

# Weed Management in Corn

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## General Information

**Weed management is** an integral part of corn production. Weed management systems should prevent weed interference, be economical and sustainable, reduce the weed seed bank in soil, prevent weed resistance and neither injure corn plants or reduce yield. Weeds compete with corn for moisture, nutrients, and sunlight. To be successful, weed management systems require advance planning and timely execution. Proper weed identification is essential to selecting the correct herbicide. Any delay in an application may mean reduced control, higher herbicide use rates, greater herbicide costs, and reduced yields.

A successful weed management plan will use multiple methods to keep weed populations low. Tillage and seedbed preparation should eliminate all emerged weeds prior to planting. Components of a weed management system can include many of the following: **1) Early preplant burndown** which may contain an herbicide with residual activity; **2) Burndown application at planting** which may include a residual herbicide; **3) Postemergence applications** with or without a residual herbicide. The use of mechanical cultivation with rotary hoes, rolling cultivators or sweeps may reduce the need for an herbicide application early in the growing season. Use of specific herbicides depends on the weed spectrum of your field, economic considerations and application system. Consider your situation and tailor a weed control program to your needs. The following sections will guide you in the decision making process.

## Atrazine and Water Quality

Atrazine users are strongly encouraged to follow label guidelines, discussed below, to share in the responsibility of preserving the future use of atrazine. These restrictions apply to all formulations of atrazine, and all package mix products which contain atrazine.

## Mixing, Loading and Application.

**Atrazine may not be mixed/loaded or used within 50 feet of all wells**, including abandoned wells, drainage wells and sink holes. **Atrazine may not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. Atrazine may not be applied aerially or by ground within 66 feet of the points where field surface runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs.** If atrazine is applied to highly erodible land, the 66-foot buffer or setback from runoff entry points must be planted to corn, seeded with grass, or another suitable crop.

## Application Rates

**Soil applications.** Highly Erodible Soils (as defined by NRCS). If conservation tillage is practiced (at least 30 percent residue coverage at planting), apply a maximum of 2 lbs. a.i./acre. If residue coverage is less than 30 percent, apply a maximum of 1.6 lbs. a.i./acre. Soils Not Highly Erodible - Apply a maximum of 2 lbs. a.i./acre.

**Postemergence applications.** If atrazine was not applied prior to corn emergence, applications of up to 2 lbs. a.i./acre are permitted. If a postemergence atrazine application is required following a preemergence atrazine application do not exceed 2.5 lbs. a.i./acre/calendar year. Postemergence applications to corn must be made before corn exceeds 12 inches in height.

## Weed Management Where Atrazine Cannot Be Used

Apply a preemergence grass herbicide and follow with postemergence herbicides. – Apply Dual Magnum, Frontier, Outlook, or Prowl H2O (if soybean replanting flexibility is needed) immediately following planting. Select and make timely applications of appropriate broadleaf herbicides for control of cocklebur, annual morningglory, and Palmer amaranth. Follow-up applications may be needed due to lack of residual control.

Plant a Clearfield™ hybrid, apply a preemergence grass herbicide, and follow with Lightning or Pursuit postemergence. - Apply Dual Magnum, Frontier, Outlook, or Prowl H2O (if soybean replanting flexibility is needed) immediately following planting. Pursuit may be applied preemergence, but overall weed control will be better if applied early postemergence. Pursuit is also registered on soybeans and would provide soybean replant flexibility. Lightning has a broader weed spectrum than Pursuit, and may be applied postemergence to corn up to 20 inches tall or the V6 stage. Lightning has a 9 month soybean rotation restriction. Follow-up herbicide applications may be needed for late emerging cocklebur.

Plant a Roundup Ready™ or LibertyLink™ hybrid, apply a preemergence grass herbicide, and follow with glyphosate (Roundup) or glufosinate (Ignite) postemergence. - Apply Dual Magnum, Frontier, Outlook, or Prowl (if soybean replanting flexibility is needed) immediately following planting. Glyphosate may be applied overtop on Roundup Ready corn hybrids from emergence through the V8 stage (8 leaves with collars) or until corn is 30 inches tall. Ignite 280SL may be applied overtop on LibertyLink corn hybrids from emergence through the V5 growth stage (5 leaves with collars). In fields where glyphosate-resistant Palmer amaranth is a concern, Ignite 280SL will control these biotypes. See respective product labels for additional instructions.

## Roundup Ready™ Corn

Roundup Ready™ (RR) corn continues to be adopted by many South Carolina growers. The following topics should be considered when planning to grow a RR Corn hybrid.

Use a soil-applied herbicide. Do not delay making applications with hopes of a single application being sufficient for season-long weed control. Glyphosate will generally need to be applied 2-4 weeks after weed emergence to prevent early-season yield loss from competition. Florida pusley, dayflower, nutsedge, and morningglories are less susceptible to glyphosate and generally require multiple applications or tank mixing with other herbicides for effective control. Use of a soil-applied herbicide will provide greater flexibility in timing of glyphosate applications.

Use crop rotation or at least rotation of herbicide systems to reduce the potential for development of glyphosate resistance. Roundup Ready™ technology should be used only as a single weed management tool in a toolbox containing many options. Continued use of glyphosate in RR crops will increase the likelihood of selecting for glyphosate resistant weeds (i.e., Palmer amaranth is now resistant to 3 herbicide modes of actions: ALS-inhibitors, dinitroanilines, and glyphosate).

Glyphosate is formulated as a salt, thus making the product highly water-soluble. High concentrations of sodium (Na) salts are common in some South Carolina water sources and may reduce weed control by binding to glyphosate. The addition of 8.5 lbs of ammonium sulfate (AMS) per 100 gallons of water will help overcome this antagonism. When the spray volume is reduced from 20 to 10 gallons/acre, the number of salt molecules that could potentially interact with glyphosate is reduced by 50%. In addition, spray droplet size will be reduced as spray volume is lowered, concentrating glyphosate molecules within the droplet, facilitating glyphosate movement into the plant via diffusion.

## Glyphosate-Resistant Palmer Amaranth Management Programs - Corn

Palmer amaranth (*Amaranthus palmeri* S. Wats.) is a dioecious, erect summer annual that may reach 6 1/2 feet in height. Leaves are alternate and occur on relatively long petioles that are longer than the leaves. Small, green, inconspicuous flowers are produced in terminal panicles that are from 1/2 to 1 1/2 feet in length. Smaller lateral inflorescences also occur between the stem and the leaf petioles. Male and female flowers occur on separate plants.

Palmer amaranth populations exist in South Carolina that are resistant to acetolactate synthase (ALS) inhibiting herbicides and dinitroaniline (yellow) herbicides. Recently, glyphosate-resistant Palmer amaranth populations have been confirmed in South Carolina.

The following table is designed to aid producers in managing and/or preventing glyphosate-resistant Palmer amaranth populations in corn.

Seed Program	Herbicide Program		
	PRE1	POST2	POST-DIRECTED3
Conventional	atrazine, Harness, Bicep II Magnum, Cinch ATZ, Guardsman, Lexar	Banvel, Clarity, Distinct, 2,4-D, Impact, Laudis, Callisto	2,4-D, Evik, Lorox, Aim
	No PRE applied	Buctril + atrazine, Laudis + atrazine, Callisto + atrazine, Impact + atrazine Marksman	
Clearfield <sup>TM</sup>	atrazine, Bicep II Magnum, Harness, Cinch ATZ, Guardsman, Lexar	Lightning + Status Lightning + 2,4-D Lightning + Laudis or Impact	2,4-D, Evik, Lorox, Aim
	No PRE applied	Lightning + Status Lightning + 2,4-D Lightning + atrazine	
Liberty-Link <sup>TM</sup>	atrazine, Bicep II Magnum, Harness, Cinch ATZ, Guardsman, Lexar	Ignite + Banvel or Clarity, Ignite + Status Ignite + 2,4-D	2,4-D, Evik, Lorox, Aim
	No PRE applied	Ignite + atrazine + Callisto Ignite + Status Ignite + atrazine + Laudis Ignite + atrazine + Impact	
Roundup Ready <sup>TM</sup>	atrazine, Bicep II Magnum, Harness, Cinch ATZ, Guardsman, Lexar	glyphosate + atrazine glyphosate + Banvel , Clarity, Distinct, Status glyphosate + 2,4-D	2,4-D, Evik, Lorox, Aim
	No PRE applied	glyphosate + s-metolachlor + atrazine glyphosate + atrazine + Laudis glyphosate + s-metolachlor + Callisto glyphosate + atrazine + Impact	

1 PRE = Preemergence. Apply to soil surface after all tillage and planting has occurred.

2 POST = Consult individual product labels for corn height restrictions, e.g., atrazine applied POST limited to corn 12 " or less.

3Consult individual product label for corn height restrictions.

## Herbicides for Weed Management in Corn

### Preplant/Burndown Herbicides for Weed Management in Corn

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Clarity 4 S (dicamba)  Banvel 4 S	8.0-16 oz	0.25-0.5 lb	Apply any time prior to planting corn. Use 16 oz/A rate on medium to fine texture soils with >2.5% organic matter. Use 8 oz/A rate on coarse textured soils with less than 2.5% organic matter. MOA=4
Direx 4 L (diuron)	0.5-0.8 qt	0.5-0.8 lb	Apply anytime from fall through spring prior to planting corn. Heavy textured soils will require higher application rate. DIREX 4L may be tank mixed with other burndown herbicides, consult tank mix partner label for more details. Plant corn at least 1.5" deep and make sure seed slot is closed. Do not replant treated areas to crops other than corn or cotton within 8 months following treatment. Do not apply more than 1.6 qt/A of DIREX 4L per year. MOA=7
ET 0.208 EC (pyraflufen ethyl)	0.5-2.0 oz	0.0008-0.003 lb	Field corn may be planted any time after ET application. For best result, apply ET to broadleaf weeds less than 4" tall or rosettes less than 3" in diameter. Ground application requires minimum of 10 gallons/A. Do not allow livestock to graze in treated areas. MOA=14
Ignite 280 S (glufosinate)	29-36 oz	0.53-0.66 lb	Thorough spray coverage is essential for optimum performance. Ground application requires a minimum of 15 gallons of water/acre. Dense weed canopies require 20 to 40 gallons per acre. See label for further application instructions and tank-mix partners. MOA=10
Glyphosate acid equivalent (ae)  3 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.5 lb ae/gal	32-160 oz 24-120 oz 23-115 oz 22-106 oz	0.75-3.8 lb ae	Apply in 10-20 gal of water 2 to 4 weeks prior to your anticipated planting date to control existing groundcover. In most fields, a follow-up application of GRAMOXONE will be needed at planting. Consult product label to determine if a non-ionic surfactant is needed. MOA=9
2,4-D (various)	1.0-2.0 pt	0.475 lb	Apply 7 to 14 days prior to planting field corn. Do not use on a light, sandy soil, or where soil moisture is limiting weed growth. Very effective for cutleaf eveningprimrose control. Can be tank-mixed with other burndown herbicides (see label). MOA=4

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

## Preplant/Burndown Herbicides for Weed Management in Corn (cont.)

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Gramoxone Inteon 2 E (paraquat)	2.0-4.0 pt	0.5-1.0 lb	GRAMOXONE is a RESTRICTED USE PESTICIDE. Apply at planting as a follow-up to an earlier application of GLYPHOSATE. Better control of chickweed, henbit, deadnettle and cutleaf eveningprimrose than GLYPHOSATE. Add non-ionic surfactant at 1 qt/100 gal of spray mix. MOA=22
Gramoxone Max/Firestorm 3 S	1.5-2.0 pt		
Valor SX 51 WDG (flumioxazin)	2 oz	0.064 lb	Apply 14 to 30 days prior to planting field corn. Do not apply more than 3 oz/A of VALOR SX during a single growing season. Do not irrigate when corn is emerging to the 2-leaf stage. Do not use on popcorn, sweet corn, or corn grown for seed. Can be tank-mixed with other burndown herbicides (see label). MOA=14

