ozs./A	For use in succulent and dry peas. See label for resistance management notes. Dry pea, do not feed forage to meat or dairy animals.	4 hr.	3 days†	†For succulent peas; 28 days for dried peas. / 0.45 lb. a.i. † / †for succulent peas; 0.188 lb ai for dried peas.
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.†	†For control of the following armyworms only: beet, fall, yellowstriped and Southern armyworms.	12 hr.	3 days	.2 lb. a.i.
Coragen	3.5-5 ozs.	For control beet armyworm, and fall armyworm. Apply no more than 4 applications/a/crop. Minimum interval between treatments is 3 days. Use no more than 15.4 floz/a/crop. max allowable is 0.2 lbs ai of chlorantraniliprole containing products per acre per crop.	4 hr.	1 day	15.4 floz/a/crop
RU Declare	1.02-1.54 ozs.	Use higher rates for large larvae.	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
DiPel DF or DiPel ES or XenTari	1-2 pts. or 2-4 pts. or .5-2 lbs.	DiPel DF and XenTari are for use in organic production. May be used to control small armyworms and/or podworms (1st and 2nd instar) when populations are light and full coverage sprays are applied. Repeat treatment as necessary.	4 hr.	0 days	-
RU Fastac EC	2.7-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.



## PEAS-INSECT CONTROL



### ARMYWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Hero	4-10.3 ozs.	For control of the following armyworms only: beet, fall, Southern, true, yellowstriped.	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	.75-3 pts.†	†True armyworm. †Rate for beet armyworm is 1.5-3 pts./A.	48 hr.	Peas: 1 day Forage: 5 days Hay: 14 days	2.7 lbs. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	2.72-4 ozs.	For control of the following armyworms only: Southern, true and yellowstriped.	12 hr.	21 days†	.15 lb. a.i.
RU Proaxis	2.56-3.84 ozs.†	†The 3.84 ozs./A rate is needed for suppression of beet armyworm; refer to resistance statement on label for this pest. For control of 1st and 2nd instar larvae only. Includes control of fall, Western yellowstriped and yellowstriped armyworms. For succulent and dried shelled peas, do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	21 days††	.06 lb. a.i.
				††Dried shelled legume vegetables. The PHI for edible-podded and succulent shelled legume vegetables is 7 days.	
Radiant	4-8 ozs.† †Certain species only.	For use in succulent and dry peas. See label for resistance management notes.	4 hr.	28 days††	.219 lb. a.i.†††
				††Dried peas. The PHI for succulent peas is 3 days.	†††For succulent peas. The max. allowable product/A/season for dried peas is .094 lb. a.i.
RU Swagger	10.2-11 ozs.	For use in succulent peas. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	1.28-1.92 ozs.†	†Use higher rate within rate range for large larvae. With Zeon Technology.	24 hr.	21 days††	.12 lb. a.i.
				††Dried shelled peas. The PHI for edible-podded and succulent shelled peas is 7 days.	

### CUTWORMS

RU Asana XL	5.8-9.6 ozs.	Do not feed or graze livestock on treated fields. For use in dry and green peas.	12 hr.	21 days	.2 lb. a.i.



## PEAS-INSECT CONTROL



### CUTWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Belt	2-3 ozs.	Apply BELT SC Insecticide in sufficient water volume that provides thorough coverage of plant foliage and fruit.	12 hr. Pre-harvest Interval	Edible podded and succulent shelled peas and beans - 1 day; Dry peas and beans - 14 days; Forage, hay and vines - 3 days.	.188 lb. a.i.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				7 days - edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	3 days	.2 lb. a.i.
RU Brigadier	5.1-5.5 ozs.	Succulent peas only.	12 hr.	7 days	.26 lb. a.i.
RU Declare	.77-1.28 ozs.	-	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	
RU Fastac EC	1.3-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	-	12 hr.	3 days	.266 lb. a.i.
RU Lannate LV	1.5-3 pts.†	†Varigated cutworm only.	48 hr.	Peas: 1 day Forage: 5 days Hay: 14 days	2.7 lbs. a.i.
RU Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	1.28-4 ozs.	-	12 hr.	21 days†	.15 lb. a.i.
				†Dried shelled peas. The PHI for succulent shelled or edible podded peas is 1 day.	



## PEAS-INSECT CONTROL



### CUTWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Proaxis	1.92-3.2 ozs.	For succulent and dried shelled peas, do not graze livestock in treated areas or harvest vines for forage or hay.	12 hr.	21 days†	.06 lb. a.i.
				†Dried shelled legume vegetables. The PHI for edible-podded and succulent shelled legume vegetables is 7 days.	
RU Swagger	10.2-11 ozs.	For use in succulent peas. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
RU Warrior II	.96-1.6 ozs.	With Zeon Technology.	24 hr.	21 days†	.12 lb. a.i.
				†Dried shelled peas. The PHI for edible-podded and succulent shelled peas is 7 days.	

### LOOPERS

RU Baythroid XL or Tombstone Helios or Tombstone	2.4-3.2 ozs.†	†Suppression only for soybean looper and control of cabbage looper. Do not feed treated vines or hay to livestock. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	.05 lb. a.i.††
RU Belt	2-3 ozs.	Apply BELT SC Insecticide in sufficient water volume that provides thorough coverage of plant foliage and fruit.	12 hr. Pre-harvest Interval	Edible podded and succulent shelled peas and beans - 1 day; Dry peas and beans - 14 days; Forage, hay and vines - 3 days.	.188 lb. a.i.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
				7 days – edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	
Blackhawk	1.7-3.3 ozs./A	For use in succulent and dry peas. See label for resistance management notes. Dry pea, do not feed forage to meat or dairy animals.	4 hr.	3 days†	†For succulent peas; 28 days for dried peas. / 0.45 lb. a.i. ††For succulent peas; 0.188 lb ai for dried peas.
RU Brigade 2EC or Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	3 days	.2 lb. a.i.
RU Declare	1.02-1.54 ozs.	-	24 hr.	7 days†	.06 lb. a.i.
				†Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	



## PEAS-INSECT CONTROL



### LOOPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Dipel DF or Dipel ES or XenTari	.5-1 lb. or 1-2 pts. or .5-1.5 lbs.	Dipel DF and XenTari are for use in organic production.	4 hr.	0 days	-
<b>RU</b> Fastac EC	3.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control. See resistance statement on label.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
<b>RU</b> Hero	4-10.3 ozs.	-	12 hr.	3 days	.266 lb. a.i.
<b>RU</b> Lannate LV	1.5-3 pts.†	†Refer to label for looper species.	48 hr.	Peas: 1 day Forage: 5 days Hay: 14 days	2.7 lbs. a.i.
<b>RU</b> Leverage 360	2.4-2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
<b>RU</b> Mustang Maxx	3.2-4 ozs.	See resistance statement on label.	12 hr.	21 days†	.15 lb. a.i.
<b>RU</b> Proaxis	2.56-3.84 ozs.	For succulent and dried shelled peas, do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	21 days†	.06 lb. a.i.
				†Dried shelled legume vegetables. The PHI for edible-podded and succulent shelled legume vegetables is 7 days.	
Radiant	4-8 ozs.	For use in succulent and dry peas. See label for resistance management notes.	4 hr.	28 days†	.219 lb. a.i.††
				†Dried peas. The PHI for succulent peas is 3 days.	††For succulent peas. The max. allowable product/A/season for dried peas is .094 lb. a.i.
<b>RU</b> Swagger	10.2-11 ozs.	For use in succulent peas. Multiple modes of action.	12 hr.	7 days	.26 lb. a.i.
<b>RU</b> Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	21 days†	.12 lb. a.i.
				†Dried shelled peas. The PHI for edible-podded and succulent shelled peas is 7 days.	



## PEAS-INSECT CONTROL



### STINKBUGS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1.6-2.4 ozs.	Do not feed treated vines or hay to livestock. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	7 days	.05 lb. a.i.† †For Baythroid XL; .1 lb. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Toxic to bees, see label for bee precautions. Minimum interval between applications is five days.	24 hr.	7-21 days 7 days – edible podded and succulent legume vegetables 21 days- dried shelled legume vegetables	0.12 lb. a.i. of Lambda-Cyhalothrin containing products or 0.2 lb. a.i. Chlorantraniliprole containing products.
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.	-	12 hr.	3 days	.2 lb. a.i.  
RU Declare	1.02-1.54 ozs.	-	24 hr.	7 days† †Edible podded and succulent shelled; for dried shelled legume vegetables PHI=21 days.	.06 lb. a.i.
RU Fastac EC	3.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day Succulent shelled or edible podded bean. Dried shelled: 21 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	-	12 hr.	3 days	.266 lb. a.i.  
RU Leverage 360	2.8 ozs.	High quality COC recommended for ground applications. Do not feed vines or hay to livestock.	12 hr.	7 days	0.05 lb. a.i. β-cyfluthrin and .1 lb. a.i. imidacloprid (6.4 ozs. product/A)
RU Mustang Maxx	3.2-4 ozs.	-	12 hr.	21 days† †Dried shelled peas. The PHI for succulent shelled or edible-podded peas is 1 day.	.15 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	For succulent and dried shelled peas, do not graze livestock in treated areas or harvest vines for forage or hay.	24 hr.	21 days† †Dried shelled legume vegetables. The PHI for edible-podded and succulent shelled legume vegetables is 7 days.	.06 lb. a.i.



## PEAS-INSECT CONTROL



### STINKBUGS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	21 dayst	.12 lb. a.i.
				†Dried shelled peas. The PHI for edible-podded and succulent shelled peas is 7 days.	

## POTATO-INSECT CONTROL

### APHIDS

Actara®	3 ozs.	-	12 hr.	14 days	.094 lb. a.i.
Actara® 2F or Admire Pro	13-20 ozs. or 5.7-8.7 ozs.	Several methods of application available (in-furrow spray during planting directed on the seed pieces or seed potatoes, subsurface sidedress, band spray during hillling, band spray before planting); refer to label.	12 hr.	-	.31 lb. a.i.
RU Asana XL	5.8-9.6 ozs.	For control of certain aphid species only; refer to label.	12 hr.	7 days	.35 lb. a.i.
RU Athena	10-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2.8 ozs.†	†Suppression only. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.††
Belay® SC	Foliar 1.9-2.8 ozs. <u>In-furrow or sidedress</u> 7.2-12 ozs.	See label for specific information.	12 hr.	14 days	.2 lb. a.i.
Beleaf® 50 SG	2-2.8 ozs.†	†Use lower rate for building populations; use higher rate for greater pops and/or dense foliage. Soft on beneficials.	12 hr.	7 days	.267 lb. a.i.
RU Brigadier	3.18-6.14 ozs.	-	12 hr.	21 days	.4 lb. a.i.
Dimethoate 400	.5-1 pt.	-	48 hr.	0 days	-
RU Fastac EC	3.2-3.8 oz./A	Suppression only. Aphid control may be variable depending on the species present and host-plant relationships. See resistance statement on label.	12 hr.	1 day	0.075 lb. a.i.



## POTATO-INSECT CONTROL



### APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Endigo ZC	4-4.5 ozs.†	†Use higher rates on heavier infestations. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Endosulfan 3EC	.66-1.33 qts.	Make applications when insects appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
Fulfill 50WDG	2.75-5.5 ozs.†	†For control of certain aphid species only; refer to label. MUST use organo-silicone surfactant	12 hr.	14 days	11 oz. product
RU Hero	4-10.3 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
RU Lannate LV	1.5-3 pts.	May be applied by overhead chemigation.	48 hr.	6 days	4.5 lbs. a.i.
RU Leverage® 360	2.8 ozs.	Apply as pest population begins to build and prior to buildup of damaging levels. For control in crop with dense canopy, use ground application equipment, which will provide thorough coverage of lower leaves. Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	† †.1 lb. a.i. β-cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)
Movento®	4-5 ozs.†	†Must be tank-mixed with a spray adjuvant/additive for optimum results. Refer to label.	24 hr.	7 days	0.16 lb. a.i. (10 ozs. product)
RU Penncap-M	4 pts.	For use in white potatoes.	4-5 days† †REI=4 days in areas with an average rainfall of 25+"/yr. and 5 days in areas with an average annual rainfall of <25"/yr.	5 days	3 lb. a.i.
Platinum® 75WG	1.66-2.67 ozs.†	†Use lower rate within the rate range for shorter residual control and higher rate within the rate range for longer residual control. Contains thiamethoxam insecticide. For New York State refer to label for specific guidelines, precautions and limitations.	12 hr.	-	.125 lb. a.i.
Provado 1.6 or Sherpa	3.8 ozs.	-	12 hr.	7 days	.2 lb. a.i.



## APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Thimet 20G	Light or sandy soils† 8.5-11.3 ozs./1000 row feet for any row spacing Heavy or clay soils† 13-17.3 ozs./1000 row feet for any row spacing	Rates for a minimum of a 32' row. †At planting or postemergence application. ††At planting application only.	48 hr.††† †††REI=72 hr. in areas where average annual rainfall is <25"/yr.	90 days	3.54 lb. a.i.
Tops MZ Gaucho	.75 lbs./100 lbs. cut potato seed pieces	Seed piece treatment.	24 hr.	-	-
Transform WG	.75-1.5 fl oz/A	Refer to label for further instructions.	24 hr.	7 days	8.5 fl oz
Voliam Flexi™ WDG	4 ozs.	Highly toxic to honey bees, use caution.	12 hr.	14 days	.094 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato:  Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
RU Vydate® C-LV	Foliar Treatment 17-34 ozs.	Repeat at 5-7 day intervals or as needed to maintain control. May be applied by overhead chemigation.	48 hr.	7 days	† †Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Vydate® L	Foliar Treatment 2-4 pts.	Use a low rate within the rate range for light infestations and a high rate within the rate range for a severe infestation. May be applied by overhead chemigation.	48 hr.	7 days.12 lb. a.i.	† †Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	Refer to label for resistance statement. With Zeon Technology.	24 hr.	7 days	

## CABBAGE LOOPER

RU Asana XL	5.8-9.6 ozs.	Do not feed or graze livestock on treated fields.	12 hr.	7 days	.35 lb. a.i.
RU Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1.6-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.† †For Baythroid XL; .263 lb. a.i./A is the maximum for Tombstone Helios and Tombstone.
Blackhawk	2.25-3.5 ozs./A	Do not make more than four applications. Do not make applications less than 7-days apart.	4 hr.	7 days	0.33 lb. a.i.



# POTATO-INSECT CONTROL



## CABBAGE LOOPER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Brigadier	4.8-6.14 fl. ozs.	Refer to label for detailed information.	12 hr.	21 days	.4 lb. a.i.
Coragen	3.5-5 ozs.	Foliar and chemigation application options. MSO adjuvant recommended. Make no more than 4 applications per acre per crop. Do not apply more than 15.4 fl oz CORAGEN® or 0.2 lbs a.i. of chlorantraniliprole containing products per acre per crop. The minimum interval between treatments is 5 days.	4 hr.	14 days	.2 lb. a.i.
DiPel ES or XenTari	.5-1 pt.	For organic production.	4 hr.	0 days	-
RU Fastac™ EC	1.8-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
RU Lannate LV	1.5-3 pts.	May be applied by overhead chemigation.	48 hr.	6 days	4.5 lbs. a.i.
RU Leverage® 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	†
					†.1 lb. a.i. β-cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)
RU Permethrin 3.2EC	4-8 ozs.	-	12 days	14 days	1.6 lbs. a.i.
Radiant	6-8 ozs.	Target eggs at hatch or small larvae. See label for resistance management notes.	4 hr.	7 days	.25 lb. a.i.
Voliam Flexi	4 ozs.	Highly toxic to honey bees, use caution.	12 hr.	14 days	.094 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato:  Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.

## COLORADO POTATO BEETLE

Actara®	1.5-3 ozs.	-	12 hr.	14 days	.094 lb. a.i.
Admire® 2F or Widow® or Admire Pro	13-20 ozs. or 13-20 ozs. or 5.7-8.7 ozs.	Several methods of application available (in-furrow spray during planting directed on the seed pieces or seed potatoes, subsurface sidedress, band spray during hilling, band spray before planting); refer to label.	12 hr.	-	.31 lb. a.i.



## POTATO-INSECT CONTROL



### COLORADO POTATO BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Agri-Mek® 0.15 EC or Reaper®	8-16 ozs.	Use 8-12 ozs./A for low to moderate infestations and 16 ozs./A for severe infestations. The addition of a NIS is recommended. Make 1st application after approximately 50% of the egg masses have hatched and larvae are present. If 2 apps. are needed, limit them to a single CO potato beetle generation per crop.	12 hr.	14 days	0.38 lb. a.i.
RU Agri-Mek® SC	1.75-3.5 ozs.†	†Use 1.75-2.5 ozs./A for low to moderate infestations and 3.5 ozs./A for severe infestations. Must mix with a NIS. Make 1st application after approximately 50% of the egg masses have hatched and larvae are present. If 2 apps. are needed, limit them to a single CO potato beetle generation.	12 hr.	14 days	.019 lb. a.i.
RU Asana XL	5.8-9.6 ozs.	-	12 hr.	7 days	.35 lb. a.i.
RU Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.†	†See label for insect resistance statement. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.††
Belay SC	Foliar 1.9-2.8 ozs. <u>In-furrow</u> or side-dress 7.2-12 ozs.	See label for specific information.	12 hr.	14 days	.2 lb. a.i.
RU Brigadier	4.8-6.14 ozs.	-	12 hr.	21 days	.4 lb. a.i.



## POTATO-INSECT CONTROL



### COLORADO POTATO BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Coragen	3.5-5 ozs.	Foliar and chemigation application options. MSO adjuvant recommended. Make no more than 4 applications per acre per crop. Do not apply more than 15.4 fl oz CORAGEN® or 0.2 lbs a.i. of chlorantraniliprole containing products per acre per crop. The minimum interval between treatments is 5 days. Colorado potato beetle resistance management: Do not apply CORAGEN® more than twice to a generation of Colorado potato beetle or within any 30 day period. Application(s) to the next generation of Colorado potato beetle must be with an effective product with a different mode of action. Do not apply CORAGEN® more than once to Colorado potato beetle via overhead chemigation. CORAGEN® may only be applied to potatoes as a direct foliar spray or via chemigation through overhead sprinkler irrigation systems.	4 hr.	14 days	.2 lb. a.i.
RU Endigo ZC	2.5-4.5 ozs.†	†Apply higher rates for heavier infestations. Control before insects penetrate plant. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Endosulfan 3EC	.66-1.33 qts.	Make applications when insects appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
RU Fastac EC	3.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
Imidan® 70-W	1.33 lbs.	Only use on potatoes harvested by machine.	24 hr.	-	14 lbs. product
RU Leverage 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 hr.	7 days	†
					†.1 lb. a.i. β-cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)



## POTATO-INSECT CONTROL



### COLORADO POTATO BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Penncap-M	2-6 pts.	For use in white potatoes.	4-5 days† †REI=4 days in areas with an average rainfall of 25+"/yr. and 5 days in areas with an average annual rainfall of <25"/yr.	5 days	3 lb. a.i.
RU Permethrin	4-8 ozs.	-	12 hr.	14 days	1.6 lb. a.i.
Platinum® 75SG	1.66-2.67 ozs.†	†Use lower rate within the rate range for shorter residual control and higher rate within the rate range for longer residual control. Contains thiamethoxam insecticide. For New York State refer to label for specific guidelines, precautions and limitations.	12 hr.	-	.125 lb. a.i.
Provado 1.6 or Sherpa	3.8 ozs.	-	12 hr.	7 days	.2 lb. a.i.
Radiant	4.5-8 ozs.	Target eggs at hatch or small larvae. See label for resistance management notes.	4 hr.	7 days	.25 lb. a.i.
Scorpion® 35SL	Foliar 2-2.75 ozs.† Soil 11-13 ozs.†	†Under severe pest pressure, use higher specified rates. Begin application when pest activity is 1st noticed or when insects reach threshold levels. Refer to label.	12 hr.	Foliar 7 days	.196 lb. a.i. Soil .33 lb. a.i.
SpinTor® 2SC	3-6 ozs.	Refer to label for resistance management guidelines.	12 hr.	7 days	.33 lb. a.i.
RU Thimet 20G	Light or sandy soils† 8.5-11.3 ozs./1000 row feet for any row spacing Heavy or clay soils† 13-17.3 ozs./1000 row feet for any row spacing	Rates for a minimum of a 32" row. †At planting and postemergence applications. †Postemergence application only.	48 hr.††† †††REI=72 hr. in areas where average annual rainfall is <25"/yr.	90 days	3.54 lb. a.i.



# POTATO-INSECT CONTROL



## COLORADO POTATO BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Venom®	Foliar Application 1-1.5 ozs. Soil Application 6.5-7.5 ozs.	-	12 hr.	7 days	.198 lb. a.i.† .33 lb. a.i.††
					†Maximum for foliar application. ††Maximum for soil application.
Voliam Flexi	4 ozs.	Highly toxic to honey bees, use caution.	12 hr.	14 days	.094 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato:	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
		Minimum interval between applications: 7 days			
RU Vydate® C-LV	Foliar Treatment 8.5-34 ozs.†	†Refer to label for chemigation rate. Repeat at 5-7 day intervals or as needed to maintain control. May be applied by overhead chemigation.	48 hr.	7 days	††
					††Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Vydate L	Foliar Treatment 1-4 pts.	Use a low rate within the rate range for light infestations and a high rate within the rate range for a severe infestation. May be applied by overhead chemigation.	48 hr.	7 day	†
					†Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	Refer to label for resistance statement. With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

## CUCUMBER BEETLE

RU Asana XL	5.8-9.6 ozs.†	†Adult control only. Refer to label.	12 hr.	7 days	.35 lb. a.i.
RU Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Brigade 2EC or RU Sniper 2EC	2.1-6.4 ozs.†	†Foliar application for adult control only; refer to label.	12 hr.	21 days	.5 lb. a.i.
RU Brigadier	4.8-6.14 ozs.	-	12 hr.	21 days	.4 lb. a.i.
RU Endigo ZC	3-4 ozs.†	†Adult control only. Apply higher rates for heavier infestations. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Fastac EC	1.8-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.



## POTATO-INSECT CONTROL



### CUCUMBER BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Hero	4-10.3 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato:	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
		Minimum interval between applications: 7 days			
RU Warrior II	1.28-1.92 ozs.†	†Adult control only. Refer to label.	24 hr.	7 days	.12 lb. a.i.

### CUTWORMS

RU Asana XL	5.8-9.6 ozs.	-	12 hr.	7 days	.35 lb. a.i.
RU Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or Tombstone Helios or Tombstone	.8-1.6 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.†
					†For Baythroid XL; .263 lbs. a.i./A is the maximum for Tombstone Helios and Tombstone.
RU DiPel ES or XenTari	.5-1 lb.	For organic production.	4 hr.	0 days	-
RU Endigo ZC	2.5-4.5 ozs.†	†Apply higher rates for heavier infestations. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Fastac EC	1.3-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
RU Hero	2.6-6.1 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
RU Lannate LV	1.5 pts.†	†Varigated cutworm control only. May be applied by overhead chemigation.	48 hr.	6 days	4.5 lbs. a.i.
RU Leverage® 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	†
					†.1 lb. a.i. β-cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)



## POTATO-INSECT CONTROL



### CUTWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Penncap-M	2-4 pts.	For use in white potatoes.	4-5 days†	5 days	3 lb. a.i.
RU			†REI=4 days in areas with an average rainfall of 25"/yr. and 5 days in areas with an average annual rainfall of <25"/yr.		
RU Permethrin 3.2EC	4-8 ozs.	-	12 hr.	14 days	1.6 lb. a.i.
RU Voltam Xpress	5-8 ozs./A	Potato: Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voltam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
RU Warrior II	.96-1.6 ozs.	With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

### EUROPEAN CORN BORER

RU Asana XL	5.8-9.6 ozs.	-	12 hr.	7 days	.35 lb. a.i.
RU Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1.6-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.†
					†For Baythroid XL; .263 lbs. a.i./A is the maximum for Tombstone Helios and Tombstone.
Blackhawk	1.7-3.5 ozs./A	Do not make more than four applications. Do not make applications less than 7-days apart.	4 hr.	7 days	0.33 lb. a.i.
Brigadier	4.8-6.14 fl. ozs.	Refer to label for detailed information.	12 hr.	21 days	.4 lb. a.i.
Coragen	3.5-5 ozs.	Foliar and chemigation application options. MSO adjuvant recommended. Make no more than 4 applications per acre per crop. Do not apply more than 15.4 fl oz CORAGEN® or 0.2 lbs a.i. of chlorantraniliprole containing products per acre per crop. The minimum interval between treatments is 5 days.	4 hr.	14 days	.2 lb. a.i.



