

# 2017 Corn Insect Control Recommendations

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Insects rob Tennessee corn producers of about five percent of their potential yields on an annual basis. However, severe pest infestations can cause complete crop loss. While pesticides play an important role in crop protection, they should be used only when there is the potential for damage severe enough to cause economic loss. There are several cultural practices that can be used to reduce insect problems and minimize pesticide use. Scouting fields for insect infestations and monitoring pest populations with pheromone traps can provide an estimate of insect pressure in a field, and thus, help to guide any treatment decisions.

## Prevention

**Early Planting:** Planting field corn early, during the recommended planting window, will reduce the chances of crop damage from several insect species. For example, corn borers and fall armyworm are frequent pests of late-planted corn in Tennessee.

**Weed Control:** Certain insects carry (or transmit) virus diseases in corn. By controlling weeds such as Johnsongrass early in the season, the chances of leafhoppers and aphids transmitting viruses to corn are reduced. When planting corn in fields known to be heavily infested with Johnsongrass, choose a hybrid with good tolerance to the Maize Dwarf Mosaic Virus (MDMV) complex.

**Tillage:** No-tillage production can increase soil insect pest problems in many cases. Cutworms, wireworms, white grubs, seedcorn maggots and lesser cornstalk borers may build up in grass sod or where previous crop residue has been left on the soil surface at planting. Burndown with herbicides well in advance of planting (3-4 weeks) can reduce the risks of infestation. Look for white grubs, wireworms and any other insects that may be exposed during land preparation.

**Seed and At-Planting Insecticide Treatments:** Almost all seed corn comes treated with insecticide. These insecticides will control or suppress a number of seed and seedling insect pests. Insecticide seed treatments, specifically Poncho and Cruiser, have largely replaced the use of in-furrow or banded insecticides which were often applied at planting. However, at-planting insecticides can still be used for supplemental control of seed and seedling pests, or higher than standard insecticide seed treatment rates can sometimes be requested (see tables below).

Consider using higher labeled insecticide seed treatment rates or supplemental at-planting insecticides when:

- You have a known soil insect problem.
- Planting in a field that was fallow, pasture, sod, or a cover crop was planted and not terminated at least 3-4 weeks before planting.

## Relative Efficacy of Selected Insecticide Seed Treatments on Seed and Seedling Insect Pests

Trade Names	Active Ingredients and Rates	Billbugs	White grubs	Wireworms	Seedcorn maggot	Cutworms	Sugarcane beetle**	Stink bugs	Chinch bugs	Southern corn rootworm	Western corn rootworm
Poncho 250, Acceleron*	Clothianidin, 0.25 mg ai/kernel	P, NL	F	G	E	P - F	F	F	G	E	P, NL
Poncho 500, Acceleron with Poncho Votivo*	Clothianidin, 0.50 mg ai/kernel	F	E	G	E	P - F	G	F - G	G - E	E	P
Poncho 1250, Acceleron with Poncho/Votivo*	Clothianidin, 1.25 mg ai/kernel	G	E	E	E	F - G	G	G	E	E	G
Cruiser Maxx 250, PPST 250*	Thiamethoxam, 0.25 mg ai/kernel	P - F, NL	F	G	E	P	P	P	F	G - E, NL	P, NL
Cruiser Maxx 500, Avicta Complete Corn*	Thiamethoxam, 0.50 mg ai/kernel	P, NL	G	G	E	P	F?	F	F	E	P, NL
Cruiser Maxx 1250*	Thiamethoxam, 1.25 mg ai/kernel	G	E	E	E	F	F?	G	G	E	P
PPST 250 plus Lumivia	Thiamethoxam, 0.25 mg ai/kernel; chlorantraniliprole, 0.25 mg ai/kernel	E	G?	VG?	E	G?	P	P	F	G - E, NL	NL
Imidacloprid 5, Senator 600, Attendant 600	Imidacloprid, 0.60 mg ai/kernel (mid labeled rate)	P, NL	G	G	E	P, NL	P, NL	P, NL	F	G, NL	P, NL
Latitude*	Imidacloprid, 3.5 oz/100 lb seed	P, NL	F, NL	G	G	P, NL	P, NL	P, NL	F, NL	G, NL	P, NL
Concur*	Imidacloprid, 1.5 oz/42 lb seed	P, NL	F	G	G	P, NL	P, NL	P, NL	F, NL	G, NL	P, NL
Kernel Guard Supreme*, KickStart VP*	Permethrin, 1.5 oz/42 lb seed	P, NL	F, NL	P?	F	P, NL	P, NL	P, NL	P, NL	P?, NL	P, NL