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

## Weed and Cover Crop Response to Burndown/Preplant Herbicides<sup>1</sup>

	ET	Glyphosate	Glyphosate + 2,4-D	Glyphosate + Clarity	Glyphosate + Valor SX	Glyphosate + Atrazine	Glyphosate + Direx	Ignite	Ignite + 2,4-D	Ignite + Clarity	Ignite + Valor SX	Ignite + Atrazine	Ignite + Direx	Gramoxone	Gramoxone + 2,4-D	Gramoxone + Clarity	Gramoxone + Valor SX	Gramoxone + Diirex
bluegrass, annual	7	5	5	5	9	9	9	3	3	7	7	8	9	7	7	9	9	9
chickweed, common	7	5	7	8	9	9	8	9	9	9	8	8	8	9	9	8	9	9
dandelion	3	3	9	9	7	8	8	6	8	9	5	5	4	2	9	8	3	8
dock, curly	3	4	7	8	7	9	5	7	8	9	5	5	4	5	6	8	3	5
eveningprimrose, cutleaf	8	4	8	8	7	9	8	7	8	9	8	8	7	5	7	8	9	8
geranium, Carolina	8	1	9	9	9	9	8	8	9	9	8	7	8	8	9	8	9	9
henbit/deadnettle	9	5	7	8	9	9	9	7	8	8	8	9	8	7	8	9	9	8
horseweed	7	9	8	9	8	9	9	8	7	8	7	8	8	5	8	9	8	8
lambsquarters, common	7	8	9	9	8	9	8	6	7	9	7	8	8	6	8	8	8	9
peanut, volunteer	5	5	8	9	5	---	---	9	9	9	8	8	---	2	8	9	5	---
radish, wild	7	7	8	8	8	8	8	8	8	8	8	8	8	7	8	8	8	8
ryegrass, Italian	5	7	5	5	7	8	6	3	3	3	5	8	6	6	6	6	6	7
vetch	8	5	9	9	6	9	7	8	9	9	7	8	8	7	8	8	8	7
wheat	5	9	9	9	9	9	7	5	5	5	9	7	5	5	5	5	7	7

<sup>1</sup> Key to Response Ratings: 0 = no control; 10 = 100% control; --- = Insufficient Data.

## Weed Response to Soil Applied Herbicides for Corn Weed Management<sup>1</sup>

	PREEMERGENCE													
	Atrazine	Acetochlor	Alachlor	Axiom	Bicep II	Magnum	Bullet/Lariat	Frontier/Outlook	Harness Xtra	Lumax	S-Metolachlor	Princep	Prowl H2O	Python
<b>Broadleaves</b>														
amaranth, Palmer <sup>2</sup>	9	8*	9*	8	9	9	9	9	9	8*	9	8	9	6
cocklebur, common	9	3	3	3	9	9	3	9	7	3	8	1	7	7
croton, tropic	8	3	3	3	8	8	3	9	7	3	8	1	4	---
dayflower/spiderwort	---	---	8	---	8	8	8	8	---	8	8	1	---	---
jimsonweed	9	3	4	3	9	9	4	9	8	4	9	1	8	7
lambsquarters, common	9	7	7	8	9	9	7	9	9	7	9	9	9	8
morningglory, annual	8	4	3	3	8	8	4	8	6	2	8	2	7	5
pigweed spp.	9	9	9	8	9	9	9	9	9	9	9	9	9	8
poinsettia, wild	8	2	2	2	8	8	2	8	---	2	7	1	9	---
pusley, Florida	9	8	8	7	9	9	8	9	---	8	8	9	9	---
ragweed, common	9	4	4	4	9	9	3	9	8	2	9	1	8	6
senna, coffee	5	3	3	3	5	5	3	5	---	3	---	1	7	---
sicklepod	8	2	3	2	8	8	2	8	5	2	8	1	7	6
sida, prickly	9	7	7	7	9	9	7	9	6	7	9	1	9	---
smartweed, Pennsylvania	8	4	3	4	9	8	3	9	9	3	---	1	---	7
starbur, Bristly	8	4	3	5	8	8	3	8	---	3	8	1	7	---
velvetleaf	6	3	4	4	6	8	4	6	9	2	---	1	---	5
<b>Grasses</b>														
bermudagrass	0	0	0	0	0	0	0	0	0	0	0	0	0	0
broadleaf signalgrass	4	8	8	8	8	8	8	8	7	8	5	7	3	8
crabgrass, large	7	9	9	8	9	9	9	9	8	9	7	8	3	5
crowfootgrass	7	9	9	7	9	9	9	9	---	9	7	9	3	---
goosegrass	7	9	9	8	9	9	9	9	---	9	7	9	3	---
johnsongrass seedling	1	3	2	3	8	2	2	8	5	5	3	9	3	---
johnsongrass rhizome	0	0	0	0	1	2	0	2	0	0	0	2	0	---
panicum, fall	4	9	9	8	9	9	8	9	8	9	7	6	3	5
panicum, Texas	2	2	2	2	2	2	2	2	---	2	3	8	3	---
ryegrass, annual	---	---	---	---	---	---	---	---	---	---	9	---	---	---
sandbur	---	7	7	7	8	7	7	8	---	7	8	9	3	---
<b>Sedges</b>														
purple nutsedge	4	5	5	3	6	5	5	6	5	6	3	1	3	---
yellow nutsedge	4	7	7	3	7	7	7	7	7	7	3	1	3	---

<sup>1</sup> Key to Response Ratings: 0 = no control; 10 = 100% control; --- = Insufficient Data.

<sup>2</sup> Will not control biotypes resistant to this class of chemistry.

## Preemergence (PRE) Herbicides for Weed Management in Corn

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Aatrex 4 WDL (atrazine)	1.6-2.0 qt	1.6-2.0 lb	ATRAZINE is a RESTRICTED USE PESTICIDE. Use to control most broadleaf weeds and a few grasses. Tank mix with a grass herbicide for broader spectrum control. MOA=5
Acetochlor			HARNESS is a RESTRICTED USE PESTICIDE. Controls most annual grasses (except Texas Panicum) and some small-seeded broadleaf weeds. ACETOCHLOR can be tank-mixed with ATRAZINE for improved weed control. Available in several pre-mixes with ATRAZINE (DEGREE XTRA, HARNESS XTRA, FULTIME). MOA=15
Harness 7 E	1.5-3.0 pt	1.3-2.6 lb	
Harness 20 G	6.0-10.0 lb	1.2-2.0 lb	
Surpass 6.4 EC	2.0 pt	1.6 lb	
TopNotch 3.2 ME	2.0-3.0 qt	1.6-2.4 lb	
Degree 3.8 ME	2.25-4.25 pt	1.06-2.02 lb	
Alachlor (Micro-Tech 4 ME)	2.0-2.75 qt	2.0-2.75 lb	MICRO-TECH is a RESTRICTED USE PESTICIDE. Controls most annual grasses (except Texas Panicum) and some broadleaf weeds. ALACHLOR may be tank mixed with ATRAZINE or SIMAZINE. MOA=15
Axiom 68 DF  (flufenacet + metribuzin)	13-22 oz	0.55-0.94 lb	Provides annual grass and small-seeded broadleaf control similar to ACETOCHLOR, ALACHLOR, and METOLACHLOR. May be tank-mixed with ATRAZINE for improved control of broadleaf weeds. Corn and soybeans can be planted any time after an application of AXIOM. MOA=15+5
Dimethenamid-p (Outlook 6 EC)	10-16 oz	0.47-0.75 lb	Controls most annual grasses (except Texas Panicum) and some broadleaf weeds. DIMETHENAMID-P may be tank-mixed with ATRAZINE or SIMAZINE. MOA=15
Metolachlor			Controls most annual grasses and some broadleaf weeds. Fair to good control of yellow nutsedge. METOLACHLOR and S-METOLACHLOR may be tank mixed with ATRAZINE. Generic formulations of METOLACHLOR are also available. DUAL II and DUAL II MAGNUM contain a safener that helps reduce the possibility of injury from S-METOLACHLOR applications. MOA=15
Dual 8E/II	1.5-2.0 pt	1.5-2.0 lb	
Dual 25G/II G Mag.	6.0-8.0 lb		
S-metolachlor			
Dual Magnum 7.62 EC	1.0-1.33 pt	0.96-1.27 lb	
Dual II Magnum 7.64 EC			
Cinch 7.64 EC			

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Preemergence (PRE) Herbicides for Weed Management in Corn (cont)**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Bicep II Magnum 5.5 SC (s-metolachlor + atrazine)	1.3-2.1 qt 0.8-1.33 pt + 1.0-1.63 qt	0.78-1.27 lb + 1.0-1.63 lb	BICEP II MAGNUM is a RESTRICTED USE PESTICIDE. Application rate is based on soil type: Sandy soils = 1.3-1.6 qt/A, Medium textured soils = 1.6-2.1 qt/A. Use higher rate for each soil type if applying in a reduced tillage system. Available as a pre mix with glyphosate (EXPERT). MOA=15+5
Bullet 4 ME Lariat 4 EC  (alachlor + atrazine)	2.5-3.75 qt  1.56-2.34 qt + 0.94-1.41 qt	1.56-2.34 lb + 0.94-1.41 lb	BULLET and LARIAT are RESTRICTED USE PESTICIDES. Application rate is based on soil type and organic matter: Sandy soils = 2.5-3.0 qt/A, medium textured soils = 3.0-3.75 qt/A. Use higher rate for each soil type if applying in a reduced tillage system. MOA=15+5
Cinch ATZ 5.5 SC  (s-metolachlor + atrazine)	2.6-3.2 pt 0.8-1.0 pt + 2.0-2.2 pt	0.78-0.96 lb + 1.0-1.24 lb	CINCH ATZ is a RESTRICTED USE PESTICIDE. Application rate is based on soil type: Sandy soils = 2.6 pt/A, medium textured soils = 3.2 pt/A. MOA=15+5
Degree Xtra 4.04SC (acetochlor + atrazine)	2.9-3.7 qt 4.1-5.3 pt + 0.9-1.24 qt	1.94-2.5 lb + 0.9-1.24 lb	DEGREE XTRA is a RESTRICTED USE PESTICIDE. Application rate is based on soil type: Sandy soils = 2.9 qt/A, Medium textured soils = 2.9-3.74 qt/A. Use higher rate for each soil type if applying in a reduced tillage system. MOA=15+5
FulTime 4 SC  (acetochlor + atrazine)	2.5-3.3 qt 1.9-2.25 qt + 1.0-1.12 qt	1.52-1.8 lb + 1.0-1.12 lb	FULTIME is a RESTRICTED USE PESTICIDE. Application rate is based on soil type: Sandy soils = 2.5-3.0 qt/A, Medium textured soils = 2.7-3.3 qt/A. Use higher rate for each soil type if applying in a reduced tillage system. MOA=15+5
Harness Xtra 5.6 L  (acetochlor + atrazine)	1.4-2.6 qt 1.25-1.5 pt + 1.4-1.9 qt	1.09-1.31 lb + 1.4-1.9 lb	HARNESS XTRA is a RESTRICTED USE PESTICIDE. Application rate is based on soil type: Sandy soils = 1.4-1.7 qt/A, Medium textured soils = 1.7-2.6 qt/A. Use higher rate for each soil type if applying in a reduced tillage system. MOA=15+5
Lumax 3.95 EC  (s-metolachlor + atrazine + mesotrione)	2.5 qt 1.6 pt 1.25 pt 0.58 oz	1.68 lb 0.625 lb 0.018 lb	LUMAX is a RESTRICTED USE PESTICIDE. Apply LUMAX preemergence after planting or as a preplant treatment 14 days before planting. If applied as a preplant burndown, include GLYPHOSATE for broader spectrum weed control. Up to 0.82 lb of ATRAZINE may be applied postemergence. MOA=15+5+28

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Preemergence (PRE) Herbicides for Weed Management in Corn (cont)**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Princep 4 WDL (simazine)	2.0-2.5 qt	2.0-2.5 lb	PRINCEP is a RESTRICTED USE PESTICIDE. Similar to ATRAZINE but requires more rainfall for activation and is generally less effective in control of certain broadleaf weeds. Good control of crabgrass and fall panicum. SIMAZINE may be tank mixed with ATRAZINE, ALACHLOR, or METOLACHLOR. MOA=5
Prowl H2O 3.8 CS (pendimethalin)	1.55-3.13 pt	0.74-1.49 lb	Do not apply preplant incorporated or serious corn injury can result. Plant corn at least 1.5 in. deep. Corn seed must be completely covered with soil. Apply after planting before emergence of weeds. Use the higher rates on fine-textured soils. In case of stand failure, corn seed should be replanted below the herbicide treated zone. Add ATRAZINE at 1.0 to 2.0 qt/A for control of broadleaf weeds. MOA=3+5
Prowl 3.3 EC	1.8-3.6 pt	0.74-1.49 lb	
+ atrazine 4 WDL	+ 1.0-2.0 qt	+ 1.0-2.0 lb	
Python 80 WDG (flumetsulam)	1.0 oz	0.05 lb	For areas where ATRAZINE cannot be used or in fields subject to flooding where soybeans may be re-planted. Plant corn at least 1.5" deep. Mix with a preemergence grass herbicide and apply on the surface. Good to excellent control of Palmer amaranth, sicklepod, and cocklebur. Do not apply where COUNTER or THIMET insecticides are to be used. Other corn insecticides should be applied in a T-band to avoid injury. Do not plant cotton within 18 months of application. MOA=2
Resolve 25 DF (rimsulfuron)	0.5-2.0 oz	0.008-0.031 lb	Control most annual grasses and broadleaves including broadleaf signalgrass. For control of emerged weeds at application, add NIS at 1 qt/100 gal or COC at 1 gal/100 gal of spray solution plus 2 qt/A of UAN (28-32% N) or 2 lb/A of spray grade AMS. MOA=2

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.