## EUROPEAN CORN BORER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Endigo ZC	3-4 ozs.†	†Apply higher rates for heavier infestations. Control before insects penetrate plant. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Endosulfan 3EC	1-1.33 qts.	Make applications when insects appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
RU Fastac™ EC	1.8-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
Imidan 70-W	1.33 lbs.	Only use on potatoes to be harvested by machine.	24 hr.	-	14 lbs. product
RU Leverage 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	†
					† .1 lb. a.i. $\beta$ -cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)
RU Penncap-M	2-4 pts.	For use in white potatoes	4-5 days†	5 days	3 lb. a.i.
			†REI=4 days in areas with an average rainfall of 25+"/yr. and 5 days in areas with an average annual rainfall of <25"/yr.		
RU Permethrin	4-8 ozs.	-	12 hr.	14 days	1.6 lb. a.i.
Radiant	4.5-8 ozs.	Target eggs at hatch or small larvae. See label for resistance management notes.	4 hr.	7 days	.25 lb. a.i.
Voliam Flexi	4 ozs.	Highly toxic to honey bees, use caution.	12 hr.	14 days	.094 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato: Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.



# POTATO-INSECT CONTROL



## FLEA BEETLES

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Actara	1.5-3 ozs.	-	12 hr.	14 days	.094 lb. a.i.
Admire® 2F or Widow® or Admire Pro	13-20 ozs. or 13-20 ozs. or 5.7-8.7 ozs.	Several methods of application available (in-furrow spray during planting directed on the seed pieces or seed potatoes, subsurface sidedress, band spray during hilling, band spray before planting); refer to label.	12 hr.	-	.31 lb. a.i.
<b>RU</b> Asana XL	5.8-9.6 ozs.	-	12 hr.	7 days	.35 lb. a.i.
<b>RU</b> Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
<b>RU</b> Baythroid XL <b>RU</b> Tombstone Helios <b>RU</b> Tombstone	1.6-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.†
					†For Baythroid XL; .263 lbs. a.i./A is the maximum for Tombstone Helios and Tombstone.
Belay SC	Varies according to method of application.	Several methods of application available (foliar in-furrow, seed treatment); refer to label.	12 hr.	14 days	.2 lb. a.i.
<b>RU</b> Brigade 2EC <b>RU</b> Sniper 2EC	2.1-6.4 ozs.†	†Foliar application for adult control only; refer to label.	12 hr.	21 days	.5 lb. a.i.
<b>RU</b> Brigadier	4.8-6.14 ozs.	-	12 hr.	21 days	.4 lb. a.i.
<b>RU</b> Capture LFR	4.2-12.75 ozs.† †Layby application.	For control of flea beetle larvae. Refer to label.	12 hr.	-	.3 lb. a.i.††
					††At-plant application; .5 lb. a.i. for at-plant plus foliar applications.
<b>RU</b> Endigo ZC	2.5-4.5 ozs.†	†Use higher rates for heavier infestations. For adult flea beetle control. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
<b>RU</b> Endosulfan 3EC	.66-1.33 qts.†	†Potato flea beetle only; refer to label. Make applications when insects first appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
<b>RU</b> Fastac™ EC	1.8-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
<b>RU</b> Hero	2.6-6.1 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
Imidan 70-W	1.33 lbs.†	†Potato flea beetle only; refer to product label.	24 hr.	-	14 lbs. product



## FLEA BEETLES (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lannate LV	1.5 pts.	May be applied by overhead chemigation.	48 hr.	6 days	4.5 lbs. a.i.
RU Leverage 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	† †.1 lb. a.i. $\beta$ -cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)
RU Penncap-M	2-4 pts.	For use in white potatoes.  †REI=4 days in areas with an average rainfall of 25+"/yr. and 5 days in areas with an average annual rainfall of <25"/yr.	4-5 days†	5 days	3 lb. a.i.
RU Permethrin 3.2EC	4-8 ozs.†	†Potato flea beetle only; refer to label.	12 hr.	14 days	1.6 lb. a.i.
Platinum® 75WG	1.66-2.67 ozs.†	†Use lower rate within the rate range for shorter residual control and higher rate within the rate range for longer residual control. Make only one soil app./year. Contains thiamethoxam insecticide. For New York State refer to label for specific guidelines, precautions and limitations.	12 hr.	-	.125 lb. a.i.
Provado 1.6	3.8 ozs.	-	12 hr.	7 days	.2 lb. a.i.
RU Thimet 20G	Light or sandy soilst 8.5-11.3 ozs./1000 row feet for any row spacing Heavy or clay soilst 13-17.3 ozs./1000 row feet for any row spacing	†At planting application only. For control of larvae and reduction of adults only. Rates for a minimum of a 32" row.	48 hr.†† ††REI=72 hr. in areas where average annual rainfall is <25"/yr.	90 days	3.54 lb. a.i.
Tops MZ Gaucho	.75 lbs./100 lbs. cut potato seed pieces	Seed piece treatment.	24 hr.	-	-
Venom®	Foliar Application 1-1.5 ozs. Soil Application 6.5-7.5 ozs.	Under severe pest pressure, use higher rate within rate range.	12 hr.	7 days	.198 lb. a.i.† .33 lb. a.i.†† †Maximum for foliar application. ††Maximum for soil application.
Voliam Flexi	4 ozs.	Highly toxic to honey bees, use caution.	12 hr.	14 days	.094 lb. a.i.



# POTATO-INSECT CONTROL



## FLEA BEETLES (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Voliam Xpress	6-9 ozs./A	Potato: Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
RU Vydate C-LV	17-34 ozs.	Repeat at 5-7 day intervals or as needed to maintain control. May be applied by overhead chemigation.	48 hr.	7 days	† †Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Vydate L	Foliar Treatment 2-4 pts.	Use a low rate within the rate range for light infestations and a high rate within the rate range for a severe infestation. May be applied by overhead chemigation.	48 hr.	7 days	† †Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	For control of adults only. With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

## LIRIOMYZA LEAFMINER

RU Agri-Mek 0.15 EC or Reaper®	8-16 ozs.†	†Use 8-12 ozs./A for low to moderate infestations and 16 ozs./A for severe infestations. The addition of a NIS is recommended. Make the 1st application when adult flies are first observed. Repeat apps. as necessary for control (See label for Restrictions).	12 hr.	14 days	0.38 lb. a.i.
RU Agri-Mek SC	1.75-3.5 ozs.†	†Use 1.75-2.5 ozs./A for low to moderate infestations and 3.5 ozs./A for severe infestations. Must mix with a NIS. Make 1st application when adult flies are 1st observed.	12 hr.	14 days	.019 lb. a.i.
RU Athena	10-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
Blackhawk	2.25-3.5 ozs./A	Do not make more than four applications. Do not make applications less than 7-days apart.	4 hr.	7 days	0.33 lb. a.i.
Dimethoate 400	.5-1 pt.	-	48 hr.	0 days	-
RU Endigo ZC	4-4.5 ozs.†	†Use higher rates for heavier infestations. Suppression only. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
Radiant	6-8 ozs.	Leaf miner control may be enhanced with addition of a surfactant. See label for resistance management notes.	4 hr.	7 days	.25 lb. a.i.



## LYRIOMYZA LEAF MINER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Thimet 20G	Light or sandy soils† 8.5-11.3 ozs./1000 row feet for any row spacing Heavy or clay soils† 13-17.3 ozs./1000 row feet for any row spacing	Rates for a minimum of a 32" row. †At planting application only.	48 hr.††	90 days	3.54 lb. a.i.
RU Voliam Xpress	9 ozs./A	Potato:  Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
RU Warrior II	1.92 ozs.†	†Suppression only. Refer to label for resistance statement. With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

## PLANT BUGS

RU Asana XL	5.8-9.6 ozs.†	†Tarnished plantbug only; refer to label.	12 hr.	7 days	.35 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1.6-2.8 ozs.†	†Tarnished plantbug only. See label for insect resistance statement. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.††
RU Endigo ZC	3-4 ozs.†	†Apply higher rates for heavier infestations. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Endosulfan 3EC	.66-1.33 qts.	Make applications when insects appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
RU Fastac EC	3.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
RU Leverage 360	2.8 ozs.†	†Tarnished plantbug only. Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	††
					††.1 lb. a.i. $\beta$ -cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)



## POTATO-INSECT CONTROL



### PLANT BUGS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Penncap-M	4 pts.†	†Tarnished plantbug only; refer to label. For use in white potatoes.	4-5 days††	5 days	3 lb. a.i.
			††REI=4 days in areas with an average rainfall of 25+"/yr. and 5 days in areas with an average annual rainfall of <25"/yr.		
RU Permethrin 3.2EC	4-8 ozs.†	†Tarnished plantbug only; refer to label.	12 hr.	14 days	1.6 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato:	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
		Minimum interval between applications: 7 days			
RU Vydate C-LV	17-34 ozs.	May be applied by overhead chemigation.	48 hr.	7 days	†
					†Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Vydate L	Foliar Treatment 2-4 pts.	Use a low rate within the rate range for light infestations and a high rate within the rate range for a severe infestation. May be applied by overhead chemigation.	48 hr.	7 day	†
					†Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

### POTATO LEAFHOPPER

Actara	1.5-3 ozs.	-	12 hr.	14 days	.094 lb. a.i.
Admire 2F or Widow® or Admire Pro	13-20 ozs. or 13-20 ozs. or 5.7-8.7 ozs.	Several methods of application available (in-furrow spray during planting directed on the seed pieces or seed potatoes, subsurface sidedress, band spray during hilling, band spray before planting); refer to label.	12 hr.	-	.31 lb. a.i.
RU Asana XL	2.9-5.8 ozs.	-	12 hr.	7 days	.35 lb. a.i.

# POTATO-INSECT CONTROL



## POTATO LEAFHOPPER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Athena	7-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	.42 fl. ozs.
RU Baythroid XL or Tombstone Helios or Tombstone	.8-1.6 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.†
					†For Baythroid XL; .263 lbs. a.i./A is the maximum for Tombstone Helios and Tombstone.
Belay SC	foliar 1.9-2.8 ozs. in-furrow or sidedress 7.2-12 ozs.	See label for specific information.	12 hr.	14 days	.2 lb. a.i.
RU Brigadier	3.8-6.14 ozs.	-	12 hr.	21 days	.4 lb. a.i.
Dimethoate 400	.5-1 pt.	-	48 hr.	0 days	-
RU Endigo ZC	2.5-4.5 ozs.†	†Use higher rates for heavier infestations. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
RU Endosulfan 3EC	.66-1.33 qts.	Make applications when insects first appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
RU Fastac EC	3.2-3.8 oz./A	Apply as required by scouting. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	1 day	0.075 lb. a.i.
RU Hero	4-10.3 ozs.	Thorough coverage is essential to achieve control.	12 hr.	21 days	.2 lb. a.i.
Imidan 70-W	1.33 lbs.	Only use on potatoes to be harvested by machine.	24 hr.	-	14 lbs. product
RU Lannate LV	1.5-3 pts.	May be applied by overhead chemigation.	48 hr.	6 days	4.5 lbs. a.i.
RU Leverage 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days..	12 days	7 days	†
RU Penncap-M	4 pts.	For use in white potatoes.	4-5 days†	5 days	3 lb. a.i.
			†REI=4 days in areas with an average rainfall of 25+"/yr. and 5 days in areas with an average annual rainfall of <25".		



## POTATO-INSECT CONTROL



### POTATO LEAFHOPPER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Permethrin 3.2EC	4-8 ozs.	-	12 hr.	14 days	1.6 lb. a.i.
Platinum® 75WG	1.66-2.67 ozs.†	†Use lower rate within the rate range for shorter residual control and higher rate within the rate range for longer residual control. Contains thiamethoxam insecticide. Make only one soil app./year. For New York State refer to label for specific guidelines, precautions and limitations.	12 hr.	-	.125 lb. a.i.
Provado 1.6 or Sherpa	3.8 ozs.	-	12 hr.	7 days	.2 lb. a.i.
RU Thimet 20G	Light or sandy soils† 8.5-11.3 ozs./1000 row feet for any row spacing Heavy or clay soils† 13-17.3 ozs./1000 row feet for any row spacing	†At planting or postemergence application only. ††At planting application only. Rates for a minimum of a 32" row.	48 hr.††† †††REI=72 hr. in areas where average annual rainfall is <25" /yr.	90 days	3.54 lb. a.i.
Tops MZ Gaucho	.75 lbs./100 lbs. cut potato seed pieces	Seed piece treatment.	24 hr.	-	-
Transform WG	.75-1.5 fl oz/A	Refer to label for further instructions.	24 hr.	7 days	8.5 fl oz
Venom	Foliar Application 1-1.5 ozs. Soil Application 6.5-7.5 ozs.	Under severe pest pressure, use higher rate within rate range.	12 hr.	7 days	.198 lb. a.i.† .33 lb. a.i.††
Voliam Flexi	4 ozs.	Highly toxic to honey bees, use caution.	12 hr.	14 days	.094 lb. a.i.
RU Voliam Xpress	5-8 ozs./A	Potato: Minimum interval between applications: 7 days	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
RU Vydate C-LV	17-34 ozs.† †Regional rate, refer to label.	Repeat at 5-7 day intervals or as needed to maintain control. May be applied by overhead chemigation.	48 hr.	7 days	††
					††Northeast and Mid-Atlantic states=6 lb. a.i.; other parts of the US=9 lb. a.i.



## POTATO-INSECT CONTROL



### POTATO LEAFHOPPER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Vydate® L	Foliar Treatment 2-4 pts.	Use a low rate within the rate range for light infestations and a high rate within the rate range for a severe infestation.	48 hr.	7 days	†
					†Northeast and Mid-Atlantic states=.6 lb. a.i.; other parts of the US=.9 lb. a.i.
RU Warrior II	.99-1.6 ozs.	Refer to label for resistance statement. With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

### POTATO TUBERWORM

RU Asana XL	2.9-9.6 ozs.†	†Refer to label for specific instructions.	12 hr.	7 days	.35 lb. a.i.
RU Athena	7-17 fl. ozs.		12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	0 days	.132 lb. a.i.†
RU					†For Baythroid XL; .263 lb. a.i./A is maximum for Tombstone Helios and Tombstone.
Coragen	3.5-5 ozs.	Foliar and chemigation application options. MSO adjuvant recommended. Make no more than 4 applications per acre per crop. Do not apply more than 15.4 fl oz CORAGEN® or 0.2 lbs a.i. of chlorantraniliprole containing products per acre per crop. The minimum interval between treatments is 5 days. Potato tuberworm: CORAGEN® may be applied at rates of 3.2 - 5.0 fl oz per acre to control potato tuberworm. Potato tuberworm often have overlapping generations so repeat applications of CORAGEN® may be needed based on field scouting. Avoid treating successive generations with the same mode of action.	4 hr.	14 days	.2 lb. a.i.
RU Endigo ZC	3-4 ozs.†		24 hr.	14 days	.12 lb. a.i.
RU Hero	4-10.3 ozs.	Apply prior to senescence when economic thresholds are met (larvae and adults).	12 hr.	21 days	.2 lb. a.i.
RU Lannate LV	1.5-3 pts.	May be applied by overhead chemigation.	48 hr.	6 days	4.5 lbs. a.i.



## POTATO-INSECT CONTROL



### POTATO TUBERWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Leverage 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	†
					†.1 lb. a.i. $\beta$ -cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)
RU Penncap-M	4 pts.	For use in white potatoes.	4-5 days†	5 days	3 lb. a.i.
			†REI=4 days in areas with an average rainfall of 25+ <sup>1</sup> /yr. and 5 days in areas with an average annual rainfall of <25 <sup>1</sup> /yr.		
RU Permethrin 3.2EC	4-8 ozs.	-	12 hr.	14 days	1.6 lb. a.i.
RU Voliam Xpress	6-9 ozs./A	Potato:	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
		Minimum interval between applications: 7 days			
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

### PSYLLIDS

Admire® 2F or Widow® or Admire Pro	13-20 ozs. or 13-20 ozs. or 5.7-8.7 ozs.	Several methods of application available (in-furrow spray during planting directed on the seed pieces or seed potatoes, subsurface sidedress, band spray during hillling, band spray before planting); refer to label.	12 hr.	-	.31 lb. a.i.
RU Asana XL	2.9-5.8 ozs.†	†Potato psyllid only; refer to label.	12 hr.	7 days	.35 lb. a.i.
RU Athena	10-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU Baythroid XL or Tombstone Helios or Tombstone	1.6-2.8 ozs.†	†Potato psyllid only; refer to label. While similar, Baythroid XL ( $\beta$ -cyfluthrin) is different than Tombstone or Tombstone Helios ( $\beta$ -cyfluthrin).	12 hr.	0 days	.132 lb. a.i. ††
					††For Baythroid XL; .263 lb. a.i./A is maximum for Tombstone Helios and Tombstone.



## PSYLLIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Belay SC	In-furrow or sidedress 7.2-12 ozs.†	†Suppression only.	12 hr.	14 days	.2 lb. a.i.
<b>RU</b> Brigadier	4.8-6.14 fl. ozs.	Refer to label for detailed information.	12 hr.	21 days	.4 lb. a.i.
<b>RU</b> Endigo ZC	3-4 ozs.†	†Use higher rates for heavier infestations. Do not follow foliar or soil applications of thiamethoxam (see label).	24 hr.	14 days	.12 lb. a.i.
<b>RU</b> Endosulfan 3EC	1-1.33 qts.	Make applications when insects first appear or feeding is noticed.	24 hr.	-	3 lb. a.i.
<b>RU</b> Leverage 360	2.8 ozs.	Can be applied through calibrated ground, aerial or chemigation equipment. Minimum interval between apps. is 7 days.	12 days	7 days	† †.1 lb. a.i. β-cyfluthrin and .2 lb. a.i. imidacloprid (12.8 fl. ozs.)
Movento®	4-5 ozs.†	†Must be tank-mixed with a spray adjuvant/additive for optimum results. Refer to label.	24 hr.	7 days	0.16 lb. a.i. (10 ozs. product)
Oberon®2SC	8-16 ozs.†	†Potato psyllid only; refer to label.	12 hr.	7 days	.5 lb. a.i.
<b>RU</b> Permethrin 3.2EC	4-8 ozs.†	†Potato psyllid only; refer to label.	12 hr.	14 days	1.6 lb. a.i.
Platinum® 75WG	1.66-2.67 ozs.†	†Use lower rate within the rate range for shorter residual control and higher rate within the rate range for longer residual control. Contains thiamethoxam insecticide. Make only one soil app./year. For New York State refer to label for specific guidelines, precautions and limitations.	12 hr.	-	.125 lb. a.i.
Provado 1.6F or Sherpa	2-4 ozs.	-	12 hr.	7 days	.2 lb. a.i.
<b>RU</b> Thimet 20G	<u>Light or sandy soils</u> 8.5-11.3 ozs./1000 row feet for any row spacing <u>Heavy or clay soils</u> 13-17.3 ozs./1000 row feet for any row spacing	†At planting application only. Rates for a minimum of a 32" row.	48 hr.†† ††REI=72 hr. in areas where average annual rainfall is <25"/yr.	90 days	3.54 lb. a.i.
Tops MZ Gaucho	.75 lbs./100 lbs. cut potato seed pieces	Seed piece treatment.	24 hr.	-	-



# POTATO-INSECT CONTROL



## PSYLLIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Transform WG	2-2.25 fl oz/A	Refer to label for further instructions.	24 hr.	7 days	8.5 fl oz
Venom	<u>Foliar Application</u> 1-1.5 ozs. <u>Soil Application</u> 6.5-7.5 ozs.	-	12 hr.	7 days	.198 lb. a.i.† .33 lb. a.i.††
					†Maximum for foliar application. ††Maximum for soil application.
RU Voliam Xpress	6-9 ozs./A	Potato:	24 hr.	14 days	27.0 fl. oz. of Voliam Xpress or 0.12 lb. a.i. of lambda-cyhalothrin containing products or 0.2 lb. a.i. of chlorantraniliprole containing products per acre per growing season.
		Minimum interval between applications: 7 days			
RU Warrior II	1.28-1.92 ozs.†	†Potato psyllid only. With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.

## SPIDER MITES

RU	Agri-Mek 0.15 EC or Reaper®	8-16 ozs.	Use 8-12 ozs./A for low to moderate infestations and 16 ozs./A for severe infestations. The addition of a NIS is recommended. Make 1st application when mites are first observed. Repeat apps. as needed to maintain control. Refer to label for use restrictions.	12 hr.	14 days	.038 lb. a.i.
RU	Agri-Mek SC	1.75-3.5 ozs.†	†Use 1.75-2.5 ozs./A for low to moderate infestations and 3.5 ozs./A for severe infestations. Must mix with a NIS. Make 1st application when spider mites 1st appear. Repeat apps. as needed to maintain control. Refer to label for use restrictions.	12 hr.	14 days	.038 lb. a.i.
RU	Athena	10-17 fl. ozs.	Refer to label for detailed information and restrictions.	12 hr.	21 days	42 fl. ozs.
RU	Endigo ZC	4.5 ozs.†	†Use higher rates for heavier infestations. Apply before insects reach damaging levels. Do not follow foliar or soil applications of thiamethoxam (see label). Suppression only.	24 hr.	14 days	.12 lb. a.i.
RU	Hero	10.3 ozs.	For two spotted spider mite, carmine mite and Banks grass mite control.	12 hr.	21 days	.2 lb. a.i.
Oberon 2SC	8-16 ozs.†	†Twospotted spider mite only.	12 hr.	7 days	.5 lb. a.i.	
RU	Warrior II	1.92 ozs.†	†Suppression only. With Zeon Technology.	24 hr.	7 days	.12 lb. a.i.



## SMALL GRAINS-INSECT CONTROL



### APHIDS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Baythroid XL or Tombstone Helios or Tombstone	1.8-2.4 ozs.† †Certain species only; refer to label.	Baythroid XL is for use in wheat, barley, oats, rye, and triticale. For best control, applications must be made prior to insects damaging the plants. Refer to label. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days† ††Pre-grazing or foraging interval = 3 days for Baythroid XL and 7 days for Tombstone Helios.	.038 lb. a.i.†† ††For Baythroid XL; .076 lb. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Cobalt 2.5EC	7-13 ozs.†	†Consult university extension bulletins for local treatment recommendations. For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	.9765 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	Consult university extension bulletins for local treatment recommendations. For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	50 ozs. per year
RU Declare	1.02-1.54 ozs.	Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, Declare may provide suppression only. Higher rates and increased coverage will be necessary.	24 hr.	30 days† †7 days (graze or harvest treated wheat forage); 30 days (feeding treated straw)	.03 lb. a.i.
Dimethoate 400	.5-.75 pt.	For use in wheat only. Chemigation option available.	48 hr.	14 days (grazing immature plants) 35 days (grain)	.75 lb. a.i.
RU Fastac™ EC	3.2-3.9 oz./A	Labeled in wheat and triticale only. Aphid control may be variable depending on the species present and host-plant relationships. See resistance statement on label.	12 hr.	14 days	0.075 lb. a.i.
RU Lannate LV	.75-1.5 pts.	For use in barley, oats, rye and wheat. When applying, crop must be actively growing and not under stress from adverse environmental conditions. Can be applied by overhead chemigation.	48 hr.	7 days	1.8 lbs. a.i.