E = excellent, G = good, F = fair, P = poor or no activity, ? = insufficient data to provide confident ranking, NL = pest not listed on label. Some ratings are based on incomplete data and are only meant to provide a general guideline of relative efficacy to the best knowledge of the author. Parts of this table are courtesy of Auburn University Publication IPM-0428 (Insect, Disease, Nematode, and Weed Control Recommendations).

\* Rates listed are formulated product amounts which may also include fungicidal and/or nematocidal ingredients. Clothianidin rates vary among Acceleron seed treatment packages.

\*\* Efficacy of seed treatments on sugarcane beetle is dependent upon the timing of infestation. Expect less control if infestations occur several weeks after emergence.

## Examples of At-Planting Treatments for Seed and Seedling Insect Pests

Insecticide (Trade Names)	Rates	Common Pests Controlled or Suppressed
chlorpyrifos (Lorsban 15G)*	8 - 12 oz/1000 row ft	Seedcorn maggot, Southern corn rootworm, Wireworms, White grubs, Cutworms
terbufos (Counter 20G)*	5 - 6 oz/1000 row ft	Seedcorn maggot, Southern corn rootworm, Wireworms, White grubs
cyfluthrin, tebufipirimphos (Aztec 2.1G)*	6.7 oz/1000 row ft	Seedcorn maggots, Southern corn rootworm, Wireworms, White grubs, Cutworms
tefluthrin (Force 3G)	4 - 5 oz/1000 row ft	Seedcorn maggots, Southern corn rootworm, Wireworms, White grubs, Cutworms
bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)**	0.15 - 0.3 oz/1000 row ft	Seedcorn maggots, Southern corn rootworm, Wireworms, White grubs
bifenthrin (Capture LFR 1.5)	0.2 - 0.78 oz/1000 row ft	Seedcorn maggots, Southern corn rootworm, Wireworms, White grubs, Cutworms, Sugarcane beetle
$\lambda$ -cyhalothrin (Ballista LFC 1)	0.66 oz/1000 row ft	Seedcorn maggots, Southern corn rootworm, Wireworms, White grubs, Cutworms

See the insecticide label for specific use instructions.

\* Caution: When using organophosphate insecticides such as Aztec, Counter or Lorsban with herbicides such as Accent, Callisto, Capreno, Halex GT, Steadfast, Option or Resolve, the possibility for plant injury exists. See herbicide label for restrictions.

\*\* Many other pyrethroid insecticides are labeled for at-planting control of cutworms and some other pests. These include Asana XL, Baythroid XL, Declare, Mustang Max and Pounce. Please see their labels for specific use instructions.

## Scouting Corn

**Seedling Corn:** Check twice weekly for cutworms, seedcorn maggots, armyworms, white grubs and other pests of seedling corn. Walk in a zigzag pattern through the field, checking at least 10 places in the field. Count the number of damaged plants in 10 feet of row. Check at least 100 plants. Look for silken tubes at the bases of plants for lesser corn stalk borers. Plants less than 12 inches tall are most susceptible to injury.