## Weed Response to POST Applied Herbicides for Corn Weed Management<sup>1</sup>

	POSTEMERGENCE															
	Atrazine	Accent/NIC-IT	Aim	Basagran	Beacon	Banvel/Clarity	Buctril	Callisto	Distinct/Status	Expert	Glyphosate	Halex GT	Ignite	Impact	Laudis	Lightning
<b>Broadleaves</b>																
amaranth, Palmer <sup>2</sup>	9	8*	7	3	9*	9	7	8	9	9	9*	9	7	8	8	8*
anoda, spurred	9	6	2	1	5	9	---	7	8	9	8	8	7	---	---	6
cocklebur, common	9	6	7	9	8	9	9	9	9	9	9	9	9	9	9	8
croton, tropic	8	---	---	2	---	8	---	3	8	8	8	8	8	---	---	---
jimsonweed	9	7	8	9	9	9	7	8	9	9	8	8	8	8	8	---
lambsquarters, common	9	5	8	4	2	9	9	8	9	9	8	8	8	8	8	7
morningglory spp.	8	6	7	7	7	9	7	7	8	8	7	7	8	7	7	8
pigweed spp.	9	8	7	4	8	9	7	8	9	9	9	9	8	8	8	9
pusley, Florida	8	6	---	3	8	8	4	---	8	8	6	6	5	---	---	7
ragweed, common	9	2	6	7	---	9	9	5	9	9	8	8	9	5	5	8
senna, coffee	6	6	1	2	6	9	5	5	8	8	8	8	7	---	---	---
sicklepod	9	4	1	0	8	9	3	3	8	9	8	8	7	3	3	7
sida, prickly	9	2	6	8	---	9	4	3	8	9	8	8	8	3	3	---
smartweed, Pennsylvania	8	6	6	8	8	9	9	8	8	8	8	8	9	8	8	8
starbur, bristly	9	---	---	9	---	9	5	9	8	9	8	9	7	---	---	---
velvetleaf	7	5	5	8	7	8	8	8	8	7	7	8	8	8	8	8
vol. peanut	7	7	2	0	7	7	2	2	8	7	7	7	9	---	---	4
vol. RR soybean	9	7	2	0	8	9	5	---	8	9	0	---	7	---	---	4
<b>Grasses</b>																
bermudagrass	0	0	0	0	0	0	0	0	0	7	7	7	3	0	0	0
broadleaf signalgrass	5	8	0	0	2	0	0	2	1	8	8	8	7	2	2	9
crabgrass, large	7	5	0	0	2	0	0	2	3	9	9	9	7	2	2	8
crowfootgrass	7	9	0	0	---	0	0	2	3	9	9	9	7	2	2	8
goosegrass	7	9	0	0	---	0	0	2	3	9	9	9	7	2	2	9
johnsongrass seedling	5	9	0	0	9	0	0	3	5	9	9	9	8	3	3	8
johnsongrass rhizome	1	8	0	0	7	0	0	3	2	9	9	9	5	3	3	7
sandbur	5	9	0	0	---	0	0	3	0	8	8	8	7	3	3	---
panicum, fall	7	7	0	0	7	0	0	3	5	9	9	9	7	3	3	9
panicum, Texas	5	8	0	0	4	0	0	2	2	9	9	9	5	2	2	6
<b>Sedges</b>																
purple nutsedge	6	5	0	0	---	0	0	5	0	6	5	5	3	3	3	5
yellow nutsedge	6	5	0	7	---	0	0	3	0	6	6	5	3	3	3	5

<sup>1</sup> Key to Response Ratings: 0 = no control; 10 = 100% control; --- = Insufficient Data.

<sup>2</sup> Will not control biotypes resistant to this class of chemistry

### Weed Response to POST Applied Herbicides for Corn Weed Management (cont)1

	POSTEMERGENCE												POST-DIRECTED				
	Marksman	Option	Permit	Prowl H2O	Pursuit	Resolve	Resolve Q	Sequence	Steadfast	Steadfast ATZ	Stout	2,4-D	Aim	Evik	Linex/Lorox	Gramoxone	2,4-D
<b>Broadleaves</b>																	
amaranth, Palmer <sup>2</sup>	8	5*	7*	0	8*	4*	4*	9*	8*	9	6*	9	7	9	8	8	9
anoda, spurred	8	---	---	0	---	---	---	8	6	9	---	7	2	7	8	8	7
cocklebur, common	9	7	9	0	9	4	4	9	6	9	---	9	7	7	9	8	9
croton, tropic	8	---	---	0	4	---	---	8	---	8	---	8	---	8	8	8	8
jimsonweed	9	7	---	0	4	3	3	8	7	9	7	8	8	9	9	8	8
lambsquarters, common	9	7	4	0	2	4	4	8	5	9	4	9	8	9	9	7	9
morningglory spp.	9	5	4	0	6	3	3	7	6	7	3	8	8	8	8	7	8
pigweed spp.	9	7	8	0	8	4	4	9	9	9	6	9	9	9	8	8	9
pusley, Florida	8	---	---	8	4	---	---	6	6	8	---	8	---	9	8	7	8
ragweed, common	9	7	8	0	3	3	3	8	6	9	---	9	---	9	9	8	9
senna, coffee	8	---	---	0	---	---	---	8	6	6	---	8	2	8	8	7	8
sicklepod	7	5	2	0	4	---	---	8	4	9	---	9	2	9	9	8	9
sida, prickly	9	---	7	0	6	2	2	8	2	8	---	8	---	9	8	7	8
smartweed, Pennsylvania	9	4	7	0	9	2	2	8	6	8	7	7	7	---	---	6	7
starbur, bristly	8	---	---	0	3	---	---	8	---	9	---	8	---	9	8	8	8
velvetleaf	9	7	8	0	---	4	4	7	5	7	8	8	9	---	---	7	8
vol. peanut	9	---	0	0	0	---	---	7	7	7	---	5	2	8	7	3	5
vol. RR soybean	9	---	---	0	0	---	---	0	7	9	---	8	2	8	8	5	8
<b>Grasses</b>																	
bermudagrass	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	4	0
broadleaf signalgrass	0	7	2	8	4	4	4	8	8	8	7	0	0	9	8	8	0
crabgrass, large	0	6	2	8	5	3	3	9	6	6	2	0	0	9	8	8	0
crowfootgrass	0	5	3	8	5	2	2	9	9	8	2	0	0	9	9	8	0
goosegrass	0	5	3	8	5	3	3	9	9	8	2	0	0	9	9	8	0
johnsongrass seedling	0	9	3	7	4	3	3	9	9	9	2	0	0	9	9	8	0
johnsongrass rhizome	0	7	0	0	0	0	0	9	8	8	2	0	0	0	0	0	0
sandbur	0	5	3	5	---	4	4	8	9	9	6	0	0	9	9	8	0
panicum, fall	0	7	3	8	5	7	7	9	7	7	7	0	0	9	9	8	0
panicum, Texas	0	5	3	5	4	4	4	9	9	9	7	0	0	8	8	9	0
<b>Sedges</b>																	
purple nutsedge	5	4	7	0	7	3	3	5	6	6	0	0	0	8	7	6	0
yellow nutsedge	5	4	8	0	5	3	3	6	6	6	0	0	0	8	7	6	0

1 Key to Response Ratings: 0 = no control; 10 = 100% control; --- = Insufficient Data.

2 Will not control biotypes resistant to this class of chemistry

## Postemergence (POST) Herbicides for Weed Management in Corn.

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Accent 75 DF (nicosulfuron)	0.67 oz	0.031 lb	Apply overtop or with drop nozzles to control rhizome johnsongrass 8 to 18" tall. ACCENT or NIC-IT may be applied overtop corn up to 20" tall (V5), whichever is most restrictive. Add NIS at 1 qt/100 gal or COC at 1 gal/100 gal of spray mix plus 2 qt/A of UAN or 2 lb/A of AMS. Do not apply ACCENT or NIC-IT to corn previously treated with COUNTER 15G, or COUNTER 20CR (in-furrow) unless hybrid is IR (imidazolinone resistant). Injury may occur when ACCENT or NIC-IT is applied to corn previously treated with soil-applied THIMET, LORSBAN or COUNTER 20CR T-banded. Note: In fields heavily infested with johnsongrass, apply only to virus tolerant hybrids. Do not use on sweet corn. MOA=2
NIC-IT 2 EC	2.0 oz		
Aim 2 EC (carfentrazone)	0.5-1.0 fl oz	0.008-0.016 lb	Apply broadcast to corn from emergence until V8 growth stage. Excellent control of small sicklepod, glyphosate-resistant Palmer amaranth, and morningglory. Add a COC (1-2 gal/100 gals), NIS (1 qt/100 gals), or methylated seed oil (1-2 gal/100 gals). May be tank mixed with glyphosate for broader spectrum control in Roundup Ready corn. MOA=14
Aim 1.9 EW			
Aatrex 4 WDL (atrazine)	2.0 qt	2.0 lb	If ATRAZINE was not applied prior to corn emergence, apply a maximum of 2 lbs a.i./A. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 lbs a.i./A/calendar year. Applications to corn must be made before corn exceeds 12 " tall. Always add crop oil concentrate at 1 gal per 100 gal of spray mix. MOA=5
Banvel 4 S (dicamba)	0.5-1.0 pt	0.25-0.5 lb	Apply at the 1 pt rate overtop corn up to 8" tall to give early control of vines and broadleaf weeds. The 0.5 pt rate may be applied overtop corn up to 36" tall. Do not apply under conditions which favor drift onto nearby crops. MOA=4
or Clarity 4L			
Basagran 4 S (bentazon)	1.5-2.0 pt	0.75-1.0 lb	Controls Palmer amaranth, cocklebur, bristly starbur, annual morningglory, and prickly sida. Treat when broadleaf weeds are small and actively growing. Adjust rate according to weed size as noted on label. Add crop oil concentrate at 1 qt/A. MOA=6