## APHIDS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban Advanced or RU Warhawk 4E	.5-1 pts.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	†14-28 days	.5 lb. a.i. ††, †††
				†14 days (forage or hay) 28 days (grain or straw)	††Maximum single application. †††Lorsban Advanced: .47 lb. a.i. (max. single app.)
Malathion 57 EC	1.5-2 pts.† †For control of English grain aphid only.	For use in barley, oats, rye and wheat	12 hr.	7 days	-
RU Mustang Maxx	3.2-4 ozs.	For use in wheat and triticale only. See resistance statements on label. Aphid control may be variable depending on species and host-plant relationship.	12 hr.	14 days (grain, forage or hay)	.125 lb. a.i.
RU Penncap-M	2-3 pts.	For use in wheat, oats and barley. May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days†	15 days	1.5 lb. a.i.
			†Ave. annual rainfall <25"/yr.=5 days; 25"+/yr.=4 days.		
RU Proaxis	2.56-3.84 ozs.†  †High rate in range recommended for use in corn leaf aphid control.	For use in wheat, wheat hay and triticale only. See resistance statements on the label. Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, this product may provide suppression only.	24 hr.	30 days	.03 lb. a.i.
RU Seeker™	2.1-3.1 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
RU Stallion	5-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay)  28 days (grain & straw)	23.5 ozs.
Transform WG	.75 fl oz/A	Refer to label for further instructions.	24 hr.	7 days	2.8 fl oz
RU Warrior II	1.28-1.92 ozs.†  †High rate in range recommended for use in corn leaf aphid control.	For use in barley, buckwheat, oats, rye, triticale, wheat, wheat hay. Resistance management statement on label. Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, this product may provide suppression only. With Zeon Technology.	24 hr.	7 days (graze or harvest forage) 30 days (straw)	.06 lb. a.i.



# SMALL GRAINS-INSECT CONTROL



## ARMY CUTWORMS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Baythroid XL or Tombstone Helios or Tombstone	1-1.8 ozs.	Baythroid XL is for use in wheat, barley, oats, rye, and triticale. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone Helios (cyfluthrin).	12 hr.	30 days† †Pre-grazing or foraging interval = 3 days for Baythroid XL and 7 days for Tombstone Helios.	.038 lb. a.i.† †For Baythroid XL; .076 lbs. a.i./A is maximum for Tombstone Helios and Tombstone
Cobalt 2.5EC	13-25 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. Refer to label for optimum control conditions. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	.9765 lb. a.i.
Cobalt Advanced	11-25 ozs.	Refer to label for optimum control conditions. For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	50 ozs. per year
Fastac™ EC	1.3-3.8 oz./A	Labeled in wheat and triticale only. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	14 days	0.075 lb. a.i.
Lorsban Advanced or  Warhawk 4E	1 pt.	Refer to label for optimum control conditions.	24 hr.	14 days (forage or hay) 28 days (grain or straw)	.5 lb. a.i.†, † †Maximum single application. †Lorsban Advanced: .47 lb. a.i. (max. single app.)
Mustang Maxx	1.28-4 ozs.	For use in wheat and triticale only.	12 hr.	14 days (grain, forage or hay)	1.25 lb. a.i.
Seeker™	1.6-2.6 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
Stallion	3.75-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay) 28 days (grain & straw)	23.5 ozs.
Warrior II	.96-1.6 ozs.†	†For use in barley, buckwheat, oats, rye, triticale, wheat, wheat hay. 2(ee) label available for control of army cutworm in NE, KS, CO, and SD in wheat. Apply Warrior II at .64-1.6 ozs./A. With Zeon Technology.	24 hr.	7 days (graze or harvest forage) 30 days (straw)	.06 lb. a.i.



# SMALL GRAINS-INSECT CONTROL



## ARMYWORMS

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Baythroid XL or Tombstone Helios or Tombstone	1.8-2.4 ozs.	Baythroid XL is for use in wheat, barley, oats, rye, and triticale. For best control, applications must be made prior to insects damaging the plants. Refer to label. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.  7	30 days†  Pre-grazing or foraging interval = 3 days for Baythroid XL and 7 days for Tombstone Helios.	.038 lb. a.i.††  ††For Baythroid XL, .076 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
Biobit or Dipel ES or Dipel DF or XenTari®	.5-2 lbs.† or 2-4 pts. or 1-2 lbs.† or 5-2 lbs.† †For organic production.	For use on barley, wheat and oats, others. May be used to control small armyworm (1st and 2nd instar) when populations are light and full coverage sprays are applied. If mature worms or heavy populations are present, a contact insecticide should be used to enhance control.	4 hr.	0 days	-
RU Cobalt 2.5EC	13-25 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. Refer to label for optimum control conditions. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	.9765 lb. a.i.
RU Cobalt Advanced	11-25 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	50 ozs. per year
RU Fastac™ EC	1.8-3.8 oz./A	Labeled in wheat and triticale only. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	14 days	0.075 lb. a.i.
RU Lannate LV	.75-1.5 pts.	Can be applied by overhead chemigation.	48 hr.	7 days	1.8 lb. a.i.
Malathion 57 EC	2 pts.	For use in barley, oats, rye and wheat.	12 hr.	7 days	-
RU Mustang Maxx	1.76-4 ozs.	For use in wheat and triticale only.	12 hr.	14 days (grain, forage or hay)	.125 lb. a.i.
RU Penncap-M	2-3 pts.	For use in wheat, oats and barley. May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days†  †Ave. annual rainfall <25"/yr.=5 days; 25"+/yr.=4 days.	15 days	.15 lb. a.i.



# SMALL GRAINS-INSECT CONTROL



## ARMYWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Stallion	9.25-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay) 28 days (grain & straw)	23.5 ozs.
RU Warrior II	1.28-1.92 ozs.	For use in barley, buckwheat, oats, rye, triticale, wheat, wheat hay. With Zeon Technology.	24 hr.	7 days (graze or harvest forage) 30 days (straw)	.06 lb. a.i.

## GRASSHOPPERS

RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1.8-2.4 ozs.	Baythroid XL is for use in wheat, barley, oats, rye, and triticale. Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days† †Pre-grazing or foraging interval = 3 days for Baythroid XL and 7 days for Tombstone Helios.	.038 lb. a.i.†† ††For Baythroid XL; .076 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Cobalt 2.5EC	7-13 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	.9765 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	50 ozs. per year
RU Declare	1.02-1.54 ozs.	-	24 hr.	30 days† †7 days (graze or harvest treated wheat forage); 30 days (feeding treated straw)	.03 lb. a.i.
Dimethoate 400	.75 pt.	For use in wheat only. Chemigation option available.	48 hr.	35 days (grain) 14 days (grazing immature plants)	.75 lb. a.i.
RU Fastac™ EC	3.2-3.9 oz./A	Labeled in wheat and triticale only. Use higher specified dosage for increased pest pressure or for increased residual pest control.	12 hr.	14 days	0.075 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	.5-1 pts.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14-28 days† †14 days (forage or hay) 28 days (grain or straw)	.5 lb. a.i.††, ††† ††Maximum single application. †††Lorsban Advanced: .47 lb. a.i. (max. single app.)
Malathion 57 EC	1.5-2 pts.† †For control of young grasshoppers only.	For use in barley, oats, rye and wheat	12 hr.	7 days	-



# SMALL GRAINS-INSECT CONTROL



## GRASSHOPPERS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Mustang Maxx	3.2-4 ozs.	For use in wheat and triticale only.	12 hr.	14 days (grain, forage or hay)	.125 lb. a.i.
RU Penncap-M	2-3 pts.	For use in wheat, oats and barley. Use higher rate if grasshoppers are large or if weather is cool. May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 days† †Ave. annual rainfall <25"/yr.=5 days; 25"+/yr.=4 days.	15 days	1.5 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	For use in wheat, wheat hay and triticale only.	24 hr.	30 days	.03 lb. a.i.
RU Seeker™	1.6-2.6 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
RU Stallion	5-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay) 28 days (grain & straw)	23.5 ozs.
RU Warrior II	1.28-1.92 ozs.	For use in barley, buckwheat, oats, rye, triticale, wheat, wheat hay. With Zeon Technology.	24 hr.	7 days (graze or harvest forage) 30 days (straw)	.06 lb. a.i.

## RUSSIAN WHEAT APHID

RU Actara 25 WDG	4 ozs.†	†For use on barley produced in ID, ND, OR, SD, and WA, or CO (24c label required). Apply as per scouting with a minimum app. interval of 7 days using a minimum of 10 gpa by ground or 5 gpa by air.	12 hr.	21 days	†.125 lb/ a.i. (8 ozs. product).
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1.8-2.4 ozs.	Baythroid XL is for use in wheat, barley, oats, rye, and triticale. Chemigation option available. For best control, applications must be made prior to insects damaging the plants. Refer to label for more recommendations. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days† †Pre-grazing or foraging interval = 3 days for Baythroid XL and 7 days for Tombstone Helios.	.038 lb. a.i.†† ††For Baythroid XL; .076 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Cobalt 2.5EC	7-13 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	.9765 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	Consult university extension bulletins for local treatment recommendations. For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	50 ozs. per year



## SMALL GRAINS-INSECT CONTROL



### RUSSIAN WHEAT APHID (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Declare	1.02-1.54 ozs.	Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, Declare may provide suppression only. Higher rates and increased coverage will be necessary.	24 hr.	30 days†	.03 lb. a.i.
				†7 days (graze or harvest treated wheat forage); 30 days (feeding treated straw)	
RU Fastac™ EC	3.2-3.9 oz./A	Labeled in wheat and triticale only. Aphid control may be variable depending on the species present and host-plant relationships. See resistance statement on label.	12 hr.	14 days	0.075 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E	.5-1 pts.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14-28 days†	.5 lb. a.i. ††, †††
				†14 days (forage or hay) 28 days (grain or straw)	††Maximum single application. †††Lorsban Advanced: .47 lb. a.i. (max. single app.)
RU Mustang Maxx	3.2-4 ozs.	For use in wheat and triticale only. See resistance statements on label. Aphid control may be variable; refer to label.	12 hr.	14 days (grain, forage or hay)	1.25 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	For use in wheat, wheat hay and triticale only. Best control is obtained before insects begin to roll leaves. Once wheat has started to boot, this product may provide suppression only. Higher rates and increased coverage will be necessary.	24 hr.	30 days	.03 lb. a.i.
RU Seeker™	2.1-3.1 fl oz/ acre	-	24 hr.	30 days	6.1 fl oz
RU Stallion	9.25-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay) 28 days (grain & straw)	23.5 ozs.
RU Warrior II	1.28-1.92 ozs.	For use in barley, buckwheat, oats, rye, triticale, wheat, wheat hay. With Zeon Technology.	24 hr.	7 days (graze or harvest forage) 30 days (straw)	.06 lb. a.i.

### WHEAT MIDGE

RU Cobalt 2.5EC	13-25 ozs.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. Refer to label for specific application instructions. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	.9765 lb. a.i.



## SMALL GRAINS-INSECT CONTROL



### **WHEAT MIDGE (cont.)**

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
<b>RU Cobalt Advanced</b>	11-25 ozs.	Refer to label for optimum control conditions. For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Chemigation option available.	24 hr.	14 days for forage and hay, 28 days for grain and straw	50 ozs. per year
<b>RU Lorsban Advanced or RU Warhawk 4E</b>	1 pt.	For use in AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA and WY only. For use in wheat only. Refer to label for specific application instructions. Chemigation option available.	24 hr.	14-28 days† †14 days (forage or hay) 28 days (grain or straw)	.5 lb. a.i.††, ††† ††Maximum single application. †††Lorsban Advanced: .47 lb. a.i. (max. single app.)
<b>RU Penncap-M</b>	2-3 pts.	For use in wheat, oats and barley. May be applied by chemigation. Penncap-M is hazardous to bees. Refer to label.	4-5 day† †Ave. annual rainfall <25"/yr.=5 days; 25"+/yr.=4 days.	15 days	1.5 lb. a.i.
<b>RU Warrior II</b>	1.28-1.92 ozs.	For use in barley, oats, buckwheat, rye, triticale, wheat, wheat hay. With Zeon Technology.	24 hr.	7 days (graze or harvest forage) 30 days (straw)	.06 lb. a.i.

### **SORGHUM-INSECT CONTROL**

#### **CHINCH BUGS**

Asana XL 0.66 EC	5.8-9.6 ozs.	Chemigation option available.	12 hr.	21 days	.15 lb. a.i.
<b>RU Baythroid XL or RU Tombstone Helios or RU Tombstone</b>	2-2.8 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	14 days	.066 lb. a.i.† †For Baythroid XL: .131 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
<b>RU Cobalt 2.5EC</b>	13-38 ozs.†	†Refer to label for specific application instructions. Chemigation option available.	24 hr.	†† ††26 ozs./A=30 days >26 ozs./A=60 days	1.5 lb. a.i.
<b>RU Cobalt Advanced</b>	11-38 ozs.	Refer to label for optimum control conditions. Chemigation option available.	24 hr.	30 days at 26 oz or less, 60 day >26 oz.	77 ozs. per year
<b>RU Declare</b>	1.54 ozs.	-	24 hr.	30 days	.04 lb. a.i.† †Refer to label.
<b>RU Fastac™ EC</b>	3.2-3.9 oz./A	Begin applications when bugs migrate from small grains or grass weeds to small sorghum.	12 hr.	14 days Grain and stover. Forage: 45 days	0.075 lb. a.i.



## CHINCH BUGS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban Advanced or RU Warhawk 4E or Lorsban 15G	1-2 pts. or 1-2 pts. or 8 ozs./1000 ft. row†	†Suppression only. Apply as a T-band in a 6-8" band. Refer to label for detailed application instructions. Chemigation option available.	24 hr.	30 days† (grain, forage, fodder, hay, silage)	1.5 lb. a.i.†††
RU Mustang Maxx	3.2-4 ozs.	Begin applications when bugs migrate from small grains or grass weeds to small sorghum. Refer to label for detailed application instructions.	12 hr.	14 days (grain, fodder or stover) 45 days (forage, silage)	.125 lb. a.i.
RU Proaxis	3.84 ozs.	Begin applications when bugs migrate from small grains or grass weeds to small sorghum. Refer to label for detailed application instructions.	24 hr.	30 days	.04 lb. a.i.
RU Stallion	9.25-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay) 28 days (grain & straw)	23.5 ozs.
RU Warrior II	1.92 ozs.	Begin applications when bugs migrate from small grains or grass weeds to small sorghum. Refer to label for detailed application instructions. With Zeon Technology.	24 hr.	30 days	.08 lb. a.i.

## CUTWORMS

Asana XL 0.66 EC	5.8-9.6 ozs.	Chemigation option available.	12 hr.	21 days	.15 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	1-1.3 ozs.	Chemigation option available. While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	14 days	.066 lb. a.i.†
RU Cobalt 2.5EC	13-38 ozs.	Chemigation option available.	24 hr.	†	1.5 lb. a.i.
				†26 ozs./A=30 days >26 ozs./A=60 days	
RU Cobalt Advanced	11-38 ozs.	Chemigation option available.	24 hr.	30 days at 26 oz or less, 60 day >26 oz.	77 ozs. per year
RU Declare	.77-1.02 ozs.	-	24 hr.	30 days	.04 lb. a.i.†
					†Refer to label.



# SORGHUM-INSECT CONTROL



## CUTWORMS (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Fastac™ EC	1.3-3.8 oz./A	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.	12 hr.	14 days Grain and stover. Forage: 45 days	0.075 lb. a.i.
RU Lorsban Advanced or RU Warhawk 4E or Lorsban 15G	1-2 pts. or 1-2 pts. or 8 ozs./1000 ft. row†	†Apply as a T-band in a 6-8" band. Refer to label for detailed application instructions. Chemigation option available.	24 hr.	††30 days (grain, forage, fodder, hay, silage)	1.5 lb. a.i.††
				††Lorsban 4E, Lorsban Advanced and Warhawk: After application of 1 pt./A; for higher rates, PHI=60 days. Refer to label for Lorsban 15G information.	†††Lorsban Advanced: 1.41 lb. a.i.
RU Mustang Maxx	1.28-4 ozs.	Refer to label for detailed application instructions.	12 hr.	14 days (grain, fodder or stover) 45 days (forage, silage)	.125 lb. a.i.
RU Proaxis	1.92-2.56 ozs.	Refer to label for detailed application instructions.	24 hr.	30 days	.04 lb. a.i.
RU Stallion	3.75-11.75 oz	For use in wheat only in the states of: AZ, CA, CO, ID, KS, MN, MT, NE, NM, NV, ND, OK, OR, SD, TX, UT, WA, and WY. Refer to label for detailed information.	24 hr.	14 days (forage or hay) 28 days (grain & straw)	23.5 ozs.
RU Warrior II	.96-1.28 ozs.	Refer to label for detailed application instructions. With Zeon Technology.	24 hr.	30 days	.08 lb. a.i.

## GREENBUGS

RU Cobalt 2.5EC	13-38 ozs.†	†Use higher rate in rate range when pest populations are high.	24 hr.	30 days††	1.5 lb. a.i.
				††PHI=30 days for apps. ≤26 oz. and 60 days for >26 ozs.	
RU Cobalt Advanced	11-38 ozs.	Chemigation option available.	24 hr.	30 days at 26 oz or less, 60 day >26 oz.	77 ozs. per year
RU Lorsban Advanced or RU Warhawk	.5-2 pts.†	†Use higher rate in rate range when pest populations are high.	24 hr.	30 days††	1.5 lb. a.i.
RU Malathion 57EC	1.5 pts.	-	12 hr.	7 days	-



# SUGAR BEETS-INSECT CONTROL POSTPLANT



## BEET ARMYWORM

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Coragen	3.5 oz./a	Foliar and chemigation application options. MSO adjuvant recommended. Make no more than 4 applications per acre per crop. Do not apply more than 15.4 fl oz CORAGEN® or 0.2 lbs a.i. of chlorantraniliprole containing products per acre per crop. The minimum interval between treatments is 5 days.	4 hr.	1 day	0.2 lb a.i.

## CUTWORMS

<b>RU</b>	Asana XL	At-plant .45 oz./1000 feet of row† Foliar 5.8-9.6 ozs.	†7.8 ozs./A for 30" row	12 hr.	21 days	.05 lb. a.i.††
						††At-plant maximum. The maximum for foliar applications is .15 lb. a.i./A/season
	Biobit or DiPel DF or XenTari	.5-1 lb. or .5-1 lb. or .5-1.5 lbs.	These products are for use in organic production.	4 hr.	0 days	-
<b>RU</b>	Fastac™ EC	2.2-3.8 oz./A	Apply as required by scouting. Timing and frequency of applications should be based upon insect populations reaching locally determined economic thresholds.	12 hr.	50 days	0.075 lb. a.i.
<b>RU</b>	Lannate LV	1.5 pts.†	†For varigated cutworm control only.	48 hr.	21 days (root) 30 days (tops)	4.5 lb. a.i.
<b>RU</b>	Lorsban 15G or Lorsban Advanced or Warhawk 4E	At-plant or PPI 1 pt. Foliar 2 pts.	At-plant or PPI: Apply as a 10" wide band centered over the row for furrows 30" apart. Adjust rate for different row spacings; refer to label. Foliar: Broadcast application. Labeled for banded foliar application at 1.33 pts./A.	24 hr.	30 days	3 lb. a.i.†
	Lorsban 15G	At-plant 6.6-9 ozs./1000 feet row	T-band application. Refer to label for row spacing calibration chart.	24 hr.	7 days	2 lb. a.i.
<b>RU</b>	Mustang Maxx	At-plant 4 ozs. Foliar 2.24-4 ozs.	Apply on the soil surface in a 5-7" band or broadcast in a minimum of 3-5 gal./A. Section 24c label for CO, ID, MN, MT, ND, OH, OR and WY.	12 hr.	50 days	.075 lb. a.i.



# SUGAR BEETS-INSECT CONTROL POSTPLANT



## SPRINGTAIL

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Counter 15G†	10 lbs.	†No insecticide is specifically labeled for springtail control in sugar beet. Products registered for use in sugar beet against other insects may be used for protection from springtail injury; however, manufacturers are not legally bound to guarantee acceptable control levels. NDSU research on springtail management suggests this recommendation. Apply modified in-furrow. Do not band or apply less than 8 lbs./A.			

## SUGAR BEET ROOT MAGGOT

RU Asana XL	5.8-9.6 ozs.	For adult control only.	12 hr.	21 days	.15 lb. a.i.
RU Lorsban Advanced or Warhawk 4E	.5-1 pt. (adults)† 1.33-2 pts. (larvae)††	†Broadcast foliar application. ††Banded foliar application (5-7" wide band centered over the row). Refer to label for application recommendations.	24 hr.	30 days	3 lb. a.i.†††
RU Lorsban 15G	At-plant† 4.5-9 ozs./1000 feet row Post-emergence†† 6.5-9 ozs./1000 feet row	†T-band application. Refer to label for row spacing calibration chart. Use the lower rate within the rate range when populations are expected to be low. ††Apply in a band 3-5" wide over the beet row (up to 2-4 true leaf stage of plant growth). Incorporate using a suitable device.	24 hr.	7 days	2 lb. a.i.

## TARNISHED PLANT (LYGUS) BUG

RU Lorsban Advanced or Warhawk 4E	1 pt.†	†Labeled rate for broadcast application. Sugar Beet Research and Education Board of ND and MN and NDSU recommendation is 8 ozs./A.	24 hr.	30 days	3 lb. a.i.††
					†† Lorsban Advanced: 2.82 lb. a.i.

## WIREWORM

RU Diazinon AG500	3-4 qts.	Broadcast just before planting. Incorporate into soil 4-6".	-	14 days	4 lb. a.i.
Lorsban 15G	At-plant† 6.5-9 ozs./1000 feet row	†T-band application. Suppression only. Refer to label for row spacing calibration chart. Use the lower rate within the rate range when populations are expected to be low.	24 hr.	7 days	2 lb. a.i.
RU Mustang Maxx	At-plant† 4 ozs.	†Apply in-furrow or 3-4" T-band (band over the open furrow) in a minimum of 3-5 gals./A. Section 24c label for CO, ID, MN, MT, ND, OH, OR, and WY.	12 hr.	50 days	.075 lb. a.i.



## SUNFLOWER-INSECT CONTROL



### BANDED SUNFLOWER MOTH

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Asana XL	5.8-9.6 ozs.	-	12 hr.	28 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.† †For Baythroid XL; .131 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	10 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	45 days	20 oz. a.i.
RU Cobalt 2.5EC	19-38 ozs.	-	24 hr.	45 days	2.227 lb. a.i.
RU Cobalt Advanced	16-38 ozs.	-	24 hr.	45 days	114 ozs. per year
DiPel ES	1.5-2.5 pts.	For moderate pest pressure, make an application prior to 75% bloom. A second application, 5 days later, may be necessary to control severe infestations. Treat when larvae are exposed and small.	4 hr.	0 days	
RU Lorsban Advanced or RU Warhawk 4E	1-1.5 pts.	-	24 hr.	42 days	3 lb. a.i.† †Lorsban Advanced: 2.82 lb. a.i.
RU Mustang Maxx	2.6-4 ozs.	Use higher dosage for increased residual pest control.	12 hr.	30 days	.125 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	-	24 hr.	14 days	.06 lb. a.i.
RU Stallion	5-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	45 days	.12 lb. a.i.

### CUTWORM

RU Asana XL	5.8-9.6 ozs.	-	12 hr.	28 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	.8-1.6 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.† †For Baythroid XL; .131 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	5-8 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	45 days	20 oz. a.i.
RU Cobalt 2.5EC	19-38 ozs.	-	24 hr.	45 days	2.227 lb. a.i.
RU Cobalt Advanced	16-38 ozs.	-	24 hr.	45 days	114 ozs. per year



## SUNFLOWER-INSECT CONTROL



### CUTWORM (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban Advanced or Warhawk 4E	2-4 pts.† or 2 pts.††	†PPI application. Incorporate into the top 2-4" of soil. ††Postemergence treatment. Use higher rate in range for increased pest pressure.	24 hr.	42 days	3 lb. a.i.†††
					†††Lorsban Advanced: 2.82 lb. a.i.
Lorsban 15G	8 ozs./1000 feet row	Place granules in a 7-inch wide band over the row behind the planter shoe in front of the press wheel and incorporate into the top 1" of soil using suitable equipment.	24 hr.	7 days	1.25 oz. a.i./100 feet row
RU Mustang Maxx	1.28-4 ozs.	Use higher dosage for increased residual pest control.	12 hr.	30 days	.125 lb. a.i.
RU Proaxis	1.92-3.2 ozs.	-	24 hr.	14 days	.06 lb. a.i.
RU Stallion	3.75-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.
RU Warrior II	.96 -1.6 ozs.	With Zeon Technology.	24 hr.	45 days	.12 lb. a.i.