**Whorl-Feeding Insects:** Corn fields should be checked at least weekly until the crop is mature to determine the presence of insect pests or their damage. Walk in a U-shaped pattern over the field. Sample 10 plants in 10 locations on a weekly basis, but fewer plants can often be checked depending upon pest density. To check for live larvae, cut open at least two (or more) plants in each sample and record the number of larvae.

Look on the undersides of leaves for fall armyworm or corn borer egg masses. Southwestern and European corn borers lay their eggs in an overlapping pattern that appears like small fish scales. However, southwestern corn borer egg masses are usually smaller (2-8 eggs) than those of European corn borer (10 or more eggs). Fall armyworms lay their eggs in

clusters of 50 to several hundred on corn leaves and other vegetation.

**Silking/Tasseling Stages:** Examine plants for European and southwestern corn borers. Look for egg masses or small larvae feeding on the leaves. Corn borers lay their egg masses on the middle third of the plant near the ear zone. Check on the undersides of leaves for these egg masses. Small larvae may be found between ear husks or behind leaf collars. It is important to correctly identify larvae which are found because corn borers, corn earworm and fall armyworm may all be present. Treatment for insect pests during this stage will be more difficult. Insecticidal control for corn borers in tasseling corn is generally not as efficient as for plants in the whorl stage. Small larvae are more easily controlled than larger worms.

**Black Light and Pheromone Traps:** Black light traps can be used to monitor movement of adult insects. Pheromone (sex-attractant) traps are also used to monitor various insect flights, such as southwestern corn borers. Light or pheromone traps can be used to complement an effective scouting program. Traps can be used in each county or on individual farms to provide producers with advance warnings of insect infestations.

**Bt Corn Traits:** Bt corn for the control of corn borers is typically recommended on at least part of a grower's acreage and particularly in late planted fields. The table below is intended to provide growers with the information needed to help them select among the various Bt trait packages offered by seed distributors. Some trait packages may also express Bt proteins that control western and northern corn rootworm. These are uncommon pests in Tennessee, and Bt traits for

corn rootworm control are seldom needed. However, continuous corn production in the same field increases the likelihood of western corn rootworm infestations.

**Resistance management guidelines for Bt corn require a producer to plant a refuge of non-Bt corn.** Some newer trait packages require a smaller refuge of non-Bt corn. Please refer to the grower licensing agreement and refuge guidelines provided by the company for complete details.

### Relative Efficacy and Refuge Requirements of Selected, Commercially Available Bt Corn Products

Traits / Brands	Corn borers	Cutworm	Corn earworm	Fall armyworm	Western corn rootworm
Agrisure GT/CB/LL <sup>1</sup>	Excellent	Poor	Fair	Fair	None
Agrisure 3011 GT <sup>1</sup>	Excellent	Poor	Fair	Fair	Good
Agrisure Viptera 3110 <sup>2</sup>	Excellent	Good	Excellent	Excellent	None
Agrisure Viptera 3111 <sup>2</sup>	Excellent	Good	Excellent	Excellent	Good
Genuity VT Triple Pro (GENVT3P) <sup>2</sup>	Excellent	Poor	Good	Very Good	Excellent
Genuity VT Double Pro (GENVT2P) <sup>3</sup>	Excellent	Poor	Good	Very Good	None
Genuity SmartStax or SmartStax (GENSS or SSX) <sup>3</sup>	Excellent	Good	Good	Very Good	Excellent
Herculex I (HX1 or HR) <sup>1</sup>	Excellent	Good	Poor	Good	None
Optimum Intrasect (YHR) <sup>3</sup>	Excellent	Good	Fair	Very Good	None
Optimum Intrasect Xtra (YXR) <sup>2</sup>	Excellent	Good	Fair	Very Good	Excellent
Optimum Intrasect XTreme <sup>3</sup>	Excellent	Good	Fair	Very Good	Excellent
Optimum Leptra (VYHR) <sup>3</sup>	Excellent	Good	Excellent	Excellent	None
Optimum TRlsect <sup>1</sup>	Excellent	Good	Poor	Good	Excellent
YieldGard Corn Borer (YGCB) <sup>1</sup>	Excellent	Poor	Fair	Fair	None
YieldGard VT Triple (VT3) <sup>1</sup>	Excellent	Poor	Fair	Fair	Excellent
<b>Below are RIB Systems (Non-Bt Refuge Seed Included in Each Bag of Seed), For Non-Cotton Growing Areas Only *</b>					
Agrisure Viptera 3220 <sup>4</sup>	Excellent	Good	Excellent	Excellent	None
Agrisure Viptera 3122 <sup>4</sup>	Excellent	Good	Excellent	Excellent	Excellent
Genuity VT Double Pro RIB (GENVT2P RIB) <sup>4</sup>	Excellent	Poor	Good	Very Good	None
Genuity SmartStax or SmartStax RIB (GENSS or SSX) <sup>4</sup>	Excellent	Good	Good	Very Good	Excellent
Optimum AcreMax <sup>4</sup>	Excellent	Good	Fair	Very Good	None
Optimum AcreMax Xtra <sup>5</sup>	Excellent	Good	Fair	Very Good	Excellent
Optimum AcreMax XTreme <sup>4</sup>	Excellent	Good	Fair	Very Good	Excellent
PowerCore <sup>4</sup>	Excellent	Good	Good	Very Good	None