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Rate/Acre Broadcast			
Herbicide	Formulation	Active Ingredient	Remarks/Precautions <sup>1</sup>
Beacon 75 DF (primisulfuron)	0.76 oz	0.036 lb	Apply overtop, directed or semi-directed to control rhizome johnsongrass 8 to 16" tall. BEACON may be applied overtop corn up to 20" tall. Directed or semi-directed applications may improve weed coverage and minimize crop injury. Add nonionic surfactant (1 qt/100 gal of spray mix), or crop oil concentrate (1 to 4 pt/A.). Do not apply BEACON to corn previously treated with COUNTER 15G, or COUNTER 20 CR (in-furrow) unless hybrid is IR (imidazolinone resistant). Injury may occur where BEACON is applied to corn previously treated with soil-applied LORSBAN or COUNTER 20CR T-banded. MOA=2
Buctril 4 EC (bromoxynil)	0.5-0.75 pt	0.25-0.38 lb	Apply overtop corn from 3- to 8-leaf stage (V3-V8) to control cocklebur, glyphosate- and ALS-resistant and Palmer amaranth. Apply when weeds are in the 2- to 4-leaf stage (V2-V4) or less than 6" tall. Less danger of volatility drift than 2,4-D or BANVEL. MOA=6
+ atrazine 4 WDL	+ 1.0-2.0 qt	+ 1.0-2.0 lb	
Callisto 4 SC (mesotrione)	3.0 oz	0.094 lb	Good control of cocklebur, glyphosate- and ALS-resistant and Palmer amaranth, and several other weeds. Apply before Palmer amaranth reaches 5" tall. Apply overtop corn up to 12" tall. (Note: Without ATRAZINE, CALLISTO may be applied to corn up to 30" tall). Always add crop oil concentrate at 1 gal/100 gal of spray mix and UAN at a rate of 2.5% v/v or AMS at a rate of 8.5 lbs/100 gal. Do not apply postemergence if corn has been previously treated with COUNTER or LORSBAN insecticides. MOA=27+5
+ atrazine 4 WDL	+ 1.0 pt	+ 0.25 lb	
Distinct 70 DG  (dicamba + diflufenzopyr)	4.0-6.0 oz	0.138-0.207 lb + 0.054-0.80 lb	Apply overtop to corn between 4" and 24" tall. For corn 4 to 10" tall, use 6 oz/A. For corn 10 to 24" tall, use 4 oz/A. Use drop nozzles at the 4 oz/A rate as a rescue treatment for corn 24-36" tall. Always add nonionic surfactant at 1 qt/100 gal of spray mix. Do not use crop oil. Distinct provides excellent control of several broadleaf weeds, including cocklebur, sicklepod, annual morningglory, and glyphosate- and ALS-resistant Palmer amaranth. Do not apply under conditions which favor drift onto nearby, sensitive crops. Do not tank-mix with growth regulator herbicides, such as BANVEL or 2,4-D. MOA=4+19

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Expert 4.88 L (glyphosate + s-metolachlor + atrazine)	2.5-3.75 qt	0.47-0.71 lb ae + 1.09-1.63 lb + 1.33-2.0 lb	USE ONLY ON ROUNDUP READY CORN HYBRIDS! EXPERT is a RESTRICTED USE PESTICIDE. Apply from emergence up till 12" tall corn. MOA=9+15+5
Glyphosate (various) acid equivalent (ae)  3 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.5 lb ae/gal	32 oz 24 oz 23 oz 22 oz	0.75 lb ae	USE ONLY ON ROUNDUP READY CORN HYBRIDS! Apply broadcast in corn up to the V8 growth stage (30" tall). Use drop nozzles for 30-48" tall corn to avoid the whirls of the plants. Allow a minimum of 10 days between applications. May be tank mixed with ATRAZINE (application restricted to 12" tall corn) for residual control. MOA=9
Halex GT 4.389 L (s-metolachlor + glyphosate + mesotrione)	3.6-4.0 pt	0.95-1.05 lb + 0.95-1.05 lb ae + 0.10-0.11 lb	USE ONLY ON ROUNDUP READY CORN HYBRIDS! Apply broadcast in corn up to the V8 growth stage (30" height). Controls glyphosate- and ALS-resistant Palmer amaranth. Add a non-ionic surfactant (1-2 qt/100 gal) and AMS (8.5 lb/100 gal) to the spray tank. If activating rain (0.25") is not received within 7-10 days, residual activity will be reduced. Do apply foliar carbamate or organophosphate insecticides 7 days before or 7 days after a HALEX GT application. Do not apply HALEX GT postemergence to fields previously treated with soil-applied COUNTER or LORSBAN insecticides. Do not apply HALEX GT in a nitrogen fertilizer carrier solution (i.e., UAN). Do not apply more than 4.0 pt/A/year of HALEX GT. MOA=15+9+27
Ignite 280 2.34 S (glufosinate)	22 oz	0.40 lb	USE ONLY ON CORN DESIGNATED AS LIBERTYLINK HYBRIDS! Apply LIBERTY overtop on corn from emergence up to the 24" tall corn (V7) (IGNITE limited to V5). Use drop nozzles when applying LIBERTY from 24-36" tall corn. Consult label for individual weed size recommendations. Controls glyphosate- and ALS-resistant Palmer amaranth (less than 3"). Will suppress rhizome johnsongrass. Always add AMS at 3 lb/A when applying IGNITE or LIBERTY. Do not add surfactant or crop oil. Do not exceed 44 oz (IGNITE) or 62 oz (LIBERTY) per acre per season. MOA=10
Liberty 1.67 S	28-34 oz	0.37-0.44 lb	

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Impact 2.8 SC (topramezone)  + atrazine 4 WDL	0.75 oz  + 0.25-3.5 pt	0.016 lb  + 0.25-1.5 lb	Good to excellent control of cocklebur, glyphosate- and ALS-resistant and Palmer amaranth, and several other weeds. Apply before Palmer amaranth reaches 6" tall. Apply overtop corn up to 12" tall. Add MSO at 1.0-1.5 gal/100 gal of spray mix combined with a fertilizer solution of UAN at 1.25-2.5 gal/100 gal of spray mix or spray grade AMS at 8.5-17 lb / 100 gal. MOA=28
Laudis 3.5 SC (tembotrione)  + atrazine 4 WDL	3.0 oz  + 0.5 pt	0.082 lb  + 0.50 lb	Apply overtop on corn from emergence up to the 8th collar stage (V8). Controls glyphosate- and ALS-resistant Palmer amaranth, sicklepod, Texas panicum, and prickly sida. Add 0.5 lb/A ATRAZINE to enhance control of weeds larger than 6" (Restricts application to corn 12" tall or less). Add MSO at 1 gal/100 gal of spray mix plus 1.5 qt/A of UAN or 1.5 lb/A of spray grade AMS. Do not use NIS as weed control performance will be erratic. A second sequential 3 oz/A application can be made (wait a minimum of 14 days). Do not exceed 6 oz/A in a growing season. MOA=27
Lightning 70 DG  (imazethapyr + imazapyr)	1.28 oz	0.042 lb + 0.014 lb	USE ONLY ON CLEARFIELD CORN HYBRIDS! Apply overtop from the spiking stage up to 20" tall corn. Does not provide residual control of cocklebur and other large seeded broadleaf weeds. Always add crop oil concentrate (1 gal/100 gal) or nonionic surfactant (1 qt/100gal) of spray mix. Do not make more than one application of LIGHTNING per season. Do not use Counter 15G insecticide when Lightning will be applied to IT hybrids. Counter 20 CR (banded) may be used. LIGHTNING can be tank mixed with ATRAZINE or DISTINCT to broaden weed control. When tank mixing LIGHTNING with DISTINCT, do not use crop oil concentrate. MOA=2+2

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Marksman 3.2 S  (dicamba + atrazine)	2.0-3.5 pt	0.28-0.48 lb + 0.53-0.92 lb	MARKSMAN is a RESTRICTED USE PESTICIDE. Apply for broadleaf weed control including annual morningglory and glyphosate- and ALS-resistant Palmer amaranth. A maximum of 3.5 pt/A may be applied during the period from corn emergence through the 5 leaf stage (V5) or 8" tall. Reduce rate to 2 pt/A on coarse textured soils. Non-ionic surfactant may be added. Do not add crop oil. MOA=4+5
Option 35 DF (foramsulfuron)	1.5-1.75 oz	0.003-0.038 lb	Apply to corn at the V1 to V6 growth stage. Use directed or drop nozzles for applications at the V7-V8 growth stage. Add methylated or ethylated seed oil (1.5 pt/A) in combination with nitrogen fertilizer (1.5-2 qt/A of UAN or 1.5-3 lb/A of AMS). Do not use OPTION in the same season as COUNTER 15G, COUNTER 20CR, DYFONATE and THIMET. Note: In fields heavily infested with johnsongrass, apply only to virus tolerant hybrids. MOA=2
Permit 75 DF (halosulfuron)	0.67-1.33 oz	0.031-0.062 lb	Apply overtop to control cocklebur, common ragweed, velvetleaf and yellow nutsedge. Weak on sicklepod and morningglory. Add surfactant (1-2 qt/100 gal) or crop oil (1 gal/100 gal). May be tank-mixed with Accent or Beacon for johnsongrass control. MOA=2
Prowl H2O 3.8 CS (pendimethalin)	2.0-3.0 pt	0.95-1.43 lb	Apply over-the-top after corn emergence up to 12" tall (V4) but when seedling grasses are less than 1" tall. Use the higher rates on fine-textured soils. In case of stand failure, corn seed should be replanted below the herbicide treated zone. MOA=3
Prowl 3.3 EC	1.8-2.4 pt	0.75-1.0 lb	
+ atrazine 4 WDL	+ 1.5-2.0 qt	+ 1.5-2.0 lb	
Pursuit 70 DG (imazethapyr)	1.44 oz	0.063 lb	USE ONLY ON CLEARFIELD CORN HYBRIDS! Use only on imidazolinone-resistant corn hybrids. Apply overtop to actively growing weeds (less than 3"). Always add crop oil concentrate (1.25 gal/100 gal), MSO (1 gal/100 gal), or NIS (1 qt/100gal) plus a nitrogen fertilizer solution [UAN or similar] (1.25-2.5 gal/100 gal) or AMS 12-15 lb/100 gal). Do not make more than one application of PURSUIT per season. Consult label on use of soil applied insecticides and other precautions. Wait a minimum of 45 days between application and harvest. MOA=2
Pursuit 2 AS	4.0 oz		

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Resolve 25 DF (rimsulfuron)	1.0 oz	0.016 lb	Apply overtop to corn from emergence up to 12 inch corn (6 collars visible), whichever is more restrictive, to control annual morningglory and cocklebur. Weak on Palmer amaranth. Add surfactant (1 qt/100 gal) plus ammonium nitrogen fertilizer (2 qt/A) or ammonium sulfate (2 lb/A). Soil moisture is needed for activation, if rainfall is not received within 7 days of application, follow-up with cultivation or a sequential application of ACCENT. Do not apply more than 2.0 oz/A of RESOLVE 25 DF in a growing season. Do not tank mix RESOLVE 25 DF with BASAGRAN or LADDOCK or severe crop injury may occur. Do not tank mix RESOLVE 25 DF with a foliar applied organophosphate insecticides, such as LORSBAN, MALATHION, PARATHION, etc., as severe crop injury may occur. MOA=2
Resolve Q (mp) 22.4 DF  (thifensulfuron + rimsulfuron)	1.25 oz	0.014 lb + 0.003 lb	Apply overtop to corn from emergence up to 20 inch corn (7 collars visible), whichever is more restrictive, to control annual morningglory and cocklebur. Provides only suppression of Palmer amaranth. Add surfactant (1 qt/100 gal) plus ammonium nitrogen fertilizer (2 qt/A) or ammonium sulfate (2 lb/A). Soil moisture is needed for activation, if rainfall is not received within 7 days of application, follow-up with cultivation or a sequential application of ACCENT. Do not apply more than 2.5 oz/A of RESOLVE Q in a growing season. Do not tank mix RESOLVE Q with BASAGRAN or LADDOCK or severe crop injury may occur. Do not tank mix RESOLVE Q with a foliar applied organophosphate insecticides, such as LORSBAN, MALATHION, PARATHION, etc., as severe crop injury may occur. MOA=2
Sequence 5.25 S  (glyphosate + s-metolachlor)	2-2.5 pt	0.56-0.71 lb ae + 0.56-0.70 lb	USE ONLY ON ROUNDUP READY CORN HYBRIDS! Apply from emergence up till corn plants reach 30 " tall. Do not exceed 2.5 pt/A in a single application or 5.0 pt/A total per year. Can be tank mixed with ATRAZINE for improved residual broadleaf weed control (consult label for additional tank mix choices). MOA=9+15