### GRASSHOPPER

RU Asana XL	5.8-9.6 ozs.†	†Refer to label for specific rates according to insect instar nymphal stage.	12 hr.	28 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	2-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.†
					†For Baythroid XL: .131 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	45 days	20 oz. a.i.
RU Cobalt 2.5EC	7-13 ozs.	-	24 hr.	45 days	2.227 lb. a.i.
RU Cobalt Advanced	6-13 ozs.	-	24 hr.	45 days	114 ozs. per year
RU Declare	1.02-1.54 ozs.	-	24 hr.	45 days	.06 lb. a.i.†
					†Refer to label for details.
RU Lorsban Advanced or Warhawk	1 pt.	-	24 hr.	42 days	3 lb. a.i.†
					†Lorsban Advanced: 2.82 lb. a.i.
RU Mustang Maxx	2.6-4 ozs.	Use higher dosage for increased residual pest control.	12 hr.	30 days	.125 lb. a.i.



# SUNFLOWER-INSECT CONTROL



## GRASSHOPPER (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Proaxis	2.56-3.84 ozs.	-	24 hr.	14 days	.06 lb. a.i.
RU Stallion	5-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	14 days	.12 lb. a.i.
<b>LOOPER</b>					
Biobit HP or DiPel DF or XenTari	.5-1 lb. or .5-1 lb. or .5-2 lbs.	These products may be used for organic production.	4 hr.	0 days	-

## PALESTRIPPED FLEA BEETLE

RU Baythroid XL or Tombstone Helios or Tombstone	2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.†
RU Mustang Maxx	3.2-4 ozs.	Use higher dosage for increased residual pest control.	12 hr.	30 days	.125 lb. a.i.
RU Stallion	5-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.

## SUNFLOWER BEETLE

RU Asana XL	1.45-5.8 ozs.	-	12 hr.	28 days	.2 lb. a.i.
RU Baythroid XL or Tombstone Helios or Tombstone	.8-1.6 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.†
RU Besiege	5-8 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	45 days	20 oz. a.i.
RU Cobalt 2.5EC	19-38 ozs.	For control of larvae or adults, treat when field counts indicate 10 larvae or 1 to 2 adults per seedling.	24 hr.	45 days	2.227 lb. a.i.
RU Cobalt Advanced	16-38 ozs.	For control of larvae or adults, treat when field counts indicate 10 larvae or 1-2 adults per seedling.	24 hr.	45 days	114 ozs. per year
RU Declare	.77-1.28 ozs.	-	24 hr.	45 days	.06 lb. a.i.†
					†Refer to label for details.



## SUNFLOWER-INSECT CONTROL



### SUNFLOWER BEETLE (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban Advanced or RU Warhawk 4E	1-1.5 pts.†	†Use higher rate in rate range for increased pest pressure. For control of adults and larvae, treat when field counts indicate 10 larvae or 1 to 2 adults per seedling.	24 hr.	42 days	3 lb. a.i.††
RU Mustang Maxx	2.6-4 ozs.	Use higher dosage for increased residual pest control.	12 hr.	30 days	.125 lb. a.i.
RU Proaxis	1.92-3.2 ozs.	-	24 hr.	14 days	.06 lb. a.i.
RU Stallion	5-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.
RU Warrior II	.96-1.6 ozs.	With Zeon Technology.	24 hr.	45 days	.12 lb. a.i.

### SUNFLOWER MIDGE

RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.†
					†For Baythroid XL; .131 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.

### SUNFLOWER MOTH

RU Asana XL	5.8-9.6 ozs.	-	12 hr.	28 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i.†
					†For Baythroid XL; .131 lbs. a.i./A is maximum for Tombstone Helios and Tombstone.
RU Besiege	6-10 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	45 days	20 oz. a.i.
Biobit HP or DiPel DF or XenTari	.5-1 lb.	Products may be used for organic production.	4 hr.	0 days	-
RU Cobalt 2.5EC	19-38 ozs.	For control, make 1st application during early 1% to 5% bloom stage.	24 hr.	45 days	2.227 lb. a.i.
RU Cobalt Advanced	16-38 ozs.	To control, make first application during early 1% to 5% bloom stage.	24 hr.	45 days	114 ozs. per year
RU Declare	1.02-1.54 ozs.	-	24 hr.	45 days	.06 lb. a.i.†
					†Refer to label for details.



# SUNFLOWER-INSECT CONTROL



## SUNFLOWER MOTH (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
DiPel ES	1.5-2.5 lb.	For moderate pest pressure, make an application prior to 75% bloom. A second application, 5 days later, may be necessary to control severe infestations. Treat when larvae are exposed and small.	4 hr.	0 days	-
RU Lorsban Advanced or RU Warhawk 4E	1-1.5 pts.	Use higher rate within rate range for increased pest pressure. To control, make application during early 1% to 5% bloom stage.	24 hr.	42 days	3 lb. a.i. <sup>†</sup>
RU Mustang Maxx	2.6-4 ozs.	Use higher dosage for increased residual pest control.	12 hr.	30 days	.125 lb. a.i.
RU Proaxis	2.56-3.84 ozs.	-	24 hr.	14 days	.06 lb. a.i.
RU Stallion	5-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.
RU Warrior II	1.28-1.92 ozs.	With Zeon Technology.	24 hr.	45 days	.12 lb. a.i.

## SUNFLOWER SEED WEEVIL

RU Asana XL	5.8-9.6 ozs.	-	12 hr.	28 days	.2 lb. a.i.
RU Baythroid XL or RU Tombstone Helios or RU Tombstone	2-2.8 ozs.	While similar, Baythroid XL (beta-cyfluthrin) is different than Tombstone or Tombstone Helios (cyfluthrin).	12 hr.	30 days	.066 lb. a.i. <sup>†</sup>
RU Besiege	6-10 ozs.	Apply before pests reach damaging levels, refer to label for further instructions.	24 hr.	45 days	20 oz. a.i.
RU Cobalt 2.5EC	19-38 ozs.	To control, apply when field counts indicate 10 to 12 adults per plant for oil crop varieties and 1 to 3 adults per plant on confectionary crop varieties (see label).	24 hr.	45 days	2.227 lb. a.i.
RU Cobalt Advanced	16-38 ozs.	To control, apply when field counts indicate 10 to 12 adults per plant for oil crop varieties and 1 to 3 adults per plant for confectionery crop varieties.	24 hr.	45 days	114 ozs. per year
RU Declare	1.02-1.54 ozs.	Adult control only.	24 hr.	45 days	.06 lb. a.i. <sup>†</sup>
					†Refer to label for details.



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- # A soil-applied granular insecticide with broad-spectrum control of early season insect pests such as wireworm, white grub, corn rootworm, seedcorn maggot and black cutworm
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**Individual results may vary,** and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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## SUNFLOWER-INSECT CONTROL



### SUNFLOWER SEED WEEVIL (cont.)

Product	Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
RU Lorsban Advanced or RU Warhawk 4E	1-1.5 pts.	To control, apply when field counts indicate 10 to 12 adults per plant for oil crop varieties and 1 to 3 adults per plant for confectionery crop varieties.	24 hr.	42 days	3 lb. a.i.†
					†Lorsban Advanced: 2.82 lb. a.i.
RU Mustang Maxx	2.6-4 ozs.	For adult control.	12 hr.	30 days	.125 lb. a.i.
RU Proaxis	2.56-3.84 ozs.†	†Control of adults only.	24 hr.	14 days	.06 lb. a.i.
RU Stallion	5-11.75 oz	Not for use in Mississippi. Refer to label for detailed information.	24 hr.	42 days	35.25 ozs.
RU Warrior II	1.28-1.92 ozs.†	†Control of adults only. With Zeon Technology.	24 hr.	45 days††	.12 lb. a.i.
				††PHI for grazing or harvest of forage=30 days; for seed=60 days	

### STORED GRAIN-INSECT PREVENTION

#### Bin Preparation:

##### Clean Bin Prior to Storage:

1. Pest proof bin – Repair leaks and holes to prevent bird and rodent invasion.
2. Clean harvesting and handling equipment – Old grain may contain insects that would infest newly harvested grain.
3. Clean outside of bin – Spilled grain can serve as a source of insect infestation and attract rodents. Kill weeds growing around bin site.
4. Clean inside bin – Never put new grain on top of old grain. Clean out all old grain, cracked kernels, fines, etc. very thoroughly.
5. Spray bin – Spray all inside and outside surfaces with malathion about two weeks before storing grain.

### BIN PREPARATION TREATMENTS

Malathion 57EC	For use in all grain storage facilities. Apply 1 gal. of this material in 25 gals. of water. Do not apply directly to grain.
Protect-It®	For use in all grain storage facilities. Apply Protect-It at a rate of 0.6 lb./1000 sq. ft. about 2 weeks before filling. For empty facilities, apply Protect-It through the running aeration fan or use a portable blower. Mix 1 lb. of Protect-It with 1 gal. of water and spray as a fine mist at the rate of 1.5 gals./1000 sq. ft.
Storcide II® 2.11EC	Bin and warehouse applications should only be applied from outside the bin or warehouse. Only downward spray is permitted. All openings, except for the point of application must be closed during applications. This product may only be applied to empty grain bins using automated spray equipment. Do not enter or allow others to enter until sprays have dried. Use 1.8 fl. oz/gal.
Tempo® SC Ultra	Apply at 0.025%-0.05% concentration (0.27-0.54 oz./gal. of water).
Tempo 20WP	Apply at 0.05-0.1% concentration (10 g [2 scoops]-20 g [4 scoops]/gal. of water).

### GRAIN TREATMENTS INSECT PREVENTION

6% Malathion Grain Dust or Max Kill Dusta-Cide 6	For use in barley, corn, oats, rye, and wheat. Use 10 lbs./1000 bu. Refer to label for methods of application.
Storcide II® 2.11EC	For use in wheat, barley, oats, rice and sorghum only. Use 6.6 - 12.4 fl. oz /1000 bushels. See Label

## INSECT PREVENTION TOPDRESS TREATMENT



The best practice to protect stored grain is to treat the total grain mass. However, if this was not completed and it is not feasible to move the grain, a top dress treatment will help prevent migrating insects from infesting the grain. Before making a surface application, it will be necessary to remove any webbing and break up crusting that exists on the grain surface.

DiPel DF	Use DiPel DF at 0.375 lb./100 bu. of grain. Note: as a surface treatment, apply 0.5 lb. of DiPel DF in 5 to 10 gals. of water/500 sq. ft. of grain surface area and mix into the top 4" of grain. Controls almond moth and Indian meal moth. Very safe product.
Protect-It	If the grain mass has already been treated with Protect-It, apply Protect-It at a rate of 3 lbs./1000 sq. ft. of grain surface. If the grain mass was not treated with Protect-It, apply Protect-It to the surface of the grain mass at 40 lbs./1000 sq. ft.
Vapona® Strips	Use 1 strip/900-1200 cu. ft. of space above grain to control insect pests. Should only be used in conjunction with top dress treatment.

## STORED GRAIN FUMIGATION

### FUMIGATION BY CERTIFIED APPLICATOR

Steps in Fumigation:

1. Top dress grain with malathion or Protect-It to seal in insects and to prevent reinfestation.
2. Fumigate according to label directions and placard bin.
3. Allow to stand sealed for 3-4 days.
4. Aerate.
5. Remove all warning signs.

<span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px 5px;">RU</span> <span style="color: red; border: 1px solid red; border-radius: 50%; padding: 2px 5px;">RU</span> <b>Weevil-Cide® Pellets or Weevil-Cide Tablets</b>	<p>These products are used to fumigate certain raw agricultural commodities including corn, barley, oats, rye, wheat, triticale, soybeans and sunflower seeds. For control of Angoumois grain moth, cigarette beetle, confused flour beetle, flat grain beetle, granary weevils, rice weevil, Indian meal moth, lesser grain borer, red flour beetle, and saw-toothed grain beetle. Available in tablets, pellets or gas bags.</p> <p><b>Dosage rate per 1000 bu. of grain:</b> 60-80 tablets</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;">Commodity temperature (°F)</th><th style="text-align: center; width: 30%;">Minimum Exposure Period</th><th style="text-align: center; width: 30%;">Exposure time (tablets)</th><th style="text-align: center; width: 30%;">Exposure time (pellets)</th></tr> </thead> <tbody> <tr> <td style="text-align: left;">below 40</td><td style="text-align: center;">Do not fumigate</td><td style="text-align: center;">Do not fumigate</td><td style="text-align: center;">Do not fumigate</td></tr> <tr> <td style="text-align: left;">40-53</td><td style="text-align: center;">10 days</td><td style="text-align: center;">8 days</td><td style="text-align: center;">8 days</td></tr> <tr> <td style="text-align: left;">54-59</td><td style="text-align: center;">5 days</td><td style="text-align: center;">4 days</td><td style="text-align: center;">4 days</td></tr> <tr> <td style="text-align: left;">60-68</td><td style="text-align: center;">4 days</td><td style="text-align: center;">3 days</td><td style="text-align: center;">3 days</td></tr> <tr> <td style="text-align: left;">over 68</td><td style="text-align: center;">3 days</td><td style="text-align: center;">2 days</td><td style="text-align: center;">2 days</td></tr> </tbody> </table> <p><b>Application:</b> Tablets and pellets can be probed into the grain using a rigid PVC pipe about 5 to 7 feet in length and having a diameter of 1.25 inches. Use about 20-50 tablets or 100-250 pellets per probe. Probe the dosage uniformly over the surface. Refer to the Weevil-Cide Manual (available at <a href="http://www.cdms.net">www.cdms.net</a>) for full application instructions. A plastic tarp should be pulled over the grain surface following application of the fumigant. Care must be taken to see that the plastic is removed when fumigation is completed to prevent excess grain sweating. Close and seal all external openings including any fan ducts.</p>	Commodity temperature (°F)	Minimum Exposure Period	Exposure time (tablets)	Exposure time (pellets)	below 40	Do not fumigate	Do not fumigate	Do not fumigate	40-53	10 days	8 days	8 days	54-59	5 days	4 days	4 days	60-68	4 days	3 days	3 days	over 68	3 days	2 days	2 days
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FMC doesn't solve today's toughest pest problems in a lab. Okay, maybe we end up there, but it starts by getting our hands dirty. Out in the fields. That's where we learn. A lot. Yield and crop quality. Insect and weed pressure. We take all that information back to the lab to come up with the proper formula to help increase yields and profits. But, this job isn't about finding solutions just for today. It's anticipating what you'll have to face tomorrow. See you in the field.

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corn

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## DEALER/GROWER APPLIED SEED TREATMENTS (Corn, Soybeans, Small Grains, etc.)



NOTE: Rate units in 100 lbs. of seed unless otherwise stated.

Product	Crop	Rate Per 100 lbs. of Seed	Comments
Allegiance® FL (alternately known as Allegiance FS)	Small Grains, Soybeans, Field Beans, Kidney, Navy, Pinto, Lentils, Peas, Sorghum, Sunflowers, Others†	†Rates vary. Some applica- tions labeled only for export use. Directions for use at re- duced rates in combination with other fungicides available on label; refer to label for details.	Controls systemic downy mildews, <i>Pythium</i> and <i>Phytophthora</i> spp. For control of other soilborne diseases, a combination of Captain and Vitavax registered formulations are compatible. May be applied as a water-based slurry through standard slurry or mist-type equipment.
Apron XL®	Barley, Wheat, Oats, Rye, Others Alfalfa Sorghum Soybeans	.0425-.085 oz.  .64 oz. .32-.64 oz. .16-.64 oz.	For control of <i>Pythium</i> damping- off (all crops listed), early season <i>Phytophthora</i> (alfalfa, soybeans) and early season downy mildew (al- falfa, soybeans [use higher rate]). Use in combination with another seed treatment product labeled for disease control in these crops.
Apron MAXX® RTA® or Apron MAXX RFC or Apron MAXX Bean Pak	Soybeans	5 ozs.  or 1.5 ozs.  or †	†Promotional combination of Apron XL LS, Maxim® 4FS and colorant. Refer to separate labels for use rates. For control of damping-off and seed rots due to <i>Pythium</i> , <i>Phy- tophthora</i> , <i>Fusarium</i> , <i>Rhizoctonia</i> spp., and early season <i>Phytophthora</i> root rot. Suppresses seed- borne <i>Sclerotinia</i> and <i>Phomopsis</i> .
Awaken ST	Cotton, Wheat	Wheat, Barley, Triticale, Sorghum, Millet & Rice may be applied at 4-6 fl. ozs. Cotton may be applied at 4-8 fl. ozs.	Awaken ST can be used with other seeds. Awaken ST is not compatible with Rhizobia inoculants.
Charter F <sup>2</sup>	Barley, Wheat, Rye, Triticale, and Oats	5.4 ozs.	<b>Barley only:</b> Controls covered smut, false loose smut, <i>Fusarium</i> seed rot, <i>F.</i> seedling blight, <i>Pythium</i> damping- off, and true loose smut. <b>Wheat only:</b> Controls common bunt, flag smut, <i>Fusarium</i> seed rot, <i>F.</i> seedling blight, loose smut, and <i>Pythium</i> damping-off. Also suppresses many other diseases, refer to label.
Consensus	Small Grains, Soybeans, Cotton	0.33-1.0 fl. oz Predominant rates: Cotton: 1 fl. oz. Soybeans and most other crops: 0.4 fl. oz.	See label for individual crop recommendations.
Cruiser® 5FS†	Barley, Wheat Corn Sorghum Soybeans	.75-1.33 ozs.†† .250-1.25 mg/kernel 5.1- 7.6 ozs. 1.28-.25 ozs.	†Each fl. oz. of Cruiser 5FS con- tains 17.7 gm thiamethoxam. ††Lighter rate available for early protection of wireworms. For protection of many other crops including sunflower, beans and potatoes. Provides early season protection from corn rootworm, (1.25/kernel needed for rootworm), wireworm, seed corn maggot, flea beetle, grubs, chinchbug, aphids (including Russian), greenbugs, and Hessian fly.



## DEALER/GROWER APPLIED SEED TREATMENTS (Corn, Soybeans, Small Grains, etc.)



NOTE: Rate units in 100 lbs. of seed unless otherwise stated.

Product	Crop	Rate Per 100 lbs. of Seed	Comments
CruiserMaxx® Beans	Soybeans	†	†A CruiserMaxx Beans brand product is one or more separately registered products or combination of products containing the following: CruiserMaxx, CruiserMaxx Plus, Apron XL, Cruiser 5FS, Maxim, and an ApronMaxx brand fungicide such as ApronMaxx RTA + Moly. For control of many early season pests. Refer to the Syngenta website and separate labels for program information and rates.
CruiserMaxx Cereals	Barley, Triticale, Wheat	5 ozs.	Provides control of early season insects: wireworms (suppression), aphids and Hessian fly (refer to label) and a wide range of seed- and soil-borne disease including: general root rots, seedling blight, damping-off caused by <i>Pythium</i> spp. and <i>Fusarium</i> spp., loose smut, common and dwarf bunt and others. Refer to label for details.
Dividend Extreme® or Dividend® XL RTA	Barley, Wheat, Triticale or Barley, Wheat	2-4 ozs. or 5-10 ozs.	For control of barley stripe, general seed rots such as caused by <i>Penicillium</i> spp. and <i>Aspergillus</i> spp., <i>Pythium</i> damping off, <i>Fusarium</i> seed scab, loose smut, dwarf bunt and others.
Dyna-Shield® Foothold®	Barley, Oats, Triticale, Wheat	5-6.5 ozs.	This product is a combination of systemic fungicides, which aid in the control or suppression of the following seed, seedling, and soilborne diseases: stinking smut, flag smut, loose smut, early season <i>Septoria</i> disease complex, general seed rots, <i>Pythium</i> damping-off, early season <i>Rhizoctonia</i> root rot, early season common root rot, seedborne <i>Fusarium</i> scab, early season <i>Fusarium</i> foot rot, early season suppression of powdery mildew and rust.
Dyna-Shield Foothold Extra	Barley, Wheat	3.4-5 ozs.	Insecticide/systemic fungicide premix that aids in the control or suppression of the following insects, seed, seedling and soilborne diseases: <b>Barley and Wheat:</b> Early season protection of aphids and wireworms, and early season protection against <i>Pythium</i> damping-off, loose smut, <i>Rhizoctonia</i> root rot, common root rot, <i>Fusarium</i> foot rot, and powdery mildew (suppression) <b>Wheat only:</b> Hessian fly, early season suppression of wheat leaf rust <b>Barley only:</b> Early season control of covered smut, barley leaf rust, barley stripe (suppression)



# DEALER/GROWER APPLIED SEED TREATMENTS

## (Corn, Soybeans, Small Grains, etc.)



NOTE: Rate units in 100 lbs. of seed unless otherwise stated.

Product	Crop	Rate Per 100 lbs. of Seed	Comments
Dyna-Shield Metalaxyl Fungicide	Soybeans Forage legumes Forage grasses Grain crops Beans, Peas Sunflower Sugar beet  Others, refer to label.	.75-1.5 ozs. .75-1.5 ozs. .75 ozs. .75-1.5 ozs.† .75-1.5 ozs.† 1.5-3 ozs. .75 oz.  †Rate dependent on target disease and crop. Refer to label.	Systemic downy mildew, <i>Pythium</i> and <i>Phytophthora</i> . Refer to label for use in the export market for crops such as corn.
Dynasty®	Corn  Others, refer to label.	.153 ozs.	Seed-borne, Seed-borne head smut and soil-borne fungi causing decay, damping-off, and seedling blight. Seedling damping-off ( <i>Rhizoctonia</i> spp., <i>Penicillium</i> spp., <i>Pythium</i> spp.)
Equity	Soybeans	3.0 fl. ozs.	Seed-borne, Seed-borne head smut and soil-borne fungi causing decay, damping-off, and seedling blight. Seedling damping-off ( <i>Rhizoctonia</i> spp., <i>Penicillium</i> spp., <i>Pythium</i> spp.)
Evergel Energy	Wheat, Cereals, Corn, Soybean, Edible Beans, Rice, Alfalfa	1 oz. Maximum number of applications per year is 3	Seed rot, damping-off, and seedling blight caused by seedborne <i>Botrytis cinerea</i> . Seed rot, pre-emergence damping-off and seedling blight caused by soilborne <i>Rhizoctonia</i> , <i>Fusarium</i> , <i>Cochliobolus</i> and <i>Pythium</i> . Seed rot, pre-emergence damping-off and seedling blight caused by seedborne <i>Fusarium</i> and <i>Cochliobolus</i> . Seed decay caused by <i>Phomopsis Ascochyta</i> blight (suppression) Seed decay Common root rot, foot rot, and crown rot (early season suppression) Rust, <i>Septoria</i> and powdery mildew (early season suppression)
Flo Rite® 1127 Concentrate	Soybeans	<u>Soybeans treated with fungicide ONLY</u> .75 ozs. <u>Soybeans treated with fungicide and Insecticide</u> 1.5 ozs.	Plantability polymer. Only 1 polymer needed for varying use rates of most actives. Improves seed flow in seed conditioning facilities. Reduces dust-off during and after the seed treatment process.
Gaucho 600	Wheat, Barley, Oats, Rye, Triticale  Sorghum, Millet†  Soybeans  Others, refer to label.	.8-2.4 ozs.††, †††  6.4 ozs.††  1.6-3.2 ozs.††††	<b>1 oz. Gaucho 600=17.7 g a.i.</b> Systemic activity. For early season protection of aphids (including greenbug and Russian wheat aphid), Hessian fly, and wireworms. †Also for control of chinch bugs and fire ants. ††Apply prior to planting as a slurry treatment. †††Refer to label for lower use rate for wireworm suppression only. ††††For protection of planted seeds from seed corn maggot, soybean aphids, and over-wintering bean leaf beetles. Refer to label. Suppresses spread of certain viruses.



## DEALER/GROWER APPLIED SEED TREATMENTS (Corn, Soybeans, Small Grains, etc.)



NOTE: Rate units in 100 lbs. of seed unless otherwise stated.