<sup>1</sup> 50% and 20% non-Bt corn refuge requirement in cotton and corn areas, respectively.

<sup>2</sup> 20% non-Bt corn refuge is required in cotton and corn areas.

<sup>3</sup> 20% and 5% refuge requirement in cotton and corn areas, respectively.

<sup>4</sup> 5% refuge in bag system in non-cotton areas; 20% corn borer refuge is required in cotton growing areas.

<sup>5</sup> 10% refuge in bag system in non-cotton areas; 20% corn borer refuge is required in cotton growing areas.

**\*Designated "Cotton Areas" in Tennessee:** The counties of Carroll, Chester, Crockett, Dyer, Fayette, Franklin, Gibson, Hardeman, Hardin, Haywood, Lake, Lauderdale, Lincoln, Madison, Obion, Rutherford, Shelby and Tipton. Refer to the licensing agreement for specific details on refuge requirements for selected Bt corn hybrids.

## When to Treat

### Seedling Plants

- **Seed or Root Feeding Insects:** Only at-planting insecticide treatments or seed treatments are effective in controlling infestations of seedcorn maggots, wireworms, white grubs and southern corn rootworms. Fields with prior infestations or no-till or minimum-till plantings are more likely to benefit from an at-planting insecticide for the prevention of these insect pests. This is strongly recommended for fields that were in pasture, CRP or fallow the previous year. Bt corn with rootworm resistance will provide effective control of western corn rootworm but has no effect on other seed or root feeding insects.
- **Armyworm (True):** Treatment may be necessary when one worm is found on 25 percent of the plants checked.
- **Fall Armyworm:** Treat when 50 percent of the plants have one or more larvae per plant.
- **Flea Beetles:** Treat when 75 percent of the plants show obvious scarring by beetles on stems and leaves.
- **Cutworms:** Treat when larvae are present and 5 percent or more of plants are damaged or when two larvae per 100 plants are present.
- **Sugarcane Beetles:** The sugarcane beetle is an occasional pest of seedling corn, feeding on roots and reducing plant stands. Although few insecticides are labeled for this pest in field corn, some at-planting insecticides and seed treatments can suppress damage caused by sugarcane beetles. Rescue treatments of chlorpyrifos (e.g., Lorsban) or pyrethroid insecticides may provide some control and are recommended when 10 percent of the stand is lost or badly damaged.
- **Stink Bugs:** The growing point of small plants can be damaged by stink bug feeding resulting in irregular growth. Treat corn less than 24 inches tall if 10 percent or more of plants are infested with stink bugs. Some at-planting insecticides and seed treatments may suppress stink bug feeding on seedling corn.