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Steadfast 75DF  (nicosulfuron + rimsulfuron)	0.75 oz	0.023 lb + 0.012 lb	Apply to corn up to 20" tall or 6 collars (V6). Always add COC (1 gal/100 gallons) or NIS (1 qt per 100 gallons). The label recommends the addition of nitrogen fertilizer solution (2 qt/A) or ammonium sulfate (4lb/A). Do not apply to corn previously treated with COUNTER 15G, or COUNTER 20CR (in-furrow). Injury may occur when STEADFAST is applied to corn previously treated with soil applied LORSBAN, THIMET, or COUNTER 20CR T-banded. Do not tank mix STEADFAST with BASAGRAN or LADDOCK or severe crop injury may occur. Do not tank mix STEADFAST with a foliar applied organophosphate insecticides, such as LORSBAN, MALATHION, PARATHION, etc., as severe crop injury may occur. MOA=2+2
Steadfast ATZ 89.3 WDG  (nicosulfuron + rimsulfuron + atrazine)	14 oz	0.024 lb + 0.011 lb + 0.75 lb	Apply to corn up to 12" tall (V4). Add nonionic surfactant at 1 qt/100 gal or crop oil concentrate at 1 gal/100 gal of spray mix plus 2 qt/A of urea ammonium nitrate or 2 lb/A of ammonium sulfate. Do not apply STEADFAST ATZ to corn previously treated with a soil insecticide such as COUNTER 15G, COUNTER 20CR (in-furrow), THIMET, LORSBAN, or COUNTER 20CR (T-banded). Do not tank mix STEADFAST ATZ with BASAGRAN or LADDOCK or severe crop injury may occur. Do not tank mix STEADFAST ATZ with a foliar applied organophosphate insecticides, such as LORSBAN, MALATHION, PARATHION, etc., as severe crop injury may occur. MOA=2+2+5
Stout 72.5 DF  (nicosulfuron + thifensulfuron)	0.5-0.75 oz	0.021-0.025 lb + 0.002-0.009 lb	Provides selective postemergence control of grass and broadleaf weeds in field corn. Apply to corn up to 16" tall (V5). Do not apply to field corn grown for seed, popcorn, or sweet corn. Add NIS at 1 qt/100 gal, or COC at 1 gal/100 gal of spray mix. Do not apply STOUT to corn previously treated with COUNTER 15G, or COUNTER 20CR (in-furrow) unless hybrid is IR (imidazolinone resistant). MOA=2+2

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Postemergence (POST) Herbicides for Weed Management in Corn (cont).**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
Status 56WDG  (dicamba + diflufenzopyr + isoxadifen)	5-10 oz	0.223-0.446 lb + 0.089-0.178 lb + safener	Apply overtop on corn from V2 (4" tall) to V10 (36" tall) growth stages. Controls many broadleaf weeds including morningglory, sicklepod, and glyphosate- and ALS-resistant Palmer amaranth. Consult label for a list of tank mix partners and other restrictions. MOA=4+19
2,4-D 4S amine or low volatile ester	0.5-1.0 pt	0.25-0.5 lb	Apply overtop for corn under 8" tall. Controls many broadleaf weeds including morningglory, sicklepod, and glyphosate- and ALS-resistant Palmer amaranth. On taller corn, use directed application to prevent crop injury and provide better spray coverage of weeds. Do not apply under conditions which favor drift onto nearby, sensitive crops. MOA=4

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**POST Directed Herbicides for Weed Management in Corn**

Herbicide	Rate/Acre Broadcast		Remarks/Precautions <sup>1</sup>
	Formulation	Active Ingredient	
2,4-D 4S amine or low volatile ester	0.5-1.0 pt	0.125-0.25 lb	Apply only as a directed spray from 8 " tall up to tasseling using drop nozzles to minimize contact with corn plant. Controls morningglory and other broadleaf plants. If corn plants are growing rapidly reduce 2,4-D rate to 0.5 pt to minimize crop injury potential. MOA=4
Aim 2EC (carfentrazone)  Aim 1.9EW	0.5-2.0 fl oz	0.008-0.031 lb	Apply only as directed spray from V8 to V14 growth stage. Controls annual morningglory and pigweed. Add a COC (1-2 gal/100 gals), NIS (1 qt/100 gals), or MSO (1-2 gal/100 gals). Avoid directing the spray in the whorl of the plant. MOA=14
Evik 80WDG (ametryn)	1.25-2.5 lb	1.0-2.0 lb	Apply only as a directed spray. Minimum corn height: AMETRYN (MOA=5) -12 in., LINURON (MOA=7) -15 in., PARAQUAT (MOA=22) -10 in. Spray to cover weeds no more than 3 to 4 in. tall. Where rate range is given, use lower rate when weeds are no taller than 2 in. and higher rate for weeds up to 4 in. tall. Use a nonionic surfactant to improve spray coverage of weeds. Do not apply AMETRYN within 3 weeks of tasseling. Do not apply PARAQUAT higher than 3" on the stalk.
Gramoxone Inteon 2E (paraquat)	1.0-2.0 pt	0.25-0.5 lb	
Linex 4L (linuron)	1.25-3.0 pts.	0.63-1.5 lb	
Lorox 50DF	1.25-3.0 lb	0.63-1.5 lb	

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

## Harvest Aids in Corn

Rate/Acre Broadcast			
Herbicide	Formulation	Active Ingredient	Remarks/Precautions <sup>1</sup>
2,4-D 4S amine or low volatile ester	1.0-2.0 pt	0.25-0.5 lb	Apply broadcast after the hard dough or dent growth stage to control vines (i.e., annual morningglory) that may interfere with harvest. Do not graze or harvest for fodder until 7 days after application. MOA=4
Aim 2EC (carfentrazone)  Aim 1.9EW	1.0-2.0 oz	0.008-0.031 lb	Apply after physiological maturity (black layer has formed). Desiccates annual morningglory and other harvest impediments. Add a COC (1-2 gal/100 gals), NIS (1 qt/100 gals), or MSO (1-2 gal/100 gals) to the spray mix. MOA=14
Glyphosate acid equivalent (ae)  3 lb ae/gal 4 lb ae/gal 4.17 lb ae/gal 4.5 lb ae/gal	  96 oz 72 oz 69 oz 66 oz	3.0 lb ae	Apply after physiological maturity (less than 35% moisture, black layer has formed). Allow 7 days between application and harvest. Not recommended for corn grown for seed. MOA=9

<sup>1</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.



**Crop Replant and Rotation Restrictions for Corn Herbicides1**

	<b>Corn</b>	<b>Cotton</b>	<b>Grain Sorghum</b>	<b>Peanuts</b>	<b>Soybeans</b>	<b>Sunflower</b>	<b>Tobacco</b>	<b>Wheat</b>
Aatrex	0 D	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Accent	0 D	10 M	10 M	10 M	15 D	10 M	10 M	4 M
Aim	0 D	0 D	0 D	0 D	0 D	0 D	12 M	0 D
Axiom	0 D	12 M	12 M	12 M	0 D	12 M	12 M	12 M
Banvel/Clarity	Spring	21 D	Spring	Spring	21 D	Spring	Spring	Spring
Basagran	No information on label							
Beacon	14 D	8 M	8 M	8 M	8 M	8 M	8 M	8 M
Bicep II Magnum	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Buctril	30 D	30 D	30 D	30 D	30 D	30 D	30 D	30 D
Bullet/Lariat	0 D	Spring	0 D	Spring	Spring	Spring	Spring	Spring
Callisto	0 D	Spring	Spring	Spring	Spring	Spring	Spring	120 D
Cinch	0 D	0 D	0 D	0 D	0 D	0 D	Spring	4.5 M
Cinch ATZ	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Define	0 D	4 M	12 M	12 M	0 D	12 M	12 M	12 M
Degree Extra	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Distinct	0 D	30 D	30 D	30 D	30 D	30 D	30 D	30 D
Dual 8E	0 D	0 D	0 D	0 D	0 D	0 D	Spring	4.5 M
Dual Magnum	0 D	0 D	0 D	0 D	0 D	0 D	Spring	4.5 M
Dual II Magnum	0 D	0 D	0 D	0 D	0 D	0 D	Spring	4.5 M
Evik	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Fall
Expert	0 D	Spring	0 D	Spring	Spring	18 M	18 M	18 M
Frontier/Outlook	0 D	Spring	Spring	0 D	0 D	Spring	Spring	4 M
FulTime	Spring	Spring	Spring	Spring	Spring	Spring	Spring	15 M
Glyphosate	0 D	0 D	0 D	0 D	0 D	0 D	1 M	0 D
Gramoxone Inteon	0 D	0 D	0 D	0 D	0 D	0 D	0 D	0 D
Guardman Max	0 D	Spring	0 D	Spring	Spring	Spring	18 M	Spring
Halex GT	0 D	10 M	0 D	10 M	10 M	10 M	10 M	120 D
Harness	0 D	18 M	Spring	Spring	Spring	Spring	Spring	Fall
Harness Extra	0 D	18 M	Spring	Spring	Spring	Spring	Spring	Spring

1 M = months, D = days, Spring = The spring following application.

### Crop Replant and Rotation Restrictions for Corn Herbicides (cont)1

	Corn	Cotton	Grain Sorghum	Peanuts	Soybeans	Sunflower	Tobacco	Wheat
Impact	0 D	9 M	18 M	9 M	9 M	9 M	18 M	3 M
Intrro	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Ignite 280 SL	0 D	120 D	70 D	120 D	0 D	120 D	120 D	70 D
Laudis	0 D	10 M	18 M	18 M	8 M	18 M	18 M	4 M
Lightning	8.5 M	18 M	18 M	9.5 M	9 M	18 M	9.5 M	4 M
Linex/Lorox	4 M	4 M	4 M	4 M	4 M	4 M	4 M	4 M
Lumax	0 D	Spring	Spring	Spring	Spring	18 M	18 M	4.5 M
Marksman	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Micro-Tech	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
NIC-IT	0 D	10 M	18 M	18 M	15 D	11 M	18 M	8 M
Option	7 D	60 D	60 D	60 D	14 D	60 D	60 D	60 D
Partner	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Permit	1 M	4 M	2 M	9 M	9 M	18 M	18 M	2 M
Prowl H2O	0 D	0 D	0 D	0 D	0 D	0 D	0 D	4 M
Pursuit	18 M	18 M	18 M	0 D	0 D	18 M	9.5 M	4 M
Python	0 D	18 M	12 M	4 M	0 D	18 M	9 M	4 M
Resolve	0 D	10 M	10 M	18 M	10 M	10 M	18 M	3 M
Resolve Q	0 D	10 M	10 M	18 M	10 M	10 M	18 M	3 M
Sequence	0 D	0 D	0 D	0 D	0 D	Spring	Spring	4.5 M
Status	0 D	30 D	30 D	30 D	30 D	30 D	120 D	30 D
Steadfast	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Steadfast ATZ	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Spring
Stout	0 D	10 M	10 M	18 M	15 D	10 M	18 M	4 M
Surpass	0 D	18 M	Spring	Spring	Spring	Spring	Spring	Spring
TopNotch	0 D	18 M	Spring	Spring	Spring	Spring	Spring	Spring
2,4-D	Only crops labeled for 2,4-D in the same year.							