Product	Crop	Rate Per 100 lbs. of Seed	Comments
Helix XTra®	Canola	23 ozs.	Combination of thiamethoxam, difenoconazole, mefenoxam and fludioxonil. Protection against aphids, flea beetle, seedcorn maggot, white grubs, wireworm, seedborne blackleg, seedborne <i>Alternaria</i> , seedling disease complex (damping-off, seedling blight, seed rot and crown rot) caused by <i>Pythium</i> spp., <i>Fusarium</i> spp., and <i>Rhizoctonia</i> spp.
Inovate Pro™ + Rizolex + Sebring	Soybeans	2.81 fl oz + 0.3 fl oz + 0.1 fl oz = 3.21 fl oz/cwt	Combination of Inovate PRO (clothianidin, ipconazole, metalaxyl), Rizolex (tolclofos-methyl), and Sebring (metalaxyl). New lower use rate Inovate product with added Rhizoctonia protection from Rizolex Funigicide. Neutral product-additional colorant required.
Inovate™ Seed Protectant	Soybeans	4.74 ozs.	Combination of ipconazole, metalaxyl, and clothianidin. Seed and seedling protection against seed and soilborne pathogens, <i>Rhizoctonia solani</i> , <i>Fusarium</i> spp., and <i>Pythium</i> spp. Also controls numerous insects including white grub, wireworm and seedcorn maggot.
INTEGO Suite	Soybeans	2.81 fl oz + 0.3 fl oz = 3.11 fl oz	Containing the newest seed treatment fungicide for Pythium and Phytophthora in 35 years combined with INOVATE, the INTEGO SUITE System offers the most complete early season protection available. Product contains Inovate PRO (clothianidin, ipconazole, metalaxyl) and INTEGO solo (ethaboxam). Neutral product- requires addition of colorant.
Latitude®	Corn Sorghum Soybeans	1.5 ozs./42 lbs. 1.5 ozs./30 lbs. 1.5 ozs./37 lbs.	Contains imidacloprid, carboxin and metalaxyl. Protection against seed and seedling diseases caused by <i>Pythium</i> and <i>Rhizoctonia</i> , also against seedcorn beetle, seedcorn maggot, wireworms, white grub and flea beetle. Provides early season control of bean leaf beetle (overwintering stage).
Maxim MZ or Maxim 4FS	Potato	.5 lb./100 lbs. of seed pieces .08 - .16 ozs.	Suppresses <i>Fusarium</i> dry root seed decay, seedborne <i>Rhizoctonia solani</i> , (causes stem canker and tuber black scurf), and seedborne <i>Helminthosporium solani</i> (causes silver scurf). Refer to label for full use instructions.
NipsIt™ Suite Cereals OF	Wheat Barley, Oats	5-7.5 ozs.	Contact systemic fungicide protection from early season root and crown rots, <i>Pythium</i> scab, smuts, and bunts. Contains clothianidin for insect protection. Ready-to-use formulation with Lock Tight Technology. Polymer and colorant included.



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## DEALER/GROWER APPLIED SEED TREATMENTS (Corn, Soybeans, Small Grains, etc.)



NOTE: Rate units in 100 lbs. of seed unless otherwise stated.

Product	Crop	Rate Per 100 lbs. of Seed	Comments
Prevail®	Corn, Wheat Barley, Oats, Rye Beans Soybeans	1.5-3 ozs./bu. 1-2 ozs./bu. 3-4 ozs./bu. 2-4 ozs./bu.	For protection against <i>Pythium</i> and <i>Rhizoctonia</i> seedling disease complex, loose smut, common bunt or stinking smut (wheat), loose and covered smut (barley), and oat smut.
Rancona™ 3.8 FS	Wheat, Barley, Oats, Rye, Triticale, Sunflower Beans, Soybeans	0.051-0.085 oz.  0.085 oz.	Iponconazole seed treatment. Protects against seedborne and soilborne fungi that cause seed decay, damping-off, and seedling blight.
Rancona Apex	Wheat, Barley, Oats, Rye, Triticale	5-8.33 ozs.	For most cases, this is a ready-to-use product. Contains iponconazole. Effective against <i>Fusarium</i> , <i>Cochliobolus sativus</i> , smut, bunts, and leaf stripe as well as seed rot fungi ( <i>Aspergillus</i> , <i>Penicillium</i> ).
Rizolex®	Soybean, Corn, Sorghum	0.3 fl. ozs./100 lb. seed	Contains tolclofos-methyl. Fungicide only treatment for control of Rhizoctonia, Fusarium, and other soil and seedborne diseases. Can be added to current seed-applied fungicides for enhanced activity.
Stamina® F <sup>3</sup> Cereals	Barley, Oats, Rye, Triticale, Wheat	4.6 fl. oz.	Liquid seed treatment used for control or suppression of certain seedborne and soilborne diseases. Refer to label for individual diseases.
Stamina	Alfalfa Barley, corn (field, pop, seed), oats, Rye, wheat Corn (sweet)  Dried Shelled Peas and beans, Edible podded legume vegetables, succulent shelled peas and beans  Peanut Rapeseed Sorghum  Sugar Beet  Sunflower	1.5 – 3.1 fl. ozs.  0.4 – 0.8 fl. ozs.  0.8 – 1.6 fl. ozs.  0.4 – 1.5 fl. ozs.  0.4 – 1.5 fl. oz. 1.5 – 3.1 fl. oz. 0.8 – 1.5 fl. ozs.  See label for specific rate and application instructions.  0.8 - 2.3 fl. ozs.	Broad-spectrum fungicide that provides preventative seed and seedling protection from several seed and soilborne diseases, resulting in improved plant health. Refer to label for complete application directions.
Trilex® 2000	Soybeans, Beans	1 oz.	Trifloxystrobin/metalexyl product. Seed and seedling protection against seedborne fungi and soilborne pathogens, <i>Rhizoctonia solani</i> , <i>Fusarium</i> spp., <i>Pythium</i> spp and others. May be applied using standard slurry or mist-type seed treatment equipment.
Trilex 6000	Soybeans	Refer to product labels.	Soybean seed treatment multi-pack consisting of: Gaucho® 600 (imidacloprid), Trilex 2000 (trifloxystrobin + metalexyl), Celgard® Film Coating Polymer 96487, Pro-ized® Seed Colorant and Yield Shield® (biological fungicide).



# DEALER/GROWER APPLIED SEED TREATMENTS

## (Corn, Soybeans, Small Grains, etc.)



NOTE: Rate units in 100 lbs. of seed unless otherwise stated.

Product	Crop	Rate Per 100 lbs. of Seed	Comments
Trilex Flowable	Soybeans, Field bean, Field pea, Lentils, Kidney, Lima, Navy, Snap, Many Other Legumes	.32-.64 oz.	Seed and seedling protection against seedborne fungi causing seed decay and soilborne pathogens, <i>Rhizoctonia solani</i> and <i>Fusarium</i> spp. May be applied using standard slurry or mist-type seed treatment equipment.
Vibrance	Barley, canola, oats, rye, soybean, wheat, Triticale	0.08 – 0.16 fl. ozs.	Offers protection against seed decay, seedling blight, damping-off, and loose smut. For full detailed description and rate recommendations, refer to the label.
Vibrance Extreme	Barley, oats, rye, spring wheat, winter wheat, Triticale	2.5 – 5.6 fl. ozs.	Offers protection against general seed rots, seedling blight, root rot, damping-off, seed-borne Septoria, covered smut, false loose smut and true loose smut and root rots. For full detailed description, refer to the label.
Yield Shield®	Soybeans, Beans	.1 oz.	Concentrate biological fungicide that, when applied to seed, colonizes the developing root system and provides protection against organisms such as <i>Rhizoctonia</i> and <i>Fusarium</i> that attack the root system. The plant's own resistance is activated.

## INOCULANTS

Some seed treatments can be harmful to inoculants.  
Refer to label for specific use instructions.

Product	Rate Per Acre/General Information	Comments
Dyna-Start® Max	2.8 oz./100 lbs. seed (400 units/case)	Promoter Technology® plus inoculant to promote early season vigor. Liquid formulation.
Excalibre™ Encapsulated Inoculant for Soybeans	5 ozs./100 lb. seed 1 lb. package treats 8,000 lb. seed	Encapsulated seed inoculant containing a blend of 3 strains of bacteria. Highly concentrated suspendable powder. May be co-applied with several fungicides; refer to label. When applied with Extender, inoculant remains viable for up to 3 months with certain fungicide treatments; refer to label.
Graph-Ex™ for soybeans	Planter Box Application Bulk Seed Application 0.5 oz./50 lbs. seed	Inoculant (Excalibre) plus seed lubricant carrier (talc-graphite) to add lubrication to planters.
Release® LC	Wheat, Sorghum 0.5 ozs. or 1 oz.	May promote germination, emergence and stand establishment.
Optimize® 400 for soybeans	2.8 oz./100 lbs. seed (400 units/case)	Promoter Technology® plus inoculant to promote early season vigor. Liquid formulation.
Vault® HP + Integral	Each complete case treats 200 units (10,000 lbs. soybeans).	This inoculant system contains a growth enhancer, biological fungicide and a liquid inoculant.
Vault NP Liquid Extender Pre-Inoculant Extender for Soybeans	3.11 liters of Vault NP Inoculant combined with 18.4 ozs. of Vault NP Liquid Extender treats 2,500 lbs. of soybean seed.  4.2 ozs. inoculant + .73 oz extender/cwt soybeans	For best results, seed should be planted as soon as possible. Wet and dry sequential application options available. For use with Vault NP Liquid Legume Inoculant for Soybeans only.

## It's time to take a stand against soybean cyst nematodes.

Soybean cyst nematodes have been sucking the life out of your plants long enough. Take back control with Clariva™ Complete Beans nematicide/insecticide/fungicide,\* proven to offer direct and season-long activity against SCN to maximize yield potential. Clariva Complete Beans helps minimize hidden and costly damage from SCN independent of environmental conditions, and features the unsurpassed early-season insect and disease protection that growers know from CruiserMaxx® Beans with Vibrance® insecticide/fungicide. Contact your Syngenta representative to learn how you can take back your fields.



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# Realizing potential is way better than dreaming about it.

## Introducing DuPont™ Aproach® Prima fungicide.

Formulated to help protect your seed investment, new Aproach® Prima fungicide delivers that and more for soybeans, corn and wheat by providing superior management of many hard-to-control and strobilurin-resistant diseases, such as frogeye leaf spot. For more details about Aproach® Prima, talk to your local retailer and visit [aproachprima.dupont.com](http://aproachprima.dupont.com).

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## INOCULANTS

Some seed treatments can be harmful to inoculants.  
Refer to label for specific use instructions.



Product	Rate Per Acre/General Information	Comments
Vault NP Liquid Legume Inoculant for Soybeans	<u>Planter Box Application</u> <u>Bulk Seed Application</u> Refer to label for flow valve settings 2.1 fl. ozs./50 lbs. seed <u>In-furrow Application</u> See In-Furrow Application Table on label	Planter box, bulk seed and in-furrow application options. For extended inoculant on-seed life, use Vault NP Liquid Extender with this product.
Vault SP for Soybeans Sterile Peat-Based Inoculant	28 oz. packet treats 1,000 lbs. seed <u>Old Soybean Ground</u> 1.4 ozs./50 lbs. seed <u>New Soybean Ground</u> 2.8 ozs./50 lbs. seed	Sterilized peat carrier for maximum rhizobia populations. Planter box mixing option available. For optimal performance, plant within 24 hours of inoculation.

## CORN-DISEASE CONTROL

Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Aproach®	Anthracnose leaf blight and stalk rot, eye spot, gray leaf spot, leaf spots, northern corn leaf blight, northern corn leaf spot, Physoderma brown spot, rust (common and southern), southern corn leaf blight, yellow leaf blight:  3-4 fl oz applied at V4 to V7 and/or 6-12 fl oz applied at VT to R3	Make a single 3-4 oz application between V4 to V7 for early season disease control/suppression. Make additional 6 to 12 fl oz applications at 7 to 14-day intervals. For best results apply between VT to R3 and make applications prior to disease development. Use the higher rate and shorter interval when disease pressure is high. Do not tank mix APROACH™ with an adjuvant or crop oil when spraying corn between the V8 and VT stages of growth.	12 hrs.	For forage: PHI=0 days.  For grain or ear: PHI=7 days.	36 fl oz. product
Aproach® Prima	Anthracnose leaf blight and stalk rot, eye spot, gray leaf spot, leaf spots ( <i>Alternaria</i> spp.), northern corn leaf blight, northern corn leaf spot, Physoderma brown spot, rust (common and southern), southern corn leaf blight, yellow leaf blight:  3.4-6.8 fl oz	Begin applications prior to disease development. Use higher rate and shorter interval when disease pressure is high.  Do not tank mix APROACH™ PRIMA with an adjuvant or crop oil when spraying corn between the V8 and VT stages of growth	12 hrs.	For silage: PHI=21 days.  For grain or ear: PHI=30 days.	6.8 fl oz. product



## CORN-DISEASE CONTROL

Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Ballad® Plus/ Sonata  Field Corn Sweet Corn	Rust Puccinia spp. Sheath Spot and Blight Thanatephorus cucumeris (Anamorph: Rhizoctonia solani) Bacterial Blight and Streak Xanthomonas spp. Brown Rot, Leaf Spots and Smuts Cercospora spp.  1-4 qt./A	Apply Ballad Plus as a foliar spray alone, in alternating spray programs or in tank mixes with other registered crop protection products. When conditions are conducive to heavy disease pressure, use Ballad Plus in a rotational program with other registered fungicides. Begin applications of Ballad Plus when environmental conditions and plant stage are conducive to disease development Repeat on 7 to 14 day intervals or as needed.  Organic Approved	4 hrs.	0 days	No Limit
Dithane® M45	Helminthosporium leaf blight, common corn rust: 1.5 lb.	For use in field and hybrid seed corn. Start applications when disease symptoms first appear. Depending upon severity of infection, continue on a 4- to 14-day schedule. Adding a surfactant improves performance.	24 hr.	40 days	16 lb. (12 lb. a.i.)
Dithane® F45 Rainshield®	Helminthosporium leaf blight, com- mon corn rust: 1.2 qts.	For use in sweet corn (fresh or processing), popcorn, sweet corn for seed production (including hybrid seed). Start applications when disease symptoms first appear and repeat at 4- to 7-day intervals. The addition of Latron surfactant will improve performance. Do not feed treated forage to livestock.	24 hr.	40 days	12 qts. (12 lb. a.i.) 10 applications
Fitness™	Helminthospo- rium leaf blights, Northern corn leaf blight, Northern corn leaf spot, Southern corn leaf blight: 2-4 ozs. Eye spot, gray leaf spot, rusts: 4 ozs.	For use in field, pop, sweet and seed corn. Apply when disease first appears and reapply on a 7 to 14 day schedule.	12 hr.	†	††
				†Corn (excluding sweet): PHI=30 days (harvest for forage, grain or stover) Sweet corn: PHI=14 days (ears, forage)	†Field corn: .45 lb. a.i. (grain, stover), .22 lb. a.i. (forage)
Headline AMP™	Anthracnose, Eyespot, Gray leaf spot, No. corn leaf blight, No. corn leaf spot, Physo- derma brown spot, Rust, So. corn leaf blight, Yellow leaf blight: 10-14.4 ozs.	For use in all types of corn (field, sweet, pop and seed).	12 hr.	†	.75 lb. a.i.
				†20 days (field corn, popcorn [grain and stover], sweet corn [stover]); 7 days (field corn [forage/silage], sweet corn [forage, kernel], popcorn [forage], and all types of seed production corn).	



## CORN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Kocide® 3000	Bacterial stalk rot: .5-1.75 lbs.	For use in field, seed, pop and sweet corn. Begin treatments when disease first appears and repeat every 7 - 10 days or as needed.	48 hr.	0 days	14 lbs. product
Priaxor™	Anthracnose, Eyespot, Gray leaf spot, Northern, Southern and yellow corn leaf spot and blight, Physoderma brown spot, common and southern rust 4-8 fl. oz.	Begin applications prior to disease development. Do not use adjuvants or crop oil after the V8 stage and prior to the VT stage unless recommended on BASF labeling.	12 hr.	-  Corn PHI = 21 days Sweet corn PHI = 7 days	16 oz. product
Proline®	5.7 ounces per acre applied VT- R2.	Controls all major leaf diseases and suppresses Fusarium and Gibberella ear rots and DON levels in grain.	12 hr.	14 days	22.8 oz. product
PropriMax® EC	Helminthosporium leaf blights, northern corn leaf blight, northern corn leaf spot, southern corn leaf blight: 2-4 ozs. Gray leaf spot, eye spot, rusts: 4 ozs.	For use in field, seed, pop and sweet corn. Apply when disease first appears and reapply on a 7- to 14-day schedule. Refer to label for application schedule.	12 hr.	†  † Corn (excluding sweet) PHI=30 days (forage, grain, stover) Sweet corn: PHI=14 days (ears or forage).	16 fl. ozs. (0.45 lb. a.i.). (excluding forage)  8 fl. ozs. (0.22 lb a.i.) (field corn-forage)
Prosaro  Field corn, field corn grown for seed, popcorn, sweet corn	Anthracnose ( <i>Colletotrichum graminicola</i> ) Eye spot ( <i>Aureobasidium zeae</i> ) Gray leaf spot ( <i>Cercospora zeae-maydis</i> ) Northern corn leaf blight ( <i>Setosphaeria turica</i> ) Northern corn leaf spot ( <i>Cochliobolus carbonum</i> ) Rust ( <i>Puccinia spp.</i> ) Southern corn leaf blight ( <i>Cochliobolus heterostrophus</i> )  6.5 fl oz/A	Apply PROSARO 421 SC FUNGICIDE when disease first appears. In sweet corn, continue applications on a 5- to 14-day interval if favorable conditions for disease development persist. In all other corn, continue applications on a 7- to 14-day interval if favorable conditions for disease development persist	12 hr.	-  Grain PHI = 36 days Sweet corn PHI = 7 days	26 oz.



## CORN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Quilt® or Quilt Xcel™	Northern corn leaf blight†, Northern corn leaf spot†, Southern corn leaf blight†: Quilt 7-14 ozs.†† Quilt Xcel 10.5-14 ozs.††  Rust, anthracnose leaf blight††, gray leaf spot, eye spot, diplodia ear rot (suppression) (Quilt Xcel only): 10.5-14 ozs.	†Also known as <i>Helminthosporium</i> leaf blight. ††Field experience indicates it is more efficacious to use higher rates. ††Field experience has shown better control with Quilt Xcel use. For use in field, pop, sweet and seed corn. Apply when disease first appears. Refer to label for application schedule.	12 hr.	††††	propiconazole .45 lb. a.i. azoxystrobin 2.0 lb. a.i.
Stratego YLD	Anthracnose Leaf Blight Eyespot Diplodia Ear Rot Gray Leaf Spot Northern Corn Leaf Blight Northern Corn Leaf Spot Physoderma Brown Spot Rusts Southern Corn Leaf Blight Field, popcorn, sweet corn, seed corn 2-5 ozs.	Early season (V4-V7) applications of 2-5 ounces may be used reduce disease and improve plant health. Apply 4-5 ounces to larger corn when disease first appears. Refer to label for application instructions.	12 hr.	-	-  Corn, popcorn, seed - 14 days for grain and fodder. All forage and sweet corn - 0 days
Tilt®	Northern corn leaf blight†, Northern corn leaf spot†, Southern corn leaf blight†: 2-4 ozs. Rust, gray leaf spot, eyespot: 4 ozs.	†Also known as <i>Helminthosporium</i> leaf blight. For use in field, seed, pop and sweet corn. Apply when disease first appears. Refer to label for application schedule.	12 hr.	††	††  ††Corn (excluding sweet): PHI=30 days (grazing or harvesting of forage) Sweet corn: PHI=14 days (ears, forage)



## EDIBLE BEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Aproach®	Alternaria blight and leafspot, anthracnose, Ascochyta blight and leafspot, Cercospora leafspot, downy mildew, Mycosphaerella blight, powdery mildew, ( <i>Erysiphe</i> spp.), rust ( <i>Uromyces</i> spp. and <i>Phakopsora</i> spp.), septoria blotch: 6-12 fl. oz  Sclerotinia rot (white mold); 8-12 fl. oz	Begin applications prior to disease development and continue on a 7- to 14-day interval. Use higher rate and shorter interval when disease pressure is high.  For white mold: make initial preventive application at beginning bloom and follow with 2nd application 7-10 days later at full bloom.  Do not tank mix APROACH™ with an adjuvant or crop oil when spraying dry beans or peas.	12 hrs.	For vines or hay: PHI=0 days.  For seed: PHI=14 days.	24 fl oz. product
Ballad Plus/ Sonata	Bacterial Blight <i>Pseudomonas syringae</i> Brown Spot <i>Septoria glycines</i> Bacterial Pustule <i>Xanthomonas</i> spp. Cercospora Leaf Spot Cercospora spp. Downy Mildew Peronospora Asian Soybean Rust <i>Phakopsora pachyrhizici manshurica</i> White Mold ( <i>Sclerotinia Stem Rot</i> ) <i>Sclerotinia sclerotiorum</i> 1-4 qts/A	Apply Ballad Plus as a foliar spray alone, in alternating spray programs or in tank mixes with other registered crop protection products. When conditions are conducive to heavy disease pressure, use Ballad Plus in a rotational program with other registered fungicides. Begin applications of Ballad Plus when environmental conditions and plant stage are conducive to disease development Repeat on 7 to 14 day intervals or as needed..  Organic Approved	4 hrs.	-	No Limit
Bravo Weather Stik® or Initiate® 720 or Bravo Ultrex®	<u>Dry beans</u> Rust, anthracnose, downy mildew, Cercospora leaf blotch, Ascochyta blight: BWS or Initiate 720 - 1.375-2 pts. Bravo Ultrex - 1.25-1.8 lbs. <u>Snap beans</u> Rust: BWS or Initiate 720 - 1.375-3 pts. Bravo Ultrex - 1.25-2.7 lbs. Botrytis blight (gray mold): BWS or Initiate 720 - 3 pts. Bravo Ultrex - 2.7 lbs.	Begin applications at early bloom stage or when disease first threatens. For dry beans using Bravo Weather Stik or Initiate 720, begin applications at first onset of disease, which can occur as early as 2-4 weeks before flowering. Refer to label for full application schedule.	12 hr.	†	††
				†Dry beans: 14 days Snap beans: 7 days	††Dry beans: 6 lb a.i. Snap beans: 9 lb a.i.



## EDIBLE BEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Champ® Formula 2 or Kocide® 3000	Brown spot, Downy mildew, Halo blight, common blight: Champ - .66-2 pts.† Kocide - .5-1.25 lbs.†	†Use higher rates for more severe disease. For protective sprays, make application when plants are 6" high. Refer to label for recommended application schedule.	24 hr.	-	††
Endura®	Ascochyta blight, Botrytis gray mold, white mold: 8-11 ozs.	Apply at beginning of flowering or prior to onset of disease.	12 hr.	†	22 oz. product
				†Dry beans: 21 days Succulent beans: 7 days	
Fontelis™	white mold: 16 to 30 fl. oz./A	Make initial preventive application at beginning bloom and follow with 2nd application 7-10 days later at full bloom. Make no more than 2 sequential applications of DuPont™ FONTELIS™ fungicide before switching to a fungicide with a different mode of action.	12 hr.	-	72 oz. a.i.
Headline or Headline SC	Anthracnose, Alternaria leaf and pod spot, Asian soybean rust†, Ascochyta blight, Cercospora leaf spot, downy mildew, Mycosphaerella blight, powdery mildew, rust: 6-9 ozs.	†Refer to label for Management of soybean rust section. Begin applications prior to disease development. Use the higher rate and shorter interval when disease pressure is high. Refer to label for full application schedule.	12 hr.	††	18 oz. product
Priaxor™	Anthracnose, Alternaria leaf/pod spot, Ascochyta blight, Asian soybean rust, Botrytis gray mold, Cer-cospora leaf spot, Downy mildew, Mycosphaerella blight, Powdery mildew, Rust 4-8 fl. oz.	Begin applications prior to disease development. White mold suppression at 6-8 fl. oz./A. See label for adjuvant and tank mix restrictions.	12 hr.	-	16 oz. product
				Dried shelled peas and beans = 21 days Edible podded legume vegetables = 7 days	



## EDIBLE BEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Proline® 480 SC	White mold, rust, Ascochyta Blight: 5.7 ozs.	For use in dried shelled peas and beans (except soybeans). Apply at first sign of disease. Refer to label for full application schedule. Section 24c labels available for CO, ID, KS, MI, MN, MO, NE, NM, ND, OR, SD, UT, WA, WI and WY (white mold and rust). Refer to labels.	48 hr.	7 days	.53 lb. a.i. 17.1 ozs. a.i.
ProPulse™	White mold, ascochyta and mycosphaerella blight. 8-10.3 ounces per acre at first bloom.	To limit the potential for development of disease resistance to this fungicide, do not make more than 2 sequential applications of PRO-PULSE or any Group 7 or Group 3 containing fungicide before rotating with a fungicide from a different Group. Hand-harvesting is prohibited. Do not feed hay or threshings or allow livestock to graze in treated areas.	48 hr.	14 days	20.5 ozs. a.i.
Quadris	Bean rust: 6 ozs. Anthracnose, Alternaria leaf spot, Ascochyta leaf spot, rust, Southern blight, web blight, Ascochyta blight, Ascochyta leaf and pod spot, Alternaria blight: 6-15.5 ozs. Rhizoctonia root rot (soilborne disease): .4-.8 ozs./1000 feet row	Begin applications prior to disease development. Refer to label for full application schedule.	4 hr.	†	1.5 lb. a.i.
				†Dry beans: 14 days Succulent beans: 0 days	
Quadris Opti	Bean rust, anthracnose, Alternaria leaf spot, Ascochyta leaf spot, rust, web blight, Ascochyta blight, Ascochyta leaf and pod spot, Alternaria blight: 1.6-2.4 pts.	For use only on beans to be harvested dry with pods removed. Apply prior to disease development. Refer to label for full application schedule.	12 hr.	14 days	1.5 lb. a.i.† 6 lb. a.i.††
					†azoxystrobin maximum ††chlorothalonil maximum
Quilt Xcel	10.5-14 ozs.	Apply when conditions are conducive for disease. Up to three applications can be made on a 7 - 14 day interval. On certain varieties, Quilt application may cause crinkled and/or greener leaves, yields of beans displaying this characteristic have not been reduced.	12 hr.	7 days	42 ozs. a.i.
				for succulent beans and 14 days for dry beans.	