1 M = months, D = days, Spring = The spring following application.



**Trade Name and Ingredient Index for Corn Herbicides**

<b>Trade Name</b>	<b>Active Ingredient(s)</b>	<b>Formulation<sup>1</sup></b>	<b>MOA<sup>2</sup></b>	<b>Manufacturer</b>
AAtrex	atrazine	4 WDL, 90 WDG	5	Syngenta
Accent	nicosulfuron	75 DF	2	Syngenta
Aim	carfentrazone	2 EC; 1.9 EW	14	FMC
Axiom	flufenacet + metribuzin	68 WDG (54.4 + 13.6 %)	15+5	Bayer CropScience
Banvel	dicamba	4 S; 2 S	4	Microflo
Basagran	bentazon	4 S	6	Microflo
Beacon	primisulfuron	75 DF	2	Syngenta
Bicep II Magnum	s-metolachlor + atrazine + safener	5.5 SC (3.1 + 2.4 lb/gal)	15+5	Syngenta
Bicep Lite II Magnum	s-metolachlor + atrazine + safener	6 L (3.33 + 2.67 lb/gal)	15+5	Syngenta
Buctril	bromoxynil	4 EC; 2 EC	6	Bayer CropScience
Bullet	alachlor + atrazine	4 ME (2.5 + 1.5 lb/gal)	15+5	Monsanto
Callisto	mesotrione	4 SC	27	Syngenta
Cinch	s-metolachlor + safener	7.64 EC	15	DuPont
Cinch ATZ	s-metolachlor + atrazine + safener	5.5 SC (3.1 + 2.4 lb/gal)	15+5	DuPont
Clarity	dicamba	4 S	4	BASF
Degree	acetochlor + safener	3.8 ME	15	Monsanto
Degree Xtra	acetochlor + atrazine + safener	4.04 CS	15+5	Monsanto
Direx	diuron	4 L	7	Griffin
Distinct	diflufenzopyr + dicamba	70 WDG (20 + 50%)	19+4	BASF
Dual Magnum	s-metolachlor	7.62 EC	15	Syngenta
Dual II Magnum	s-metolachlor	7.64 EC	15	Syngenta
Expert	glyphosate + s- metolachlor + atrazine	4.88 L (1.0 + 1.74 + 2.14 lb/gal)	9+15+5	Syngenta
Evik	ametryn	76 WDG	5	Syngenta
ET	pyraflufen ethyl	0.208 EC	14	Nichino America
FulTime	acetochlor + atrazine	4.0 SC (2.4 + 1.6)	15+5	Dow AgroSciences
Glyfos Xtra	glyphosate	3.0 S (acid eq.)	9	Chemnova
Glyphomax Plus	glyphosate	3.0 S (acid eq.)	9	Dow AgroSciences

<sup>1</sup> Abbreviations: DF=dry flowable; E or EC=emulsifiable concentrate; F=flowable; L=liquid; S=water solution; ME or CS = micro-encapsulated; SC=soluble concentrate; EW=oil-in-water emulsion; WDG=water dispersible granule; WDL=water dispersible liquid.  
<sup>2</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Trade Name and Ingredient Index for Corn Herbicides (cont)**

Trade Name	Active Ingredient(s)	Formulation <sup>1</sup>	MOA <sup>2</sup>	Manufacturer
Gramoxone Inteon	paraquat	2 E	22	Syngenta
Guardman Max	atrazine + dimethenamid-p	5 E (3.3 + 1.7 lb/gal)	5+15	BASF
Halex GT	s-metolachlor + glyphosate + mesotrione	4.389 L (2.09 + 2.09 + 0.209 lb/gal)	15+9+27	Syngenta
Harness	acetochlor + safener	7 E	15	Monsanto
Harness Xtra	acetochlor + atrazine + safener	5.6 L (3.1 + 2.5 lb/gal); 6 L (4.3 + 1.7 lb/gal)	15+5	Monsanto
Ignite	glufosinate	1.67 S	10	Bayer CropScience
Ignite 280 SL	glufosinate	2.34 S	10	Bayer CropScience
Impact	topramezone	2.8 SC	28	AMVAC
Keystone	acetochlor + atrazine	5.5 L (3 + 2.5 lb/gal)	15+5	Dow AgroSciences
Lariat	alachlor + atrazine	4 EC (2.5 + 1.5 lb/gal)	15+5	Monsanto
Laudis	tembotrione	3.5 SC	27	Bayer CropScience
Liberty	glufosinate	1.67 SL	10	Bayer CropScience
Lightning	imazethapyr + imazapyr	70 DF (52.5 + 17.5 %)	2+2	BASF
Linex 4L	linuron	4 L	7	DuPont
Lorox	linuron	50 DF	7	DuPont
Lumax	s-metolachlor + atrazine + mesotrione	3.948 EC (2.68 + 1 + 0.268 lb/gal)	15+5+27	Syngenta
Marksman	dicamba + atrazine	3.2 S (1.1 + 2.1 lb/gal)	4+5	BASF
Micro-Tech	alachlor	4 ME	15	Monsanto
NIC-IT	nicosulfuron	2 EC	2	Cheminova
Option	foramsulfuron	35 WDG	2	Bayer CropScience
Outlook	dimethenamid-p	6 EC	15	BASF
Permit	halosulfuron	75 DF	2	Monsanto
Princep	simazine	4 WDL; 90 DF	5	Syngenta
Prowl 3.3 EC	pendimethalin	3.3 EC	3	BASF
Prowl H2O	pendimethalin	3.8 CS	3	BASF

<sup>1</sup> Abbreviations: DF=dry flowable; E or EC=emulsifiable concentrate; F=flowable; L=liquid; AS, L, or S=water solution; ME or CS = micro-encapsulated; SC=soluble concentrate; EW=oil-in-water emulsion; W DG=water dispersible granule; WDL=water dispersible liquid.

<sup>2</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

**Trade Name and Ingredient Index for Corn Herbicides (cont)**

Trade Name	Active Ingredient(s)	Formulation <sup>1</sup>	MOA <sup>2</sup>	Manufacturer
Pursuit	imazethapyr	2 AS; 70 DG	2	BASF
Python	flumetsulam	80 WDG	2	Dow AgroSciences
Resolve 25DF	rimsulfuron	25 DF	2	DuPont
Resolve Q (mp)	thifensulfuron + rimsulfuron	22.4 DF (4.0 + 18.4%)	2+2	DuPont
Rodeo	glyphosate	4.0 S (acid eq.)	9	Dow AgroSciences
Roundup Original	glyphosate	3.0 S (acid eq.)	9	Monsanto
Roundup OriginalMAX	glyphosate	4.5 S (acid eq.)	9	Monsanto
Roundup PowerMAX	glyphosate	4.5 S (acid eq.)	9	Monsanto
Roundup WeatherMAX	glyphosate	4.5 S (acid eq.)	9	Monsanto
Sequence	glyphosate + s-metolachlor	5.25 L (2.25 + 3 lb/gal)	9+15	Syngenta
Status	dicamba + diflufenzopyr + safener	56 WDG	4+19	BASF
Steadfast	nicosulfuron + rimsulfuron	75 DF (50 + 25%)	2+2	DuPont
Steadfast ATZ	nicosulfuron + rimsulfuron + atrazine	89.3 WDG (2.7 + 1.3 + 85.3 %)	2+2+5	DuPont
Stout	nicosulfuron + thifensulfuron	72.5 DF (67.5 + 5.0%)	2+2	DuPont
Surpass	acetochlor + antidote	6.4 EC	15	Dow AgroSciences
TopNotch	acetochlor	3.2 ME	15	Dow AgroSciences
Touchdown HiTech	glyphosate	4.5 S (acid eq.)	9	Syngenta
Touchdown Total	glyphosate	4.17 S (acid eq.)	9	Syngenta
Touchdown IQ	glyphosate	3 S (acid eq.)	9	Syngenta
Valor SX	flumioxazin	51 WDG	14	Valent
Weedar 64	2,4-D	3.8 S	4	Nufarm
2,4-D amine or ester	2,4-D	several	4	several

<sup>1</sup> Abbreviations: DF=dry flowable; E or EC=emulsifiable concentrate; F=flowable; L=liquid; S=water solution; ME or CS = micro-encapsulated; SC=soluble concentrate; EW=oil-in-water emulsion; WDG=water dispersible granule; WDL=water dispersible liquid.  
<sup>2</sup> Mode of Action (MOA) identifies the site of action(s) of that particular product. This aids in rotating herbicide products to avoid resistance problems.

# Corn Insect Control – 2008-2009

Francis P. F. Reay-Jones. Ph.D.

R = Restricted use pesticide; REI = re-entry interval; PHI = pre-harvest interval; PGI = pre-grazing interval

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Armyworm</b> (seed insecticide)	Bt-resistant corn YIELDGARD CORN BORER YIELDGARD PLUS YIELDGARD VT TRIPLE  HERCULEX I HERCULEX XTRA	Insecticide in plant	-	-	-	See dealers for refuge requirements for Bt corn. The Bt gene is expressed in ear and green tissue of Yieldgard corn, but only in green tissue of Herculex corn.
<b>Armyworms</b> (post-emergence insecticides)	Beta-cyfluthrin BAYTHROID XL - R	1.6-2.8 oz/ac	12	21	0 (green) 21 (fodder)	
	Bifenthrin CAPTURE 2EC - R  CAPTURE 1.15G - R	2.1-6.4 oz/ac  3.5-8.7 oz/ac	12  12	30  30	30  30	Apply broadcast in at least 10 gal/ac of water by ground.  Apply broadcast when insects first appear.
	Carbaryl SEVIN 80S, 80WSP  4F, XLR Plus	1.25-2.5 lb/ac  1-2 qts/ac	12  12	14 (silage) 48 (ears)  14 (silage) 48 (ears)	14 (green) 48 (fodder) 14 (green) 48 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC - R	1.5-1.9 oz/ac	12	21	12 (green) 21 (fodder)	For ground application, use at least 5 gal/ac of water.
	Esfenvalerate ASANA XL - R	5.8-9.6 oz/ac	12	21	-	
	Gamma-cyhalothrin PROAXIS - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	For control of 1st and 2nd instars only.
	Lambda-cyhalothrin WARRIOR	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	Use higher rates for large larvae.
	Chlorpyrifos and Lambda-cyhalothrin COBALT - R	13-38 oz/ac	24	30	30	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Armyworms</b> (post-emergence insecticides - cont.)	Methomyl LANNATE LV - R	0.75-1.5 pts/ac	48	21 (ears)	3 (green) 21 (fodder)	
	LANNATE SP - R	0.25-0.5 lbs/ac	48	21 (ears)	3 (green) 21 (fodder)	
	Methoxyfenozide INTREPID 2F	4-8 oz/ac	4	21	21	Use only for true armyworm. Apply at first sign of egg hatch.
	Methyl parathion CHEMINOVA METHYL 4E - R	0.5 pts/ac	60	12	12	
	PENNCAP - R	2-3 pts/ac	60	12	12	
	Permethrin PERMETHRIN 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	Apply at first sign of egg hatch.
	POUNCE 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	Permethrin POUNCE 1.5G - R	6.7-13.3 oz/ac	12	30	0 (green) 30 (fodder)	Apply at first sign of egg hatch.
	Spinosad TRACER	2-3 oz/ac	4	28	7	Apply at peak egg hatch of each generation.
	Zeta-cypermethrin MUSTANG MAX - R	3.2-4.0 oz/ac	12	30	60	
<b>Billbugs</b> (seed insecticide)	Clothianidin PONCHO 250	0.25 mg (ai)/seed	-	-	-	Seed treatment
	PONCHO 1250	1.25 mg (ai)/seed	-	-	-	
	Thiomethoxam CRUISER 5FS 250 CRUISER 5FS 1250	0.25 mg (ai)/seed 1.25 mg (ai)/seed	12 12	- -	- -	Seed treatment
<b>Billbugs</b> (at planting)	Terbufos COUNTER 15G - R	6 to 8 oz/1000 ft of row	48	60	30	Apply either in 7 inch band or in furrow
	Telfluthrin FORCE 3G - R	4 to 5 oz/1000 ft of row	0	-	-	Apply as band or T-band.
	Fipronil REGENT 4SC - R	0.24 oz/1000 ft of row	0	90	90	Apply in furrow using a direct injection liquid system.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Chinch bug</b> (seed insecticide)	Thiomethoxam CRUISER 5FS 250	0.25 mg (ai)/seed	12	-	-	Seed treatment
	CRUISER 5FS 1250	1.25 mg (ai)/seed	12	-	-	
<b>Chinch bug</b> (at planting)	Tefluthrin FORCE 3G - R	4 to 5 oz/ 1000 ft of row	0	-	-	Apply as band or T-band.
	Fipronil REGENT 4SC - R	0.24 oz/ 1000 ft of row	0	90	90	Apply in furrow using a direct injection liquid system.
	Chlorpyrifos LORSBAN 4E - R	1-2 pts/acre	24	35	14	Apply as preplant broadcast granules or a preplant broadcast spray in 20 gal spray/ac or more.
	CHLORPYRIFOS 4E AG - R	1-2 pts/acre	24	35	14	
	LORSBAN 15G	8 oz/ 1000 ft of row.	24	35	14	
<b>Chinch bug</b> (post- emergence insecticides)	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	Carbaryl SEVIN 80S, 80WSP	1.25-2.5 lb/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	Use ground equipment to apply at least 20 gal/ac of water and direct spray towards stalk.
	4F, XLR Plus	1-2 qts/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	Chlorpyrifos LORSBAN 4E - R	1-2 pts/acre	24	35	14	
	CHLORPYRIFOS 4E AG - R	1-2 pts/acre	24	35	14	
	Beta-cyfluthrin BAYTHROID XL - R	1.6-2.8 oz/ac	12	21	0 (green) 21 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC - R	1.5-1.9 oz/ac	12	21	0 (green) 12 (fodder)	For ground application, use at least 5 gal/ac of water.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Chinch bug</b> (post-emergence insecticides – cont.)	Esfenvalerate ASANA XL - R	5.8-9.6 oz/ac	12	21	-	Spray needs to be directed towards base of plant.
	Gamma-cyhalothrin PROAXIS - R	3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Lambda-cyhalothrin WARRIOR - R	3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Zeta-cypermethrin MUSTANG MAX - R	3.2-4.0 oz/ac	12	30	60	
<b>Corn earworm</b> (seed insecticide)	Bt-resistant corn YIELDGARD CORN BORER YIELDGARD PLUS YIELDGARD VT TRIPLE  HERCULEX I HERCULEX XTRA	Insecticide in plant	-	-		See dealers for refuge requirements for Bt corn. The Bt gene is expressed in ear and green tissue of Yieldgard corn, but only in green tissue of Herculex corn.
<b>Corn earworm</b> (post-emergence insecticides)	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	Carbaryl SEVIN 80S, 80WSP	1.25-2.5 lb/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	4F, XLR Plus	1-2 qts/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	Chlorpyrifos LORSBAN 4E - R CHLORPYRIFOS 4E AG - R	1-2 pts/acre  1-2 pts/acre	24  24	35  35	14  14	
	Beta-cyfluthrin BAYTHROID XL - R	1.6-2.8 oz/ac	12	21	0 (green) 21 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC - R	1.5-1.9 oz/ac	12	21	12 (green) 21 (fodder)	For ground application, use at least 5 gal/ac of water.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Corn earworm</b> (post-emergence insecticides-cont.)	Gamma-cyhalothrin PROAXIS - R	1.92-3.2 oz/ac	24	21	1 (green) 21 (fodder)	Use before larvae enter stalk or ear.
	Lambda-cyhalothrin WARRIOR - R	1.92-3.2 oz/ac	24	21	1 (green) 21 (fodder)	Use before larvae enter stalk or ear.
	Methomyl LANNATE LV - R	0.75-1.5 pts/ac	48	21 (ears)	3 (green) 21 (fodder)	
	LANNATE SP - R	0.25-0.5 lbs/ac	48	21 (ears)	3 (green) 21 (fodder)	
	Permethrin PERMETHRIN 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	Apply just before silking.
	POUNCE 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	Spinosad TRACER	2-3 oz/ac	4	28	7	
	Zeta-cypermethrin MUSTANG MAX - R	1.76-4.0 oz/ac	12	30	60	
<b>Cutworm</b> (seed insecticide)	Bt-resistant corn HERCULEX I HERCULEX XTRA	Insecticide in plant	-	-	-	See dealers for refuge requirements for Bt corn.
	Clothianidin PONCHO 250 PONCHO 1250	0.25 mg (ai)/seed 1.25 mg (ai)/seed	- -	- -	- -	Seed treatment
	Thiomethoxam CRUISER 5FS 250 CRUISER 5FS 1250	0.25 mg (ai)/seed 1.25 mg (ai)/seed	12 12	- -	- -	Seed treatment

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
Cutworm (at planting)	Bifenthrin CAPTURE 2EC - R	0.15-0.30 oz/ 1000 ft of row	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	CAPTURE 1.15G - R	6.4-8 oz/1000 ft	12	30	30	
	Chlorpyrifos LORSBAN 4E - R	2 pts/acre	24	35	14	Apply as preplant broadcast granules or a preplant broadcast spray in 20 gal spray/ac or more.
	CHLORPYRIFOS 4E AG - R	2 pts/acre	24	35	14	
	LORSBAN 15G	8 oz/ 1000 ft of row	24	35	14	
	Esfenvalerate ASANA XL - R	0.45 oz/ 1000 ft of row	12	21	-	Apply in band, T- band, or in furrow.
	Gamma-cyhalothrin PROAXIS - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in band, T- band, or in furrow.
	Lambda-cyhalothrin WARRIOR - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in band, T- band, or in furrow
	Permethrin PERMETHRIN 3.2EC - R	4-8 oz/ac or 0.3-0.6 oz/1000 ft of row.	12	30	0 (green) 30 (fodder)	Apply in band, T- band, or in furrow
	POUNCE 3.2EC - R	4-8 oz/ac or 0.3-0.6 oz/1000 ft of row	12	30	0 (green) 30 (fodder)	
	Permethrin POUNCE 1.5G - R	8 oz/1000 ft of row	12	30	0 (green) 30 (fodder)	Apply in band, T- band, or in furrow
	Terbufos COUNTER 15G - R	6 to 8 oz/1000 ft of row	48	60	30	Apply either in 7 inch band or in furrow. Suppression only.
	Zeta-cypermethrin MUSTANG MAX - R	0.16 oz/1000 ft of row	12	30	60	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
Cutworm (post-emergence insecticides)	Beta-cyfluthrin BAYTHROID XL - R	0.8-1.6 oz/ac	12	21	0 (green) 21 (fodder)	
	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	Carbaryl SEVIN 80S, 80WSP	2.5 lb/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	Apply in 12-inch band over the row using sufficient volume of water to obtain thorough coverage. For broadcast, use at least 20 gal/ac of water by ground.
	4F, XLR Plus	2 qts/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC - R	1-1.5 oz/ac	12	21	12 (green) 21 (fodder)	For ground application, use at least 5 gal/ac of water.
	Esfenvalerate ASANA XL - R	5.8-9.6 oz/ac	12	21	-	
	Gamma-cyhalothrin PROAXIS - R	1.92-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Lambda-cyhalothrin WARRIOR - R	1.92-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Methomyl LANNATE LV - R	1.5 pts/ac	48	21 (ears)	3 (green) 21 (fodder)	
	LANNATE SP - R	0.5 lbs/ac	48	21 (ears)	3 (green) 21 (fodder)	
	Methyl parathion CHEMINOVA METHYL 4EC - R	0.5 pts/ac	60	12	12	
	PENNCAP-M - R	4 pts/ac	60	12	12	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Cutworm</b> (post-emergence insecticides-cont.)	Permethrin PERMETHRIN 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	POUNCE 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	Permethrin POUNCE 1.5G - R	6.7-13.3 oz/ac	12	30	0 (green) 30 (fodder)	
	Zeta-cypermethrin MUSTANG MAX - R	1.28-2.8 oz/ac	12	30	60	
<b>European corn borer</b> (seed insecticide)	Bt-resistant corn YIELDGARD CORN BORER YIELDGARD PLUS YIELDGARD VT TRIPLE  HERCULEX I HERCULEX XTRA	Insecticide in plant	-	-		See dealers for refuge requirements for Bt corn. The Bt gene is expressed in ear and green tissue of Yieldgard corn, but only in green tissue of Herculex corn.
<b>European corn borer</b> (post-emergence insecticides)	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	CAPTURE 1.15G - R	3.5-8.7 oz/ac	12	30	30	Apply broadcast at or just before egg hatch.
	Carbaryl SEVIN 80S, 80WSP	1.875-2.5 lb/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	Use ground equipment to apply at least 15 gal/acre of water and direct spray towards stalk.
	4F, XLR Plus	1.5-2 qts/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	Chlorpyrifos LORSBAN 4 - R	2 pts/acre	24	35	14	
	CHLORPYRIFOS 4E AG - R	2 pts/acre	24	35	14	
	LORSBAN 15G 1st generation	3.5-8 oz/ 1000 ft of row	24	35	14	
	2nd generation	6-8 oz/ 1000 ft of row	24	35	14	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>European corn borer</b> (post-emergence insecticides-cont.)	Beta-cyfluthrin BAYTHROID XL – R	1.6-2.8 oz/ac	12	21	0 (green) 21 (fodder)	Application must be made before larvae enter plant.
	Deltamethrin DELTA GOLD 1.5EC – R	1.5-1.9 oz/ac	12	21	12 (green) 21 (fodder)	For ground application, use at least 5 gal/ac of water.
	Esfenvalerate ASANA XL – R	7.8-9.6 oz/ac	12	21	-	Spray when eggs are in blackhead stage or before larvae enter whorl.
	Gamma-cyhalothrin PROAXIS – R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	Use before larvae enter stalk or ear.
	Lambda-cyhalothrin WARRIOR – R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	Use before larvae enter stalk or ear.
	Methomyl LANNATE LV – R	0.75-1.5 pts/ac	48	21 (ears)	3 (green) 21 (fodder)	
	LANNATE SP – R	0.25-0.5 lbs/ac	48	21 (ears)	3 (green) 21 (fodder)	
	Methoxyfenozide INTREPID 2F	4-8 oz/ac	4	21	21	Apply at first sign of egg hatch. Direct application at whorl for early season (1st generation). Apply as broadcast over row mid and late season.
	Methyl parathion PENNCAP-M – R	2-4 pts/ac	60	12	12	Broadcast application at 2 pts/ac for 1st generation by ground. Broadcast application at 2-4 pts/ac for 2nd generation by ground, depending on infestation.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>European corn borer</b> (post-emergence insecticides-cont.)	Permethrin PERMETHRIN 3.2EC – R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	POUNCE 3.2EC – R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	Permethrin POUNCE 1.5G – R	6.7-13.3 oz/ac	12	30	0 (green) 30 (fodder)	
	Spinosad TRACER	1-3 oz/ac	4	28	7	Apply at peak egg hatch of each generation.
	Zeta-cypermethrin MUSTANG MAX – R	2.72-4.0 oz/ac	12	30	60	
<b>Flea beetle</b> (post-emergence insecticides)	Bifenthrin CAPTURE 2EC – R	2.1-6.4 oz/ac	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	Carbaryl SEVIN 80S, 80WSP	1.25-2.5 lb/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	4F, XLR Plus	1-2 qts/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	Chlorpyrifos LORSBAN 4E – R	1-2 pts/acre	24	35	14	
	CHLORPYRIFOS 4E AG – R	1-2 pts/acre	24	35	14	
	Beta-cyfluthrin BAYTHROID XL – R	0.8-1.6 oz/ac	12	21	0 (green) 21 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC – R	1.0-1.5 oz/ac	12	21	12 (green) 21 (fodder)	For ground application, use at least 5 gal/ac of water.
	Esfenvalerate ASANA XL – R	5.8-9.6 oz/ac	12	21	-	
	Gamma-cyhalothrin PROAXIS – R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Lambda-cyhalothrin WARRIOR – R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Flea beetle</b> (post-emergence insecticides – cont.)	Methyl parathion PENNCAP-M - R	2-3 pts/ac	60	12	12	
	Permethrin PERMETHRIN 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	POUNCE 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	Zeta-cypermethrin MUSTANG MAX - R	2.72-4.0 oz/ac	12	30	60	
<b>Grasshoppers</b> (post-emergence insecticides)	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast in at least 10 gal/ac of water by ground.
	Chlorpyrifos LORSBAN 4E – R	0.5-1 pts/acre	24	35	14	
	CHLORPYRIFOS 4E AG - R	0.5-1 pts/acre	24	35	14	
	Beta-cyfluthrin BAYTHROID XL - R	2.1-2.8 oz/ac	12	21	0 (green) 21 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC - R	1.0-1.5 oz/ac	12	21	12 (green) 21 (fodder)	For ground application, use at least 5 gal/ac of water.
	Esfenvalerate ASANA XL - R	5.8-9.6 oz/ac	12	21	-	For 1st and 2nd instar nymph, use 3.9-5.8 oz/ac. Timing and good coverage is critical. Beyond 2nd instar, use 5.8-9.6 oz/ac
	Gamma-cyhalothrin PROAXIS - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Lambda-cyhalothrin WARRIOR R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Methyl parathion CHEMINOVA METHYL 4EC – R	1 pts/ac	60	12	12	
	PENNCAP-M - R	2-3 pts/ac	60	12	12	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Grasshoppers</b> (post-emergence insecticides-cont.)	Zeta-cypermethrin MUSTANG MAX - R	2.72-4.0 oz/ac	12	30	60	
<b>Lesser corn stalk borer</b> (seed insecticide)	Bt-resistant corn YIELDGARD CORN BORER YIELDGARD PLUS YIELDGARD VT TRIPLE  HERCULEX I HERCULEX XTRA	Insecticide in plant	-	-	-	See dealers for refuge requirements for Bt corn. The Bt gene is expressed in ear and green tissue of Yieldgard corn, but only in green tissue of Herculex corn.
Lesser corn stalk borer (at planting)	Chlorpyrifos LORSBAN 15G	8 oz/ 1000 ft of row	24	35	14	Apply in T-band.
	Gamma-cyhalothrin PROAXIS - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.
	Lambda-cyhalothrin WARRIOR - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.
	Terbufos COUNTER 15G - R	6 to 8 oz/1000 ft of row	48	60	30	Apply either in 7 inch band or in furrow. Suppression only.
	Tellluthrin FORCE 3G - R	4 to 5 oz/ 1000 ft of row	0	-	-	Apply as band or T-band.
<b>Lesser corn stalk borer</b> (post-emergence insecticides)	Chlorpyrifos LORSBAN 4E - R	1-2 pts/acre	24	35	14	Apply as broadcast spray in at least 15 gal/ac for ground equipment.
	CHLORPYRIFOS 4E AG - R	1-2 pts/acre	24	35	14	
	Lambda-cyhalothrin WARRIOR - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
<b>Wireworm</b> (seed treatment)	Clothianidin PONCHO 250	0.25 mg (ai)/seed	-	-	-	Seed treatment
	PONCHO 1250	1.25 mg (ai)/seed	-	-	-	
	Thiomethoxam CRUISER 5FS 250 CRUISER 5FS 1250	0.25 mg (ai)/seed 1.25 mg (ai)/seed	12 12	- -	- -	Seed treatment.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Wireworm</b> (at planting)	Bifenthrin CAPTURE 2EC - R	0.15-0.30 oz/ 1000 ft of row	12	30	30	Apply in 5-7 inch T-band. Or in furrow.
	Bifenthrin CAPTURE 1.15G - R	6.4-8 oz/ 1000 ft of row  3.2-8 oz/ 1000 ft of row	12	30	30	Apply in 5-7 inch T-band.  Apply in furrow.
	Carbofuran FURADAN 4F - R	2.5 oz/ 1000 ft of row	48	30	30	Apply in 7 inch T- band in in-furrow.
	Chlorpyrifos CHLORPYRIFOS 4E AG - R	4 pts/acre	24	35	14	Apply as a preplant broadcast spray in at least 10 gal spray/ac.
	LORSBAN 15G	8 oz/ 1000 ft of row	24	35	14	Apply in T-band or in furrow.
	Fipronil REGENT 4SC - R	0.24 oz/ 1000 ft of row	0	90	90	Apply in furrow using a direct injection liquid system.
	Gamma-cyhalothrin PROAXIS - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac. Suppression only.
	Lambda-cyhalothrin WARRIOR - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.
	Permethrin PERMETHRIN 3.2EC - R	0.3 oz/ 1000 ft of row	12	30	0 (green) 30 (fodder)	Apply in furrow, band or T-band using at least a 4 inch band.
	POUNCE 3.2EC - R	0.3 oz/1000 ft of row	12	30	0 (green) 30 (fodder)	
	Permethrin POUNCE 1.5G - R	8 oz/ 1000 ft of row	12	30	0 (green) 30 (fodder)	
	Phorate THIMET 20G - R	4.5-6 oz/ 1000 ft of row	48	30	30	Apply either in 7 inch band.
	Terbufos COUNTER 15G - R	6 to 8 oz/1000 ft of row	48	60	30	Apply either in 7 inch band or in furrow