## EDIBLE BEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Rally® 40 WSP	Asian soybean rust, pod tip rot, rust. 4-5 ozs.	Begin applications when rust is first observed. For Pod tip rot, begin applications when pods begin to develop. Reapply on 7- to 10-day protectant schedule if conditions remain favorable for disease development	24 hr.	-	1.25 lb.lb./A/crop (0.5 lb. ai)
				Applications may be made up to and including the day of harvest.	
Rovral® 4F	Gray mold, white mold: 1.5-2 pts.	Apply as a foliar spray at 1st bloom to when 10% of the plants have one open bloom. Refer to label for full application schedule.	24 hr.	†	4 lb. a.i.
				†Foraging: 14 days Hay to livestock: 45 days	
Sanction®	Powdery mildew: 3-6 pts.† †Use low rates/A when disease pressure is low and high use rates when disease pressure increases.	Apply at 1st flower. Apply 2 additional times during the main filling stage of pod development, 7 to 10 days apart. Do not use on sulfur sensitive varieties. For coverage, a super spreading agent such as Hi-Wett® or Widespread Max® is suggested.	24 hr.	0 days	-
Seed Treatments	-	There are numerous fungicide seed treatment formulations from many companies (i.e. Dyna-Shield Captain Fungicide). Read and follow label directions.	-	-	-
Topsin® M WSB	Single Application White mold, gray mold, anthracnose: 1.5-2 lbs. Multiple Applications 1-1.5 lbs.	For use on dry and succulent beans.	12 hr.	†	4 lb. a.i.
				†Dry beans: 28 days Succulent beans: 14 days	

## POTATO-DISEASE CONTROL

Bravo Weather Stik or Bravo Ultrex or Bravo Zn or Initiate 720 or Initiate ZN	Late blight, early blight, Botrytis vine rot, black dot: BWS or Initiate 720 - .75 pt. (initial application) followed by 1-1.5 pts.† Bravo Ultrex - 0.7 lbs. (initial app.) followed by .9-1.36 lbs.† Bravo Zn or Initiate ZN-1.125 lbs. (initial app.) followed by 1.5-2.25 lbs.†	†Begin applications at low rate when vines are first exposed and leaf wetness occurs. Repeat applications at 5-10 day intervals. Refer to label for application timing for higher rate and full application schedule.	12 hr.	7 days	11.25 lb. a.i.
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Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Cabrio Plus	Early Blight, Black Dot is 2.0 – 2.9 lbs. Late Blight, Powdery Mildew is 2.9 lbs. White mold suppression is 2.9 lbs.	Begin applications prior to disease development and continue on a 7 to 14 day interval. The low rate and longer interval can be used early season prior to the observance of symptoms and when disease pressure is low. For the control of late blight, begin applications prior to disease symptoms and continue on a 7 day interval. Do not graze livestock in treated areas.	24 hr.	3 days CT, DE, FL, MA, ME, MI, NH, NY, OH, PA, RI, VT, WI  14 all other states	17.4 lbs.
Champ Formula 2	Early blight, late blight: Light disease pressure .66-1 pt. <b>Severe disease pressure</b> Up to 2-2.66 pts.	Begin applications when plants are 6" high. Refer to label for full application schedule.	24 hr.	-	11.25 lb. a.i.
Cruiser Maxx™ Potato	Fusarium dry rot seed decay, seed-borne <i>Rhizoctonia</i> (stem canker and tuber black scurf), seed born <i>Helminthosporium solani</i> (silver scurf), green peach aphid, Colorado potato beetle, flea beetles, leafhoppers, leaf miners, psyllids, whiteflies: .19-.27 ozs./CWT (depending on seeding rate).	Rate based on 2.5 oz. seed piece sizes. For use as a seed treatment against disease (fludioxonil) and insect pests (thiamethoxam) in tubers.	12 hr.†	-	-
Cruiser Maxx™ Potato Extreme	.031 fl. ozs. /100 lbs of seed. Diseases/Insects include: Fusarium - dry rot and seed decay Rhizoctonia - stem canker and tuber black scurf <i>Helminthosporium</i> – seed borne silver scurf Insects Colorado potato beetle Green peach aphid Leafhopper Leaf miners Psyllids	Max use rate, 0.125 lb thiamethoxam per acre, 0.46 lb difenoconazole per acre, Do not use at a seed treatment rate that will result in more than 0.188 lb fl udioxonil per acre (85.3 grams ai/A) per year, Regardless of type of application (seed treatment, soil or foliar), do not apply more than 0.9 lb fludioxonil per acre	12 hr.	-	-



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Curzate 60DF	To suppress infection of emerging plant tissue by seed borne <i>Phytophthora infestans</i> : .25-1 oz./CWT of cut seed pieces. Late blight (application at crop emergence or later): 3.2 ozs.†	†Use only in combination with a labeled rate of a protectant fungicide, such as a product containing man-cozeb, maneb, triphenyltin hydroxide or chlorothalonil. Refer to label for full application schedule. For use as a potato seed treatment.	12 hr.	14 days	22.4 ozs. product
Endura	Early blight: 2.5-4.5 ozs. White mold, gray mold (suppression only): 5.5-10 ozs.	Apply prior to onset of disease. Refer to label for full application schedule.	12 hr.	10 days	20 ozs. product
Forum®	Late blight: 6 ozs. Tuber blight (suppression): 6 ozs.	Apply prior to onset of disease. Refer to label for application schedule recommendations. Reduced rates labeled in some states when tankmixed with another late blight fungicide.	12 hr.	4 days	30 ozs. product
Gavel® 75DF	Early blight, late blight: 1.5-2 lbs.	Begin applications at first sign of disease or when late blight disease is reported in the area. Refer to label for full application schedule.	48 hr.	14 days†	9 lb. a.i.††
Gem™ 500 SC	Early blight: 2.9-3.8 ozs. Late blight: 3.8 ozs.†	†Gem 500 SC should always be applied in tank mixture with a registered protectant fungicide labeled for use on late blight. Begin applications preventatively. Alternate Gem 500 SC with a protectant fungicide for use against late blight. Refer to label for full application schedule.	12 hr.	7 days	.75 lb. a.i. (23 ozs. product)
Headline or Headline SC	Black dot, early blight: 6-9 ozs. Late blight, powdery mildew, white mold (suppression): 6-12 ozs. <i>Rhizoctonia</i> (soilborne): Refer to label for use rates.	Begin applications prior to disease development. Refer to label for full application schedule.	12 hr.	3 days	72 oz. product



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Kocide 3000	Early blight, late blight: .5-1.75 lbs.	Apply .5-1.75 lbs. starting when plants are 2-6" high when disease is light. Apply up to 1.75 lbs./A when disease is more severe. Under conditions of severe disease, control will be improved by tank mixing with other compatible fungicides registered for use on potatoes. Refer to label for full application schedule.	48 hr.	-	83.3 lb. product
Luna® Tranquility	early blight, botrytis, white mold, black dot and mildew. 8-11.2 ounces per acre prior to disease infection.	To limit the potential for development of disease resistance to these fungicide classes, do not make more than 2 sequential applications of LUNA® TRANQUILITY or any Group 7 or Group 9 containing fungicide before rotating with a fungicide from a different Group.	12 hr.	7 days	34.6 oz.
Mancozeb: Dithane*, Penncozeb®	Early blight, late blight: Rates vary. Refer to labels.	For use as a seed piece treatment or foliar application. Refer to labels for details including application schedules.	-	-	-
Maneb 75DF	Early blight, late blight: 1.5-2 lbs. (foliar)	For use as a seed piece treatment or foliar application. For foliar application, begin when plants are 2-6" high. Refer to labels for details including application schedules.	24 hr.† †Except for seed treatment, see label.	14 days†† ††Certain states only. PHI is different in various states. Refer to label.	11.2 lb. a.i.
Manex®	Early blight, late blight: .8-1.6 qts. (foliar)	Maneb formulation. For use as a seed piece treatment or foliar application. For foliar application, begin when plants are 2-6" high. Refer to label for application timing and full schedule.	24 hr.† †Except for seed treatment, see label.	14 days†† ††Certain states only. PHI is different in various states. Refer to label.	11.2 lb. a.i.
Maxim® 4FS	Silver scurf;† .08 oz./CWT of cut seed pieces. Seed-borne or soil fungi that cause decay, damping-off and seedling blight: .08 oz./CWT seed, propagating root or tubes material.	†Seed-borne or soil infection. This rate is intended to control silver scurf only. Requires special application equipment. Refer to label.	12 hr.†† ††Except for seed treatment, see label.	-	-



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Maxim Potato Seed Protectant	Suppression of: Fusarium dry rot seed decay, seed-borne <i>Rhizoctonia solani</i> (stem canker and tuber black scurf), seed-borne <i>Helminthosporium solani</i> (silver scurf); .5 lb./CWT of cut seed pieces.	Fludioxonil formulation. For use as a potato seed piece treatment.	12 hr. <sup>†</sup>  †Except for seed treatment, see label.	-	-
Moncut® 70-DF	Black scurf (control), Powdery scab (suppression): .71-1.1 lbs. <sup>†</sup> , †† In-furrow application only.	††Use higher rate when disease pressure is expected to be severe, or if field has a history of infestation. Systemic fungicide.	12 hr.	-	-
Omega® 500F	Late blight: 5.5 ozs. White mold: 5.5-8 ozs.	Fluazinam formulation. Begin applications when plants are 6-8" tall or when conditions favor disease development. Refer to label for full application schedule.	48 hr.	14 days	1.82 lb. a.i.
pHorcepHite™	†Suppression of late blight: 2-4 qts. ††Downy mildew: 2-4 qts.	†Begin applications after plant establishment and conditions favor disease development. Apply at 2-4 week intervals as needed. ††Apply at the first onset of the disease; apply at 1-3 week intervals. pHorcepHite is a systemic product.	4 hr.	0 days	4 gals. product
Polyram® 80DF	Early blight, late blight: 1.5-2 lbs.	Begin applications when plants are 4-6" high or earlier if disease conditions warrant. Refer to label for full application schedule.	24 hr.	14 days	14 lbs. product
Previcur® Flex	Late blight, early blight: .7-1.2 pts. + Tankmix partner (refer to label)	Use the low rate only early in the season when disease pressure may be light. After canopy closure, switch to the higher rate. Refer to label for full application schedule.	12 hr.	14 days	4.5 lb. a.i.
Priaxor™	Black dot, Brown spot, Early blight, Botrytis gray mold suppression, Late blight suppression 4-8 fl. oz. Leaf spot, Powdery mildew, Rust, white mold suppression 6-8 oz.	Begin applications prior to disease development. See label for adjuvant and tank mix restrictions. Also labeled for aid in control of Rhizoctonia with in furrow application.	12 hr.	7 days	24 oz. product



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Quadris	Early blight, late blight, black dot, powdery mildew: 6-15.5 ozs.† Soilborne diseases Black scurf, silver scurf, black dot: .4-.8 oz./1000 feet row (single cross symbol)	†Refer to label for recommended rates and full application schedule.	4 hr.	14 days	2 lb. a.i.
Quadris Opti	Early blight, late blight, black dot, powdery mildew: 1.6 pts.	Refer to label for full application schedule.	12 hr.	14 days	1.5 lb. a.i. (azoxystrobin) 11.25 lb. a.i. (chlorothalonil)
Quadris Top	8-14 ozs, Black Dot, Brown Spot, Early Blight, Powdery Mildew, Septoria Leaf Spot.	Begin applications prior to disease development and continue throughout the season on a 7- to 14-day interval. Make no more than 2 consecutive applications before switching to another effective fungicide with a different mode of action. The addition of a spreading/penetrating type adjuvant such as a non-ionic based surfactant or crop oil concentrate or blend is recommended. If disease pressure is high, use the shortest interval and highest rate. The addition of a spreading/penetrating type adjuvant may enhance efficacy.	12 hr.	14 days	See Label
Ranman®	Late blight: 1.4-2.75 ozs.† Pink rot: .42 ozs./1000 linear ft.†† or 2.75 ozs.†††	†Foliar application ††At-planting (6.1 fl. ozs./A on 36" rows) †††Lay-by hillling. This rate is also for late blight tuber rot control. Refer to label for resistance statements.	12 hr.	7 days	.71 lb. a.i.
Reason® 500 SC	Early blight, late light, black dot, white rust: 5.5-8.2 ozs.	For optimum results, apply as soon as crop and/or environmental conditions become favorable for disease development. Refer to label for full application schedule.	12 hr.	14 days	.8 lb. a.i.  (24.6 fl. oz. a.i.)



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Ridomil Gold® Bravo® SC	Early blight, late blight, Pythium leak†, pink rot†: 2.5 pts.	†Storage rots. For early blight and late blight, begin applications early in the season prior to disease infection but no later than when the plant foliage meets the row. For Pythium leak and pink rot, make 1st application following tuber initiation, when the largest tubers are the size in diameter of a nickel. This period generally coincides with the initiation of flowering. Refer to label for full application schedule.	48 hr.	14 days††	Soil application: .188 lb. a.i. (mefenoxam) Foliar application: .4 lb. a.i. (mefenoxam)  11.25 lb. a.i. (chlorothalonil)
Ridomil Gold MZ WG	Early blight, late blight, Pythium leak†, pink rot†: 2.5 lbs.	†Storage rots. For early blight and late blight, begin applications early in the season prior to disease infection but no later than when the plant foliage meets the row. For Pythium leak and pink rot, make 1st application following tuber initiation, when the largest tubers are the size in diameter of a nickel. This period generally coincides with the initiation of flowering. Refer to label for full application schedule.	48 hr.	14 days††	10 lbs. product
Ridomil Gold/ Copper	Late blight, Pythium leak†, pink rot†: 2.5 lbs.	†Storage rots. For late blight, tankmix with .8 lb. a.i./A of maneb, mancozeb, metiram or chlorothalonil. Begin applications early in the season prior to disease infection but no later than when the plant foliage meets the row. For Pythium leak and pink rot, make 1st application at flowering. Refer to label for full application schedule.	48 hr.	14 days	7.5 lb. product
Rovral 4F	Early blight: 1-2 pts. White mold: 2 pts.	For early blight control, begin applications when conditions first become favorable for disease development. For white mold control, apply just prior to row closing, or at early 1st sign of disease. Refer to label for full application schedule.	24 hr.	14 days	4 lbs. a.i.
					A maximum of 4 total applications can be made per season.



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Scala™ SC	Early blight, botrytis leaf spot: brown spot†: 7 ozs.	For early blight, use only in a tankmix with the recommended dose rate of another effective early blight fungicide. For optimum results, begin applications as soon as crop and/or environmental conditions become favorable for disease development. Refer to label for full application schedule. Section 24c labels available for brown spot control in certain states. Refer to labels.	12 hr.	7 days	1.4 lb. a.i.  (35 fl. oz. a.i.)
Seed Treatments	-	There are numerous fungicide seed treatment formulations from many companies (i.e. Dyna-Shield Azoxystrobin Fungicide). Read and follow label directions.	-	-	-
Serenade Soil	Rhizoctonia spp. Pythium spp. Fusarium spp. Verticillium spp.** Phytophthora spp 2.2-13.2 fl oz/ 1000 ft row	For in-furrow applications, apply SERENADE SOIL as an in-furrow spray in 5 -15 gallons of water at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. Use the higher rates when the weather conditions are expected to be conducive for disease development, if the field has a history of disease problems, or if minimum/low till programs are in place.	4 hrs.	-	No Limit
Tanos	Brown spot, Early blight: 6 oz/a; Late blight, Black Dot Suppression: 6-8 oz/a; Bacterial Stem rot & Aerial Stem rot suppression: 8 oz	Do not make more than one application of Tanos before alternating with a fungicide that has a different mode of action, such as mancozeb, chlorothalinil, etc. Follow resistance management for Group 11 fungicides. For early blight control, make applications on a 7-10 day interval. For preventative late blight control, use 6 oz/a on a 7-10 day interval; and when late blight is favorable or present, use 8 oz/a on a 5-7 day interval.	12 hr.	14 days	48 oz product/crop cycle or 72 oz product/12 month period
Topsin M 70WP	White mold: 1-1.5 lbs.	Make 1st application just prior to row closure. Refer to label for full application schedule.	12 hr.	21 days	2.8 lbs.



## POTATO-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Vertisan™	Alternaria early bright and brown spot, Gray mold, Powdery mildew 10 to 24 fl. oz.  Black dot- 14 to 24 fl. oz.  Disease suppression: White mold- 14 to 24 fl. oz.  Soil-borne diseases Rhizoctonia stem canker and black scurf- 0.7 to 1.6 fl. oz./1000 row-ft.	Begin applications prior to disease development and continue on a 7- to 14-day interval. Use higher rate and shorter interval when disease pressure is high.  Make initial application at 100% full bloom of the primary inflorescence, or prior to row closure, and then again 14 days later.  At-plant, in-furrow, transplant seedling application. Maximum rate per acre per application is 24 fl. oz.  See soil-borne disease section instructions. Make no more than 2 sequential applications of VERTISAN™ before switching to a fungicide with a different mode of action.	12 hr.	7 days	72 fl. oz. a.i.
Zampro®	Late blight 11-14 fl. oz./A	Begin applications prior to disease development. Use the higher rate and shorter intervals when disease pressure is high.	12 hr.	4 days	42 oz. product

## SMALL GRAIN-DISEASE CONTROL

Aproach®	Black point, leaf and glume blotch, powdery mildew, rusts ( <i>Puccinia</i> spp.), spot blotch, tan spot: 3-12 fl oz  Disease suppression Scab ( <i>Fusarium</i> spp.): 6-12 fl oz	Make a single application between tillering through jointing for early season disease control/suppression. Starting no sooner than 7-days later, additional 6 fl oz to 12 fl oz treatments can be made depending on disease pressure and environmental conditions.  Begin applications prior to disease development and continue on a 7- to 14-day interval, depending on the targeted disease. Use higher rate and shorter interval when disease pressure is high. To optimize yields in cereals, it is important to protect the flag leaf from foliar diseases. For optimizing yield and flag leaf disease control, apply DuPont™ APROACH™ at Feekes' 9, 'flag leaf out'. Apply no later than the beginning of flowering (Feekes 10.5).	12 hrs.	For wheat forage: PHI=7 days. For wheat and barley hay: PHI= 14 days.  For wheat and barley grain/straw: PHI= 45 days.  (Apply no later than the beginning of flowering [Feekes 10.5] for grain)	36 fl oz. product
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## SMALL GRAIN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Aproach® Prima	Leaf and glume blotch, powdery mildew, tan spot: 3.4 fl oz.  Black point, leaf and glume blotch, powdery mildew, rusts ( <i>Puccinia</i> spp.), spot blotch, tan spot: 3.4-6.8 fl oz  Disease suppression – scab: 3.4-6.8 fl oz	Apply early season for preventive disease control/suppression. Additional treatments should be made depending on disease pressure and environmental conditions.  Begin applications prior to disease development. Use higher rate when disease pressure is high. To optimize yields in cereals, it is important to protect the flag leaf from foliar diseases. For optimizing yield and flag leaf disease control, apply APROACH™ PRIMA at Feekes' 9, 'flag leaf out'.	12 hrs.	For forage or hay: PHI=21 days.  For grain: PHI=45 days.	6.8 fl oz. product
Caramba®	Black point, Leaf blotch, Net blotch, Powdery mildew, Rust, Scald, Septoria leaf and glume blotch, Spot blotch, Tan spot 10-14 fl. oz. Head Scab Suppression 13.5-17 fl. oz.	Begin applications prior to disease development. Apply for head scab suppression at beginning of anthesis. Use 17 oz./A under severe disease pressure conditions. Labeled in wheat, barley, oats, rye and triticale	12 hr.	30 days  No livestock feeding restrictions	34 oz. product
Champ Formula 2	<u>Wheat, barley, oats</u> Septoria leaf blotch, <i>Helminthosporium</i> spot blotch: 1-1.33 pts.	Make 1st application by early heading. Refer to label for full application schedule. Use higher rates when conditions favor disease.	24 hr.	-	-
Dithane® M-45 or Dithane® F-45 Rainshield®	<u>Wheat, oats, rye triticale</u> <i>Helminthosporium</i> leaf spot, leaf rust, Septoria glume blotch, Septoria leaf spot, tan spot: Dithane® M-45: 2 lbs. Dithane® F-45: 1.6 qts.	For foliar application. Start applications at onset of disease or when plants are in the tillering to jointing stage and repeat at 7- to 10-day intervals. Adding a surfactant to spray solutions improves performance. Do not graze livestock in treated areas prior to harvest.	24 hr.	26 days or after Feekes growth stage 10.5	6 lb or 4.8 qts. (4.8 lb a.i.) 3 applications



## SMALL GRAIN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Fitness™	Glume blotch, leaf blight, powdery mildew, tan spot: 2-4 ozs. Barley scald, barley stripe, glume blotch, Helminthosporium leaf blight, leaf blight ( <i>Septoria</i> ), net blotch, powdery mildew, rust, spot blotch, tan spot: 4 ozs.	For early suppression and/or control of numerous diseases.	12 hr.	†	†† †Wheat: Do not apply after Feekes growth stage 10.5 (straw and grain); 30 days (harvest of forage or hay); Other cereals (barley, rye, triticale, oats): 30 days (harvest of forage or hay), 45 days (grain and straw)
Headline or Headline SC	Diseases controlled: Black point (w,t,b), leaf rust (w,t,b,r), leaf spot (r), net blotch (b), powdery mildew (w,t,b,r), scald (b). <i>Septoria</i> leaf and glume blotch (w,t,b,r), spot blotch (w,t,b), stem rust (w,t,b,r), stripe rust (w,t,b,r), tan spot (w,t,b): 6-9 ozs.	For optimal results, apply prior to disease development. Refer to label for full application schedule. Refer to label for livestock restrictions. Lower rates (3-6 fl. oz.) may be used for early season (herbicide timing) control of certain diseases.  w=wheat, t=triticale, b=barley, r=rye	12 hr.	†	18 fl. oz.
Kocide 3000	<u>Wheat, barley, oats</u> Helminthosporium spot blotch, <i>Septoria</i> leaf blotch: .5-.75 lb. Fusarium head blight (suppression), powdery mildew (suppression), <i>Stagonospora</i> leaf and glume blotch, stem rust	Make applications for early season disease control through heading. Refer to label for full application schedule.	48 hr.	-	3.5 lb. product
Penncozeb 75DF	<u>Wheat, triticale, barley, oats, rye</u> Helminthosporium leaf spot, leaf rust, scab, <i>Septoria</i> glume blotch, <i>Septoria</i> leaf spot, tan spot: 1-2 lbs.	Start application at onset of disease or when plants are in tillering to jointing stage. Refer to label for full application schedule.	24 hr.	26 dayst †CA PHI=46 days.	4.8 lb. a.i.