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Wireworm</b> (at planting-cont.)	Telfluthrin FORCE 3G - R	4 to 5 oz/ 1000 ft of row	0	-	-	Apply as band or T-band.
<b>Seed corn maggot</b> (seed treatment)	Clothianidin PONCHO 250	0.25 mg (ai)/seed	-	-	-	Seed treatment
	PONCHO 1250	1.25 mg (ai)/seed	-	-	-	
	Thiomethoxam CRUISER 5FS 250	0.25 mg (ai)/seed	12	-	-	Seed treatment.
	CRUISER 5FS 1250	1.25 mg (ai)/seed	12	-	-	
<b>Seed corn maggot</b> (at planting)	Bifenthrin CAPTURE 2EC - R	0.15-0.30 oz/ 1000 ft of row	12	30	30	Apply in 5-7 inch T-band. Or in furrow.
	Bifenthrin CAPTURE 1.15G - R	6.4-8 oz/ 1000 ft of row	12	30	30	Apply in 5-7 inch T-band.  Apply in furrow.
		3.2-8 oz/ 1000 ft of row				
	Carbofuran FURADAN 4F - R	2.5 oz/ 1000 ft of row	48	30	30	Apply in 7 inch T- band in in-furrow.
	Chlorpyrifos CHLORPYRIFOS 4E AG - R	4 pts/acre	24	35	14	Apply as a preplant broadcast spray in at least 10 gal spray/ac.
	LORSBAN 15G	8 oz/ 1000 ft of row	24	35	14	Apply in T-band or in furrow.
	Fipronil REGENT 4SC - R	0.24 oz/ 1000 ft of row	0	90	90	Apply in furrow using a direct injection liquid system.
	Gamma-cyhalothrin PROAXIS - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.
	Lambda-cyhalothrin WARRIOR - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Seed corn maggot</b> (at planting-cont.)	Permethrin PERMETHRIN 3.2EC - R	0.3 oz/ 1000 ft of row	12	30	0 (green) 30 (fodder)	Apply in furrow, band or T-band using at least a 4 inch band.
	POUNCE 3.2EC - R	0.3 oz/ 1000 ft of row	12	30	0 (green) 30 (fodder)	
	Permethrin POUNCE 1.5G - R	8 oz/ 1000 ft of row	12	30	0 (green) 30 (fodder)	
	Phorate THIMET 20G - R	4.5-6 oz/ 1000 ft of row	48	30	30	Apply either in 7 inch band.
	Terbufos COUNTER 15G - R	6 to 8 oz/1000 ft of row	48	60	30	Apply either in 7 inch band or in furrow
	Tellluthrin FORCE 3G - R	4 to 5 oz/ 1000 ft of row	0	-	-	Apply as band or T-band.
<b>Southern corn rootworm</b> (seed treatment)	Bt-resistant corn YIELDGARD RW YIELDGARD PLUS YIELDGARD VT TRIPLE  HERCULEX RW HERCULEX XTRA	Insecticide in plant	-	-	-	See dealers for refuge requirements for Bt corn. Rootworms are not currently widespread pests in South Carolina, and RW Bt corn products should generally not be needed.
	Clothianidin PONCHO 1250	1.25 mg (ai)/seed	-	-	-	Seed treatment.
	Thiomethoxam CRUISER 5FS 1250	1.25 mg (ai)/seed	12	-	-	Seed treatment.
<b>Southern corn rootworm larvae</b> (at planting)	Bifenthrin CAPTURE 2EC - R	0.30 oz/ 1000 ft of row	12	30	30	Apply in 5-7 inch T-band. Or in furrow.
	Bifenthrin CAPTURE 1.15G - R	6.4-8 oz/ 1000 ft of row  3.2-8 oz/ 1000 ft of row	12	30	30	Apply in 5-7 inch T-band.  Apply in furrow.
	Carbofuran FURADAN 4F - R	2.5 oz/ 1000 ft of row	48	30	30	Apply in 7 inch T-band in in-furrow.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Southern corn rootworm larvae</b> (at planting-cont.)	Chlorpyrifos CHLORPYRIFOS 4E AG - R	6 pts/acre	24	35	14	Apply as a preplant broadcast spray in at least 10 gal spray/ac.
	LORSBAN 15G	8 oz/ 1000 ft of row	24	35	14	Apply in T-band or in furrow.
	Fipronil REGENT 4SC - R	0.24 oz/ 1000 ft of row	0	90	90	Apply in furrow using a direct injection liquid system.
	Gamma-cyhalothrin PROAXIS - R	0.66 oz/ 1000 ft of row	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.
	Lambda-cyhalothrin WARRIOR - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	Apply in 5-7 inch T-band, or in furrow. Use a minimum of 3 gal/ac.
	Phorate THIMET 20G - R	4.5-6 oz/ 1000 ft of row	48	30	30	Apply either in 7 inch band.
	Terbufos COUNTER 15G - R	6 to 8 oz/1000 ft of row	48	60	30	Apply either in 7 inch band or in furrow
	Telfluthrin FORCE 3G - R	4 to 5 oz/ 1000 ft of row	0	-	-	Apply as band or T-band.
<b>Southern corn rootworm beetles</b> (post-emergence insecticides)	Beta-cyfluthrin BAYTHROID XL - R	1.6-2.8 oz/ac	12	21	0 (green) 21 (fodder)	
	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast.
	Carbaryl SEVIN 80S, 80WSP	1.25-2.5 lb/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	4F, XLR Plus	1-2 qts/ac	12	14 (silage) 48 (ears)	14 (green) 48 (fodder)	
	Deltamethrin DELTA GOLD 1.5EC - R	1.5-1.9 oz/ac	12	21	12 (green) 21 (fodder)	Use at least 5 gal/ac for ground application.

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
rootworm beetles (post-emergence insecticides-cont.)	Esfenvalerate ASANA XL - R	5.8-9.6 oz/ac	12	21	-	Apply at first sign of silk feeding.
	Gamma-cyhalothrin PROAXIS - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Lambda-cyhalothrin WARRIOR - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Methomyl LANNATE LV - R	0.75-1.5 pts/ac	48	21 (ears)	3 (green) 21 (fodder)	
	LANNATE SP - R	0.25-0.5 lbs/ac	48	21 (ears)	3 (green) 21 (fodder)	
	Methyl parathion CHEMINOVA METHYL 4EC - R	0.5 pts/ac	60	12	12	For silk clipping, 1-2 pt/ac To prevent egg laying, 1.5-2 pt/ac
	PENNCAP-M - R	1-2 pts/ac	60	12	12	
	Permethrin PERMETHRIN 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	POUNCE 3.2EC - R	4-8 oz/ac	12	30	0 (green) 30 (fodder)	
	Zeta-cypermethrin MUSTANG MAX - R	3.2-4.0 oz/ac	12	30	60	Use at least 10 gal/ac for ground application.
Stink bugs (post-emergence insecticides)	Beta-cyfluthrin BAYTHROID XL - R	1.6-2.8 oz/ac	12	21	0 (green) 21 (fodder)	
	Bifenthrin CAPTURE 2EC - R	2.1-6.4 oz/ac	12	30	30	Apply broadcast.
	Deltamethrin DELTA GOLD 1.5EC - R	1.5-1.9 oz/ac	12	21	12 (green) 21 (fodder)	Use at least 5 gal/ac for ground application.
	Gamma-cyhalothrin PROAXIS - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	

Insect	Pesticide and Formulation	Rate	REI	PHI	PGI	COMMENTS
<b>Stink bugs</b> (post-emergence insecticides-cont)	Lambda-cyhalothrin WARRIOR - R	2.56-3.84 oz/ac	24	21	1 (green) 21 (fodder)	
	Methyl parathion CHEMINOVA METHYL 4EC - R	0.5 pts/ac	60	12	12	
	PENNCAP-M - R	1-3 pts/ac	60	12	12	
	Zeta-cypermethrin MUSTANG MAX - R	2.72-4.0 oz/ac	12	30	60	Use at least 10 gal/ac for ground application.