## SMALL GRAIN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
pHorcepHite™	<u>Wheat, triticale, barley, oats, rye, others</u> † <i>Phytophthora</i> spp., <i>Pythium</i> spp.; Suppression of <i>Fusarium</i> spp., <i>Rhizoctonia</i> spp. and head diseases: 2-4 qts. ††Downy mildew: 2-4 qts.	†Begin applications after plant establishment and conditions favor disease development. Apply at 2-3 week intervals as needed. ††Apply at the first onset of the disease; apply at 1-3 week intervals. pHorcepHite is a systemic product.	4 hr.	0 days	6 gals. product
Priaxor™	Black point (b,w,t), Leaf rust (b,w,t), Crown rust (o), <i>Helminthosporium</i> leaf spot (o), Leaf blotch (o), Net blotch (b), Powdery mildew (b,w,t), Scald (b), Septoria blotch and stem rot (o), Septoria leaf/glume blotch (b,w,t), Spot blotch (b,o,w,t), Stem rust (b,o,w,t), Stripe rust (b,w,t), Tan spot (b,w,t) 4-8 fl. oz. Eyespot suppression (w) 6-8 fl. oz.	Begin prior to disease development. Lower rates (2-4 fl. oz.) may be used for early season (herbicide timing) control of certain diseases. b=barley o=oats w=wheat t=triticale	12 hr.	-	16 oz. product
Proline 480 SC	<u>Barley</u> Rust, powdery mildew, <i>Fusarium</i> head blight: 5-5.7 ozs. (suppression), net blotch, scald, spot blotch: 2.8-4.3 ozs. <u>Wheat, Triticale</u> <i>Fusarium</i> head blight: 5-5.7 ozs. (suppression) Leaf rust, Septoria leaf and glume blotch, stem rust, tan spot: 4.3-5 ozs.	Refer to label for application timing and full application schedules.	48 hr.	†	.29 lb. a.i.
PropriMax EC	<u>Barley, wheat, Triticale, rye, oats</u> Rusts, powdery mildew, glume blotch, tan spot, <i>Helminthosporium</i> leaf blight, spot blotch, barley scald, net blotch, foot rot† (wheat only): 4 ozs.	†Tankmix half rate of other EPA-registered fungicide such as Topsin M. Apply at tillering but before elongation has occurred. Refer to label for application timing.	12 hr.	††	†††
				††All cereals - 30 days (forage, hay); Barley, rye, oats - 45 days (grain, straw)	†††.22 lb. a.i.; season max. is .11 lb. a.i. if forage or hay will be harvested.



## SMALL GRAIN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Prosaro™ 421 SC	<b>Barley</b> <i>Fusarium</i> head blight†, net blotch, powdery mildew, scald, spot blotch, rusts: 6.5-8.2 ozs. <b>Wheat</b> <i>Fusarium</i> head blight†, powdery mildew, rusts, <i>Septoria</i> leaf and glume blotch, <i>Stagonospora</i> blotch, tan spot: 6.5-8.2 ozs.	†Suppression only. Apply Prosaro 421 SC for <i>Fusarium</i> head blight (scab) when barley heads on the main stem are fully emerged (Feekes 10.5) or as a preventative foliar spray at early flower (Feekes 10.51) for wheat. For leaf and stem diseases, apply as a preventive foliar spray when the earliest disease symptoms appear on the leaves and stems. Refer to the label for additional info.	48 hr.	30 days	†† ††.226 lbs. a.i. (8.2 ozs. product)
Quadris	<b>Barley</b> Kernel blight, leaf rust: 6-12 ozs. Net blotch, barley stripe: 9-12 ozs. Powdery mildew, <i>Stagonospora</i> blotch: 12 ozs. <b>Wheat, tritcale</b> Leaf rust, stripe rust, stem rust, <i>Septoria</i> leaf and glume blotch, tan spot: 4-12 ozs. Powdery mildew 7.5-11 ozs.	Apply prior to disease development up to late head emergence (Feekes 10.5). Refer to label for recommended application schedule.	4 hr.	† †Do not apply within 7 days (7-day PHI) for forage and hay. Do not apply within 14 days of grazing	.4 lb. a.i.
Quilt or Quilt Xcel	<b>Wheat, tritcale, barley</b> Early season suppression of: Powdery mildew, leaf blight, glume blotch, tan spot: 7-14 ozs. Control of: rust, powdery mildew, leaf blight, glume blotch, tan spot, <i>Helminthosporium</i> leaf blight, spot blotch, barley scald, barley stripe, net blotch, kernel blight: 10.5-14 ozs. Foot rot, eye spot: 14 ozs.†	†Foot rot and eye spot: apply full rate plus half the rate recommended of other EPA registered fungicides such as Topsin M. Apply at tillering but before elongation has occurred. Suppression of early diseases: Apply in the spring. Other diseases listed: Highest yields are normally obtained when Quilt is applied when the flag leaf is 50% to fully emerged. Can be applied through full head emergence (Feekes 10.5). Do not apply after this stage to avoid possible illegal residues.	12 hr.	† Do not apply within 7 days of harvest (7-day PHI) for forage and hay	.22 lb. a.i. .4 lb. a.i. propiconazole azoxystrobin

## When I see that windsock turn and lift a little, I think to myself, "Here we go."

A subtle shift in wind speed or direction can signal a change in the weather. Which can be good or bad, depending on if it's too wet or too dry, too cold or too hot already. The fact is, environmental stresses of all kinds can hamper plant development and limit crop yields. Quilt Xcel® fungicide protects growing corn, soybeans and wheat from the inside, against whatever's happening outside. To learn more, visit us online at [QuiltXcel.com](http://QuiltXcel.com) or talk to your Syngenta retailer.

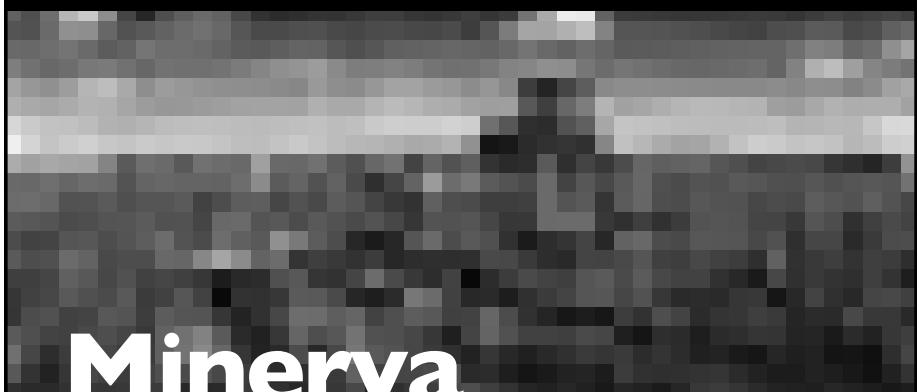


Plant Performance assumes the presence of disease pressure.

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# Minerva

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Make Minerva™ Fungicide the foundation of your sugarbeet fungicide program. Applied to the sugarbeet canopy, this aggressive systemic fungicide provides disease control that lasts. Minerva is absorbed and redistributed throughout the plant, providing rapid disease control and extended protection of new growth. Suitable for ground, aerial or chemigation application, Minerva also controls powdery mildew and can be tank mixed with a variety of products, including postemergence herbicides.



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## SMALL GRAIN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Stratego	Barley Glume blotch, leaf blotch, net blotch, powdery mildew, rust, scald, spot blotch: 7 ozs.† Oats Septoria leaf blotch, crown rust: 7 ozs.† <u>Wheat, Triticale</u> Glume blotch, leaf blight, powdery mildew, rusts, tan spot: 10 ozs.†	† Refer to label for early season disease control rate range. Begin applications preventively when conditions are favorable for disease development. Refer to label for full application schedule. Barley and oats: Do not apply after Feekes growth stage 8 (the ligule of the flag leaf emerges). Wheat and Triticale: Do not apply after Feekes growth stage 10.5 (full head emergence).	12 hr.	††	††† Barley, Oats: .1183 lb. a.i. (14 fl. oz. a.i.)
Stratego YLD	Stagonospora Blotch (Stagonospora nodorum) Septoria Blotch (Septoria tritici) Powdery Mildew (Blumeria graminis f. sp. tritici) Rusts (Puccinia spp.) Tan Spot (Pyrenophora tritici-repentis 2-4 fl oz./A	Begin applications preventively when conditions are favorable for disease development. A second application (minimum interval of 14 days) may be made if needed. Early season leaf disease control/suppression: Apply 2 to 4 fl.oz./acre of Stratego YLD Fungicide for control of early season tan spot, Septoria, Stagonospora, and powdery mildew and suppression of rusts.	12 hr.	35 days	8 fl. ozs.
Tilt 3.6 EC	Wheat, barley, rye, triticale, oats Early season suppression: Powdery mildew, leaf blight, glume blotch, tan spot: 2-4 ozs. Control of leaf diseases: Rust, powdery mildew, leaf blight, glume blotch, tan spot, Helminthosporium leaf blight, spot blotch barley scald, barley stripe, net blotch: 4 ozs. Other diseases: Foot rot, Fusarium head blight (suppression): 4 ozs.	Early season suppression: Apply in the spring. Control of leaf diseases: Apply when the flag leaf is 50% to fully emerged for highest yield response. Foot rot: Apply Tilt plus half rates of other EPA registered fungicides such as Topsin M. Apply at tillering, but before elongation has occurred. Fusarium head blight: Apply at approximately 50% flowering. Addition of a penetrating type of adjuvant may increase suppression.	12 hr.	30 days (forage or hay)	† †.22 lb. a.i.; 11 lb. a.i. (if forage or hay will be harvested).



## SMALL GRAIN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
TwinLine®	Barley, oats, rye, triticale, wheat Black point, Leaf blotch, Net blotch, Powdery mildew, Rust, Scald, Septoria leaf and glume blotch, Spot blotch, Stripe rust, Tan spot: 7-9 ozs.	Use the higher rate and shorter interval when disease pressure is high. Lower rates (6-9 fl. oz.) may be used for early season (herbicide timing) control of certain diseases in barley, wheat and triticale.	12 hr.	†  †Apply no later than the beginning of flowering (Zadok's 59 or Feekes 10.5). Do not harvest barley hay within 14 days of last app.	18 fl. oz.

## SOYBEAN-DISEASE CONTROL

Aproach®	Aerial web blight, anthracnose, alternaria leaf spot, brown spot, Cercospora blight and leaf spot, purple seed stain, downy mildew, frogeye leafspot, pod and stem blight, powdery mildew, rust ( <i>Puccinia</i> spp. and <i>Phakospora</i> spp.), target spot: 6-12 fl oz.  Sclerotinia stem rot (White mold): 8-12 fl oz.	Begin applications prior to disease development and continue on a 7- to 14-day interval. Use higher rate and shorter interval when disease pressure is high.  For white mold: make initial preventive application at 100% bloom (1 flower blooming on all plants) and follow with 2nd application 7-10 days later at full bloom.	12 hrs	For grain, forage, and hay: PHI=14 days	12 fl oz product (forage and hay) 36 fl oz product (grain)
Aproach® Prima	Aerial web blight, anthracnose, Alternaria leaf spot, brown spot, Cercospora blight and leaf spot, purple seed stain, downy mildew, frogeye leafspot, pod and stem blight, powdery mildew, rust ( <i>Puccinia</i> spp. and <i>Phakospora</i> spp.) target spot: 5-6.8 fl oz	Begin applications prior to disease development and continue on a 14 to 28-day interval. Use higher rate and shorter interval when disease pressure is high.	12 hrs	For forage and hay: PHI=14 days.  For grain, PHI=30 days.	6.8 fl oz product (forage and hay)  13.6 fl oz product (grain)



## SOYBEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Ballad Plus/ Sonata	Bacterial Blight Pseudomonas syringae Brown Spot Septoria glycines Bacterial Pustule Xanthomonas spp. Cercospora Leaf Spot Cercospora spp. Downy Mildew Peronospora/Asian Soybean Rust Phakopsora pachyrhizici manshurica White Mold (Sclerotinia Stem Rot) Sclerotinia sclerotiorum 1-4 qts/A	Apply Ballad Plus as a foliar spray alone, in alternating spray programs or in tank mixes with other registered crop protection products. When conditions are conducive to heavy disease pressure, use Ballad Plus in a rotational program with other registered fungicides. Begin applications of Ballad Plus when environmental conditions and plant stage are conducive to disease development Repeat on 7 to 14 day intervals or as needed.  Organic Approved	4 hrs.	-	No Limit
Bravo Weather Stik or Initiate 720	Anthracnose, Diaporthe pod and stem rot, frogeye leaf spot, purple seed stain, Cercospora leaf blight, Septoria brown spot, rust (suppression): Two application program - 1.5-2.25 pts. Three application program - 1-2 pts.	Refer to label for full application schedule. Two application program: For determinate varieties, make the 1st application at R3 stage and 2nd application at R5 stage. For indeterminate varieties, make the 1st application when largest pods are 1-1.25" in length and 2nd app. 14 days later. Three application program: Use in areas with a history of moderate to severe disease intensity. For determinate varieties, make the 1st application at R1 stage, 2nd app. at R3 and 3rd app. at R5 stage. For indeterminate varieties, make the 1st application 1 week after 1st flowering and continue apps. at 14 day intervals.	12 hr.	6 weeks	4.5 lb. a.i.
Cobra or Phoenix + Adjuvant	6-8 ozs./A or 6-8 ozs./A + †  White mold (suppression)	†Apply NIS at 1 qt./100 gal. Make application just before 1st bloom (R1). Generally this occurs after the 4th trifoliolate is fully expanded. Response to these pesticides is not a fungal response but one that may involve Systemic Aquired Resistance (SAR).	12 hr.	†  †Do not apply after R5 stage 45 days (or after growth stage R6)	††  †† 0.4 lb.



## SOYBEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Headline or Headline SC	Alternaria leaf spot, anthracnose, Asian soybean rust†, brown spot, Cercospora blight, Frog-eye leaf spot, pod and stem blight, Rhizoctonia aerial blight: 6-12 ozs. Southern blight (suppression): 12 ozs.	†Refer to label for <i>Management of soybean rust</i> section. Begin applications prior to disease development. Use the higher rate and shorter interval when disease pressure is high. Refer to label for full application schedule.	12 hr.	21 days	.39 lb. a.i.
Laredo® EC	Soybean rust: 4-8 ozs.	Apply as early as possible, prior to infection or at first sign of disease. Supplemental label. Refer to label for full application schedule.	24 hr.	28 days	.25 lb. a.i.
pHorcepHite	† <i>Phytophthora</i> spp., <i>Pythium</i> spp.; Suppression of <i>Fusarium</i> spp., <i>Rhizoctonia</i> spp.: 2-4 qts. ††Downy mildew: 2-4 qts.	†Begin applications after plant establishment and conditions favor disease development. Apply at 1-3 week intervals as needed. ††Apply at the first onset of the disease; apply at 1-3 week intervals. pHorcepHite is a systemic product.	4 hr.	0 days	6 gals. product
Priaxor™	Alternaria leaf spot, Anthracnose, Asian soybean rust, Brown spot, Cercospora blight, Frogeye leaf spot, Pod and stem blight, Rhizoctonia aerial blight, Sclerotinia blight suppression 4-8 fl. oz. Southern blight suppression 8 fl. oz.	Begin applications prior to disease development. Adjuvants may be used. Refer to label.	12 hr.	21 days	16 oz. product
				Soybean forage: 14 days	
Proline	Asian Soybean Rust ( <i>Phakopsora pachyrhizi</i> ) Frog Eye Leaf Spot ( <i>Cercospora sojina</i> ) Powdery Mildew ( <i>Microsphaera diffusa</i> ) Brown Spot ( <i>Septoria glycines</i> ) 2.5 – 3.0 fl oz per acre  Sclerotinia Stem Rot also known as White Mold ( <i>Sclerotinia sclerotiorum</i> ) (Suppression Only) 3.0 – 5.0 fl oz per acre	Apply PROLINE 480 SC FUNGICIDE as a broadcast, preventative foliar spray or at first visible symptoms of the disease. Repeat applications on a 10- to 21-day spray interval if environmental conditions are favorable for continued disease development. Use of the higher rate and shorter spray intervals are recommended when disease pressure is severe.  Sclerotinia Stem Rot (Suppression Only): Apply PROLINE 480 SC FUNGICIDE as a broadcast foliar spray at R1 (beginning bloom) when conditions are favorable for disease development. A sequential treatment of PROLINE 480 SC FUNGICIDE or Stratego YLD Fungicide may be made at R3 – R4 (beginning to full pod).	12 hrs.	21 days	12.9



## SOYBEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Quadris	Aerial blight, anthracnose†, Alternaria leaf spot, brown spot, Cercospora blight and leaf spot, frogeye leaf spot, pod and stem blight, rust: 6-15.5 ozs.	†Quadris has shown excellent control in field observations. Aerial blight: Apply at the 1st appearance of disease. Other foliar diseases (except rust): Apply at R3 and R5. Soybean rust: Apply at 1st indication that disease is in the area. For all other diseases, refer to label for full app. schedule.	4 hr.	††	†††
				††14 days (beans); 0 days (forage, hay)	†††1.5 lb. a.i. (azoxystrobin containing products) (92.3 ozs. product)
Quadris Top™ or Quadris Top SB	Aerial Blight, Alternaria Leaf Spot, Anthracnose, Brown Spot, Cercospora Blight and Leaf Spot, Frogeye Leaf Spot, Pod and Stem Blight, Powdery Mildew, and Rust 8.0-14 fl. oz.	Begin applications prior to disease onset when conditions are conducive for disease. Apply Quadris Top on a 7- to 10-day schedule making no more than 2 sequential applications before alternating to another fungicide with a different mode of action. If disease pressure is high, use the shortest interval and highest rate.	12 hr.	14 days	Do not apply more than 0.22 lb a.i. difenoconazole-containing product.
				Do not feed soybean hay, forage and silage.	Do not apply more than 1.5 lb. a.i. of an azoxystrobin-containing product.
Quilt or Quilt Xcel	Aerial web blight, anthracnose†, brown spot, frogeye leaf spot, soybean rust, Alternaria leaf spot, Cercospora blight and leaf spot, pod and stem blight: Quilt: 14-20.5 ozs. Quilt Xcel: 10.5-21 ozs.	†Quilt Xcel has shown excellent control of anthracnose in field observations. Refer to label for rates for specific diseases. Aerial web blight: Apply at the 1st appearance of disease. Other foliar diseases (except rust): Apply at R3 and R5. Soybean rust: Apply at 1st indication that disease is in the area. For all diseases, refer to label for full application schedule.	12 hr.	21 days (seed) 0 days (forage and hay)	1.5 lb. a.i.†† .34 lb. a.i.†††
					††azoxystrobin maximum †††propiconazole maximum
Rally® 40 WSP	Rust 2.5-5 oz	Apply using ground or aerial equipment in an adequate spray volume to achieve good coverage and canopy penetration. For best results, apply as early as possible, prior to infection and make subsequent applications 10- to 14-day intervals.	24 hr.	28 days	10 oz (4 oz a.i.) 2 applications
Stratego YLD	Alternaria Leaf Spot (Alternaria spp.) Anthracnose ( <i>Coleotrichum truncatum</i> ) Asian Soybean Rust ( <i>Phakopsora pachyrhizoides</i> ) Brown Spot ( <i>Septoria glycines</i> ) Cercospora Blight ( <i>Cercospora kikuchii</i> ) Frogeye Leaf Spot ( <i>Cercospora sojina</i> ) Pod & Stem Blight ( <i>Diaporthe phaseolorum</i> ) Powdery Mildew ( <i>Microsphaera diffusa</i> ) Rhizoctonia Aerial Blight ( <i>Rhizoctonia solani</i> ) 4-4.65 fl oz/A	Apply Stratego YLD Fungicide as a broadcast foliar spray at early flowering or prior to disease development, whichever is earlier. Repeat applications on a 10- to 21-day spray interval if disease monitoring or environmental factors indicate favorable conditions for continued disease development. Use of the higher rates and shorter spray intervals are recommended when disease pressure is severe. Stratego YLD Fungicide may be applied by ground, air, or chemigation.	4 hr.	-	No Limit



## SOYBEAN-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Tilt	Aerial web blight, anthracnose, brown spot, frogeye leaf spot, Soybean rust: 4-6 ozs.	Aerial web blight: Apply at the 1st appearance of disease. Other foliar diseases (except rust): Apply at R3 and R5. Soybean rust: Apply at 1st indication that disease is in the area. For all diseases, refer to label for full application schedule.	12 hr.	†	.34 lb. a.i.
				†Apply up to R6.	
Topsin M WSB	Anthracnose, brown spot, frogeye leaf spot, pod and stem blight, purple seed stain: .5-1 lb. White mold: .75-1 lb. Aerial blight (suppression): 1 lb.	White mold: Begin application at early bloom (R1-R2 stage). Aerial blight: Make initial application when disease threatens. For all other listed diseases: Apply from full bloom to when pods are 1/8" to 1/4" in length. For all diseases: Refer to label for full application schedule. Do not graze or feed treated hay to livestock.	12 hr.	21 days	1.4 lb. a.i.
Vertisan™	Anthracnose, Alternaria leaf spot, Brown Spot, Cercospora blight and leaf spot, Frogeye leaf spot, Pod and stem blight, Rust, Target Spot: 10 to 30 fl. oz.  Sclerotinia stem rot 16 to 30 fl. oz.	Begin applications prior to disease development and continue on a 7- to 14-day interval. Use higher rate and shorter interval when disease pressure is high. For white mold: make initial preventive application at 100% bloom (1 flower blooming on all plants) and follow with 2nd application 7-10 days later at full bloom. Make no more than 2 sequential applications of VERTISANT™ before switching to a fungicide with a different mode of action. Do not use soybean forage or hay for livestock feed.	12 hr.	14 days	61 fl. oz. a.i.

## SUGAR BEET-DISEASE CONTROL

Ballad Plus/ Sonata	Powdery Mildew Erysiphe betae Erysiphe polygoni Leaf Spot Cercospora beticola Ramularia Ramularia spp. Rust Uromyces betae  2-4 qts/A	Apply Ballad Plus as a foliar spray alone, in alternating spray programs or in tank mixes with other registered crop protection products. When conditions are conducive to heavy disease pressure, use Ballad Plus in a rotational program with other registered fungicides. Begin applications of Ballad Plus when environmental conditions and plant stage are conducive to disease development Repeat on 7 to 14 day intervals or as needed..  Organic Approved	4 hrs.	-	No Limit
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## SUGAR BEET-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Caramba®	Powdery mildew 9-14 fl. oz.	Begin applications prior to disease development. Tank mix with sulfur for resistance management.	12 hr.	14 days	34 oz. product
Dithane® M45 or Dithane® F-45 Rainshield®	Cercospora leaf spot Dithane® M45: 1.5-2 lb. Dithane® F45: 1.2-1.6 qts.	Start applications when disease first threatens and repeat every 7- to 10-days. Addition of recommended surfactant to spray solutions improves performance. Do not feed treated tops to livestock.	24 hr.	14 days	Dithane® M45: 14 lb. (11.2 lb. a.i.) Dithane® F45: 11.2 qts. (11.2 lb. a.i.)
Enable® 2F	Cercospora leaf spot, powdery mildew 8 fl. oz.	Start applications when conditions are favorable for disease and reapply every 14- to 21-days. Tank-mix with a protectant fungicide and COC or NIS. Do not make more than two applications per season.	12 hr.	14 days	16 fl. oz (.25 lb. a.i.) 2 applications
Gem 500 SC	Foliar diseases Cercospora leaf spot, powdery mildew: 2.9-3.6 ozs. Soilborne diseases (Suppression) Rhizoctonia stem canker, crown rot: 2.9-3.6 ozs.	For foliar diseases, begin applications preventively. For soilborne diseases, begin either foliar broadcast or banded applications at the 4-leaf to row closure growth stage. Refer to label for full application schedule.	12 hr.	21 days	.325 lb. a.i. (10 ozs. product)
Headline or Headline SC	Cercospora leaf spot, powdery mildew: 9-12 ozs.	Begin applications prior to disease development. Use the higher rate and shorter interval when disease pressure is high. Refer to label for full application schedule. No livestock feeding restrictions.	12 hr.	7 days	48 oz. product
Inspire™ SB	Cercospora, powdery mildew: 7 ozs.	Alternate applications with a non-triazole fungicide on a 10-12 day schedule.	12 hr.	7 days	.46 lb. a.i.



## SUGAR BEET-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Inspire XT	Cercospora, powdery mildew: 7 ozs.	Begin applications preventively or on a forecast system. For powdery mildew, apply at first sign of disease. Apply on a 10-21 day schedule. Make only Inspire XT spray then alternate to a non-triazole fungicide (non-Group 3) that is registered for sugar beets for these diseases.	12 hr.	21 days	0.34 lb a.i. propiconazole & 0.46 lb a.i. difenoconazole
Kocide 3000	Cercospora leaf spot: .75-2 lbs.	Begin applications when conditions favor disease development. Use higher rates when conditions favor disease. Refer to label for full application schedule. Addition of a spreader/sticker is recommended.	24 hr.	-	-
Penncozeb 75DF	Cercospora leaf spot, rust: 1.5-2 lbs.	Begin applications when disease 1st threatens. Refer to label for full application schedule.	24 hr.	14 days	11.2 lb. a.i.
Priaxor™	Cercospora leaf spot, powdery mildew 6-8 fl. oz. Rhizoctonia stem canker and crown rot 8 fl. oz.	Begin applications prior to disease development. Adjuvants may be used. Refer to label for restrictions.	12 hr.	- Leaves, roots, and tops: 7 days	24 oz. product
Proline 480 SC	Foliar diseases Cercospora leaf spot, powdery mildew: 5-5.7 ozs. <u>Soil-borne diseases</u> Rhizoctonia stem canker, root rot, crown rot: 5.7 ozs.	Foliar diseases: Apply at the first sign of disease. Use the higher user rate and shorter intervals when conditions are favorable for severe disease pressure and/or when growing less disease resistant varieties. Soil-borne diseases: Apply in a 7" band at the 4-leaf to row closure growth stage.	12 hr.	7 days	.53 lb. a.i. (17.1 ozs. product)
Quadris	<u>Foliar diseases</u> Cercospora, powdery mildew: 9-15.5 ozs. <u>Soilborne diseases</u> Rhizoctonia crown rot, Pythium root rot: .4-.8 oz./1000 feet row	For control of powdery mildew, make preventative applications on a 5-7 day schedule. For all other foliar diseases, applications should begin prior to disease development. Refer to label for full application schedule and for soilborne/seedling disease control recommendations. Other diseases are listed in label.	4 hr.	0 days	2 lb. a.i. (123 ozs. product)
Ridomil Gold MZ WG	Downy mildew: 2.5 lbs.	Foliar application. Provides systemic activity. Refer to label for full application schedule.	48 hr.	14 days	10 lbs. product
Ridomil Gold SL	Pythium root rot: 1-2 pts.	PPI or soil-spray application.	48 hr.	0 days	-



## SUGAR BEET-DISEASE CONTROL



Product	Diseases/Rate Per Acre	Comments	REI	PHI	Max. allowable product/A/season
Thiolux® Jet	Powdery mildew, red spider mite: 10-20 lbs.	Apply at 10 to 30-day intervals with or without other pesticides at first symptoms.	24 hr.	-	-
Topsin M WSB	Cercospora leaf spot, powdery mildew: .5-1 lb.	For Cercospora leaf spot, apply when conditions become favorable for disease development before the disease appears. For powdery mildew, apply as soon as disease symptoms appear. Refer to label for full application schedule.	12 hr.	21 days	2.1 lb. a.i.
Vertisan™	Cercospora leaf spot, Powdery mildew, Rust: 14 to 30 fl. oz. Soil-borne diseases: 0.7 to 1.6 fl. oz./1000 row-ft.	Begin applications prior to disease development and continue on a 7- to 14-day interval. Use higher rate and shorter interval when disease pressure is high. At-plant, in-furrow, transplant seedling application. Maximum rate per acre per application is 30 fl oz. See soil-borne disease section instructions. Make no more than 2 sequential applications of DuPont™ VERTISAN™ fungicide before switching to a fungicide with a different mode of action. Sugarbeet tops may be used for grazing or forage 0 days after the last application.	12 hr.	7 days	61 fl. oz. a.i.

## RAINFALL EFFECTS ON POSTEMERGE APPLICATIONS



Rainfall shortly after application often reduces weed control from postemergence applications because the herbicide is washed off the leaves before absorption is complete. Herbicides vary in rate of absorption and in ease of being washed from leaves; therefore, herbicides vary in response to rainfall. The amount and intensity of rainfall influence the washing of herbicide from leaves. The approximate time between application and rainfall needed for maximum weed control from several herbicides are as follows:

Pesticide	Time needed between application and rainfall (Hours)	Pesticide	Time needed between application and rainfall (Hours)
Accent Q	4	Liberty 280 SL	4
Achieve	1	Matrix	4
Aim	1	Maverick	4
Ally	4	MCP Amine	4
Amber	4	MCP Ester	1
Armezon	1	Northstar	4
Assure II/Matador	1	Olympus	4
Atrazine & Oil	4*	Olympus FLEX	4
Banvel	2-3	OpTill	1
Basagran	4	OpTill Pro	1
Basagran 5L	4	Osprey	4
Basis Blend	4	Paramount	6
Basis Gold	4	Peak	1
Beacon	4	Permit	4
Betamix	6	Phoenix	2
Betanex	6	Poast	1
Beyond	1	Progress	6
Blazer Ultra	1	Puma	1
Bronate Advanced	1/2-1	Pursuit	1
Buctril	1	RT 3	2
Buctril & atrazine	1	Raptor	1
Callisto	1	Realm Q	
Capreno	1	Require Q	
Cimarron Max	4	Resolve Q	
Clarity	4	Resource	1
Classic	1	Rezult	1
Clean	4	Rifle Plus	4-6
Cobra	1/2	Rimfire Max	4
Crossbow L	6	Roundup PowerMax	1/2
Curtail/Curtail M	6	Roundup WeatherMax	1/2
Dakota	1	Rowel	1
Discover	1/2	Saber	1
Distinct	4	Salvo	1
Everest	1	Select	1
Express	4	Sharpen	1
Extreme	1	Spirit	4
Finesse	4	Starane Ultra	1
FirstRate	2	Status	4
Flexstar	1	Steadfast	4
Fusilade DX	1	Stellar	1
Fusion	1	Stinger	6
Gramoxone SL	1/2	Synchrony STS	1
Grazon P+D	4	Tordon 22K	2
Goal	4	Touchdown HiTech	4
Halex GT	1/2	Touchdown Total	1
Harmony Extra	4	Valor	1
Harmony GT	1	Verdict	1
Hat Trick	4	2,4-D Amine	6
Hornet WDG	2	2,4-D Ester	2
Huskie	1	WideMatch	4
Laddok	4	Wolverine	1
Laudis	1	Yukon	4

\* rain may improve performance.

**Rule of Thumb:** Many farmers do not spray when there is dew on the crops or weeds. Many times you can go ahead and spray if you follow this simple rule of thumb: Spraying is OK if the combination of dew and spray do not exceed the point of run-off.

**Insecticide:** Once they are dry on the plant, rainfall has minimal effects on performance. Rainfall always has an effect on residual control. Use of Bond will decrease the adverse affect of rainfall on insecticide.

## ESTIMATED PRODUCT WEIGHTS (LBS.)/GALLON



Product	Approx. Weight/Gallon At 68° F	Product	Approx. Weight/Gallon At 68° F
AAtrex 4L . . . . .	9.15	Duramax . . . . .	10.11
ACA . . . . .	10.55	Eptam . . . . .	7.97
ACA Plus . . . . .	10.14	Evergol Energy . . . . .	8.91
Accomplish LM . . . . .	8.60	Eradicane . . . . .	7.97
Activator 90 . . . . .	8.35	Expert . . . . .	9.40
Admire Pro . . . . .	10.75	Extreme . . . . .	9.14
Alion . . . . .	8.75	Fargo . . . . .	8.59
Allegiance . . . . .	9.16	Fastac . . . . .	7.59
Amine 2,4-D . . . . .	9.69	Fitness . . . . .	8.67
Apron Max RTA . . . . .	8.95	Flexstar GT 3.5 . . . . .	10.08
Armezon . . . . .	9.43	Flexstar . . . . .	9.08
Asana XL . . . . .	7.90	Folicur . . . . .	9.33
Assure II/Matador . . . . .	8.55	ForeFront . . . . .	9.75
Atrazine 4L . . . . .	9.20	ForeFront HL . . . . .	9.78
Awaken . . . . .	10.39	Four Power Plus . . . . .	9.75
Balan . . . . .	7.84	Forum . . . . .	9.60
Balance Flex . . . . .	10.00	Franchise . . . . .	8.07
Balance Pro . . . . .	10.00	Fultime NXT . . . . .	9.25
Banvel . . . . .	9.90	Fusilade DX . . . . .	8.12
Basagran . . . . .	9.91	Fusion . . . . .	8.30
Basagran 5L . . . . .	10.25	Gaucho 600 . . . . .	10.25
Baythroid XL . . . . .	8.49	Gem 500 SC . . . . .	9.50
Belt . . . . .	10.25	Gramoxone SL . . . . .	9.10
Betamix . . . . .	8.26	Grazon . . . . .	9.53
Betanex . . . . .	8.17	Grazon Next HL . . . . .	9.78
Beyond . . . . .	8.75	Ignite . . . . .	9.58
Bicep II MAGNUM or Cinch ATZ . . . . .	9.31	Halex GT . . . . .	10.18
Bicep Lite II MAGNUM . . . . .	9.31	Harness . . . . .	9.23
Blazer Ultra . . . . .	9.82	Harness Xtra . . . . .	9.25
Boundary 6.5EC . . . . .	9.01	Harness Xtra 5.6L . . . . .	9.26
Bronate Advanced . . . . .	9.73	Hat Trick . . . . .	8.52
Brozine . . . . .	9.224	Headline . . . . .	8.80
Buctril 2EC . . . . .	8.60	Headline SC . . . . .	9.01
Buctril/atrazine . . . . .	9.39	Headline AMP . . . . .	9.11
Cadence . . . . .	9.25	Hero . . . . .	8.27
Cadence ATZ . . . . .	9.29	Huskie . . . . .	9.50
Cadence Lite ATZ . . . . .	9.26	Impact . . . . .	9.43
Callisto . . . . .	10.00	Imperium . . . . .	8.34
Capreno . . . . .	10.16	Initiate 720 . . . . .	11.18
Caramba . . . . .	8.70	Initiate ZN . . . . .	10.68
Charter F <sup>2</sup> . . . . .	8.93	Instinct . . . . .	9.28
Choice Weather Master . . . . .	9.41	Intensity . . . . .	7.92
Cinch . . . . .	9.28	Intensity One . . . . .	7.76
Clarity . . . . .	10.23	Instinct . . . . .	9.28
Cobalt . . . . .	8.34	Keystone NXT . . . . .	9.26
Cobalt Advanced . . . . .	8.83	Keystone LA NXT . . . . .	9.25
Cobra . . . . .	8.62	Laudis . . . . .	10.18
Corvus . . . . .	10.00	Leverage 360 . . . . .	9.66
Credit Extra . . . . .	10.27	Lexar . . . . .	9.11
Crossbow L . . . . .	8.45	LI 700 . . . . .	8.64
Degree Xtra . . . . .	9.25	Liberate . . . . .	8.12
Discover NG . . . . .	7.89	Liberty 280 / Rely . . . . .	9.58
Dispatch AMS . . . . .	9.81	Lorsban Advanced . . . . .	9.35
Dual MAGNUM . . . . .	9.13	Low Vol 4 . . . . .	8.62
Dual II MAGNUM . . . . .	9.28	Low Vol 6 . . . . .	9.45
Dual II MAGNUM SI . . . . .	8.95	Lumax . . . . .	9.09
Durango . . . . .	10.11	Luna Experience . . . . .	9.41

These weights could vary with temperature and lot. Check each bill of lading.

## ESTIMATED PRODUCT WEIGHTS (LBS.)/GALLON



Product	Approx. Weight/Gallon At 68° F	Product	Approx. Weight/Gallon At 68° F
Luna Priviledge.	10.00	Sharpen . . . . .	9.6
Luna Sensation . . . . .	9.75	Sherpa . . . . .	8.73
Luna Tranquility . . . . .	9.25	Sniper . . . . .	8.00
Matador . . . . .	9.16	Sonalan HFP . . . . .	9.60
Makaze . . . . .	9.75	Spartan . . . . .	10.06
Makaze Yield Pro . . . . .	9.79	Spartan Charge . . . . .	9.92
Mec Amine-D . . . . .	9.43	Stallion . . . . .	8.93
Monsoon . . . . .	9.35	Stamina . . . . .	9.10
Movento . . . . .	8.96	Stamina F <sup>3</sup> Cereals . . . . .	8.94
MSO . . . . .	7.44	Starane Flex . . . . .	8.22
N-Serve . . . . .	8.12	Starane Ultra . . . . .	8.79
Nortron SC . . . . .	9.50	Starane + Salvo . . . . .	8.83
Oberon 4SC . . . . .	9.08	Stealth . . . . .	8.85
Outlook . . . . .	9.40	Stinger . . . . .	9.68
PastureGard HL . . . . .	9.25	Stratego . . . . .	9.08
Penncap . . . . .	9.02	Stratego YLD . . . . .	9.68
Permethrin . . . . .	8.36	Strut . . . . .	10.26
Phoenix . . . . .	8.41	SureStart II . . . . .	9.01
Poast . . . . .	7.77	Surpass NXT . . . . .	9.23
Poncho Votivo . . . . .	10.50	Sutan + . . . . .	7.84
Pramital 255E . . . . .	7.80	Swagger . . . . .	8.85
Prefix . . . . .	9.32	Targa . . . . .	8.51
Precise . . . . .	10.00	Task Force 2 . . . . .	10.26
Priaxor . . . . .	9.68	Thiosul . . . . .	11.05
Princep 4L . . . . .	9.47	Titan . . . . .	8.60
Prism . . . . .	7.78	Tombstone . . . . .	8.20
Proaxis . . . . .	8.43	Tombstone Helios . . . . .	8.33
Progress . . . . .	8.50	Tordon 22K . . . . .	9.67
Proline . . . . .	9.83	Touchdown HiTech . . . . .	11.73
Propulse . . . . .	9.58	Touchdown Total . . . . .	11.13
Prosaro . . . . .	9.28	Triaxion . . . . .	11.20
Prowl 3.3 EC . . . . .	8.86	Trifluralin HF . . . . .	9.32
Prowl H <sub>2</sub> O . . . . .	9.81	Trilex 2000 . . . . .	9.00
Puma . . . . .	8.65	Twinline . . . . .	9.01
Pursuit . . . . .	9.20	Valid . . . . .	8.30
Pursuit Plus . . . . .	8.83	Verdict . . . . .	9.11
Quadris . . . . .	9.13	Warhawk . . . . .	9.00
Quilt . . . . .	8.53	Warrior II . . . . .	9.11
Quilt Xcel . . . . .	8.79	Water . . . . .	8.34
RT 3 . . . . .	11.32	Weather Gard Complete . . . . .	8.43
Radiate . . . . .	8.66	Weedmaster . . . . .	9.72
Ranman . . . . .	7.97	Whiteout . . . . .	9.18
Raptor . . . . .	8.75	Widematch . . . . .	8.69
Reaper . . . . .	8.01	Widow . . . . .	9.35
Reason . . . . .	9.3	Wolverine . . . . .	8.59
Resource . . . . .	8.10		
Rifle . . . . .	10.01		
Rifle Plus . . . . .	9.68		
Roundup PowerMAX . . . . .	11.31		
Roundup WeatherMAX . . . . .	11.32		
Salvo . . . . .	9.11		
Sanction . . . . .	12.6		
Scala SC . . . . .	8.9		
Select . . . . .	8.00		
Select MAX . . . . .	7.69		
Sequence . . . . .	10.24		

These weights could vary with temperature and lot. Check each bill of lading.



## MINIMUM STORAGE TEMPERATURES (DEGREES FAHRENHEIT)



ACA/ACA Plus .....	40	Curtail M .....	10
Activator 90.....	*	Dakota .....	10
Admire Pro.....	*	Dimethoate .....	40
Alachlor 4E .....	32	Discover EC/NG .....	*
Alanap .....	35	Dispatch .....	20
All Clear .....	*	Dual II MAGNUM .....	*
Allegiance .....	32	Durango DMA .....	*
Alion.....	*	Eptam 7E .....	-50
Amaze Gold .....	32	Eradicane 6.7E .....	50
Ambush .....	32	Evergol Energy .....	14
Amine 2,4-D .....	32	Extreme .....	*
Asana XL .....	*	E-Z Mix .....	0
Assure II .....	32	Fargo .....	32
Armezon .....	32	Fastac .....	32
Atrazine 4L/Aatrex 4L .....	*	Flame .....	*
Authority Assist .....	*	Flexstar .....	50
Awaken .....	40	Foliar Feed II .....	20
Axial XL .....	*	Folicur .....	*
Balance Flex .....	*	ForeFront .....	*
Balance Pro .....	*	ForeFront HL .....	*
Banvel/Rifle .....	*	Four Power Plus .....	10
Basagran .....	32	Forum .....	*
Basagran 5L .....	41	Franchise .....	32
Baythroid XL .....	*	Fultime NXT .....	50
Belt .....	*	Fusilade DX .....	*
Betamix .....	32	Fusion .....	32
Betanex .....	32	Gaucho 600 .....	*
Beyond .....	32	Gem 500 SC .....	14
Bicep II Mag/Bicep Lite II Mag .....	*	Goal 2XL .....	40
Blazer Ultra .....	32	Gramoxone SL .....	32
Bond .....	32	Grazon P+D .....	*
Bravo 720/ZN .....	32	GrazonNext HL .....	*
Bronate Advanced .....	32	Halex .....	*
Buctril/Broclean .....	3	Halex GT .....	*
Buctril AT/Brozine .....	3	Harness .....	*
Butyrac 200 .....	*	Harness Xtra .....	*
Cadet .....	*	Harness Xtra 5.6 .....	*
Callisto .....	-20	Headline .....	32
Capreno .....	14	Headline SC .....	*
Caramba .....	10	Headline AMP .....	*
Capture 2EC .....	40	Herbimax .....	*
Charter F <sup>2</sup> .....	32	Huskie .....	*
Choice Weather Master .....	*	Hyvar XL .....	0
Coragen .....	32	Imperium .....	-25
Corvus .....	*	Instinct .....	20
Cimarron Max .....	*	Intensity .....	32
Cinch ATZ or Cinch ATZ Lite .....	*	Intrepid 2F .....	32
Clarity .....	32	Iron Che./Seq. 5% .....	40
Cobalt .....	*	Keystone NXT .....	*
Cobalt Advanced .....	*	Keystone LA NXT .....	*
Cobra .....	32	Laddok .....	40
Command 3ME .....	-4	Ladius .....	*
Copper Che./Seq. 5% .....	40	Lannate LV .....	32
Corvus .....	*	Laredo EC/EW .....	32
Crop Oil Conc. ....	*	Leverage .....	*
Crossbow .....	10	Lexar .....	*
Crossbow L .....	10	Liberate .....	32
Curtail .....	40	Liberty 280 SL .....	*
		Liberty 280 / Rely .....	*

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See label for restrictions on different package sizes. Store at temperatures less than 100 degrees F.  
If it freezes then remix before using.

## MINIMUM STORAGE TEMPERATURES

### (DEGREES FAHRENHEIT)



LI 700.....	32	Ridomil Gold.....	40
Lorsban Advanced.....	*	Rifle Plus .....	0
Lumax.....	-10	Rodeo.....	10
Luna Experience.....	*	Roundup PowerMax.....	*
Luna Priviledge.....	*	Roundup WeatherMax.....	*
Luna Sensation.....	*	Saber .....	32
Luna Tranquility.....	*	Salvo.....	*
LV4 or LV6 (24-D).....	0	Select.....	32
Mad Dog/Mad Dog Plus .....	10	Sequence .....	*
Magnesium Che. 2-1/2%/4%.....	40	Sharpen.....	*
Makaze .....	10	Sniper .....	45
Makaze Yield Pro.....	10	Sonalan .....	40
Malathion 57EC .....	-10	Stamina .....	*
Manganese Che./Seq. 5%.....	40	Stamina F <sup>3</sup> Cereals.....	*
MCPA .....	25	Starane Flex.....	14
MCP Ester .....	32	Starane NXT.....	14
Mec Amine-D .....	32	Starane Ultra .....	10
Milestone .....	*	Stealth .....	40
Movento .....	*	Stellar .....	32
MSMA.....	32	Stinger .....	28
MSO .....	*	Stratego .....	*
Mustang Maxx .....	28	Stratego YLD .....	14
N-Serve 24 .....	28	Super Tin .....	0
Nortron SC.....	33	Supracide 2E .....	40
Oberon 4SC.....	*	SureStart II .....	*
OpTill PRO .....	*	Surflan 4AS .....	32
PastureALL.....	*	Surmount .....	32
PastureGard .....	28	Surpass NXT .....	*
PastureGard HL.....	28	Swagger .....	10
Phoenix.....	32	Sword .....	32
Plyac.....	32	Targa.....	*
Poast .....	0	Thistrol .....	32
Poncho Votivo.....	*	Tilt .....	0
Pounce/Permethrin .....	10	Tombstone .....	*
Pramitol 25E .....	32	Tordon RTU .....	0
Precise.....	*	Tordon 22K .....	*
Prefar.....	42	Touchdown Total/High Tech .....	*
Priaxor .....	32	Trekker Trax .....	40
Princep 4L .....	*	Trifluralin 40 .....	40
Prism .....	*	Trilex 2000 .....	*
Proaxis.....	32	Trimec .....	32
Progress .....	32	Tuff Trax .....	40
Proline .....	31	Twinline .....	32
Proline 480 SC .....	*	Unfoamer .....	32
Propulse .....	32	Unite .....	32
Prosaro .....	32	Valid .....	*
Prosaro 421 SC .....	*	Velpar .....	32
Prowl 3.3 EC.....	40	Verdict .....	*
Prowl H <sub>2</sub> O.....	*	Vydate L .....	32
Puma .....	32	Vydate CLV .....	32
Punch .....	*	Warhawk .....	20
Pursuit 2AS.....	40	Warrior II.....	32
Pursuit Plus .....	40	Weather Gard Complete .....	*
Quadris .....	*	Widematch .....	20
Quilt .....	32	Wolverine .....	*
RT 3 .....	*	Zampro .....	*
Rage D-Tech.....	0	Zinc 9% + 10% .....	40
Raptor.....	32		
Resource .....	*		
Rezult .....	32		

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### **Measure of Length (Linear Measure)**

1 inch = 2.54 cm

1 foot = 30.48 cm

1 yard = .914 meters

1 mile = 1.609 kilometers

5½ yards = 16½ feet = 1 rod

5,280 feet = 1,760 yards = 320 rods = 1 mile

### **Measure of Surface (area)**

9 square feet = 1 square yard (sq. yd)

43,560 square feet = 1 acre (A)

### **Suveyor's Measure**

4 rods = 1 chain

80 chains = 1 mile

1 Gunters chain = 66 feet (ft.)

### **Liquid Measure**

2 cups = 1 pint (pt.)

16 fluid ounces = 1 pint (pt.)

2 pints = 1 quart (qt.)

4 quarts = 1 gallon (gal.)

1 teaspoon = .17 fluid ounces ( $\frac{1}{6}$  oz.)

3 teaspoons (level) = 1 tablespoon ( $\frac{1}{2}$  oz.)

2 tablespoons = 1 fluid ounce (fl. oz.)

1 cup (liquid) = 16 tablespoons (8 oz.)

1 ounce = 29.573 ml

1 quart = .946 liters

1 gallon = 3.785 liters

1 cc = 1 ml

1 gallon = 128 fluid ounces

100 gals./acre = 2.5 gals./1000 sq. ft.

Weight of Water/gal. = 8.34 lbs.

1 cubic foot of Water = 7.48 gallons

### **Dry Measure**

1 pound = 16 oz. = 454 grams

1 ounce = 28.25 grams

1 Metric ton = 1000 kg = 2,205 lbs.

## **COMPUTING PLANT POPULATIONS AND YIELDS**

Row Width	Length of Row In 1/1000 Acre
40 inches	13 ft., 1 in.
38 inches	13 ft., 9 in.
36 inches	14 ft., 6 in.
30 inches	17 ft., 5 in.
20 inches	26 ft., 2 in.
15 inches	34 ft., 10 in.



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## NOTES