### Whorl-Stage or Larger Plants

- **Fall Armyworm and Corn Earworm:** These are two “budworms” commonly found in Tennessee field corn. Controls should be initiated when 75 percent of whorls have larvae present. Control of larvae in ears is not economically practical in field corn.
- **European Corn Borer:** Bt hybrids with corn borer protection provide a high level of control for this pest. For non-Bt corn, treat when 50 percent of the plants are infested or when one egg mass is found per plant. Use at least 20 gallons of water per acre for treating whorl-feeding insects. Direct the coarse spray down into the whorls for most effective control.
- **Southwestern Corn Borer:** Bt hybrids with corn borer protection provide a high level of control for this pest. For non-Bt corn, treat prior to tasseling when 5 percent or more of plants are found with egg masses or live larvae or 7 to 10 days after pheromone traps catch an average of 50 or more moths on a seven-day catch. Beginning at tasseling (VT) and through the milk stage (R3), treat when 10 percent or more of plants are found with egg masses or live larvae or 7 to 10 days after pheromone traps catch an average of 100 or more moths on a seven-day catch. Treatment is generally not recommended once the dough stage (R4) is reached.
- **Japanese Beetles:** Infestations are usually worse along field margins. Treat when three or more beetles are present per ear during the first week of silking.
- **Stink Bugs:** Before silking, small developing ears (1/2 – 3/4 inches long) can be damaged by stink bug feeding resulting in malformed ear development. Treat corn if 10 percent or more of plants are infested with stink bugs at or shortly before ear shoots appear (about V15). Treating for stink bugs is generally not recommended once silking has begun.

<b>Suggestions for Chemical Control of Corn Insects</b>			
<b>Insect</b>	<b>Insecticide (Trade Names)</b>	<b>Product Rate/Acre (Unless Specified)</b>	<b>Pre-Harvest Interval (Days) And Comments</b>
<b>Cutworms</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	2.1 - 6.4 oz	Foliar application, 30
	carbaryl (Sevin XLR Plus 4)	64 oz	0
	chlorpyrifos (Lorsban 4E, Nufos 4E, Lorsban Advanced 3.755)*	24 - 32 oz	21
	esfenvalerate (Asana XL 0.66E)	5.8 - 9.6 oz	21
	permethrin (Pounce 3.2E)	4 - 8 oz	30
	β-cyfluthrin (Baythroid XL 1)	0.8 - 1.6 oz	21
	γ-cyhalothrin (Declare 1.25)	0.77 - 1.28 oz	21
	λ-cyhalothrin (Karate 2.08, Warrior II)	0.96 - 1.6 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	1.28 - 2.8 oz	30 grain, 60 forage
<b>Fall Armyworm**</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	4 - 6.4 oz	30
	carbaryl (Sevin XLR Plus 4)	32 - 64 oz	0
	chlorpyrifos (Lorsban 4E, Nufos 4E, Lorsban Advanced 3.755)*	24 - 32 oz	21
	chlorantraniliprole (Prevathon 0.43 SC)	14 - 20 oz	14
	chlorantraniliprole, λ-cyhalothrin (Besiege)	6 - 10 oz	21
	methomyl (Lannate LV 2.4)*	12 - 16 oz	3
	methoxyfenozide (Intrepid 2F)	4 - 8 oz	21
	methyl parathion 4 (Methyl 4E)	8 oz	12
	permethrin (Pounce 3.2E)	4 - 8 oz	30
	spinetoram (Radiant SC 1)	3 - 6 oz	28 grain, 3 forage
	spinosad (Blackhawk 36% WDG)	1.7 - 3.3 oz	1 grain, 7 forage
	β-cyfluthrin (Baythroid XL 1)	2.8 oz	21
	γ-cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	λ-cyhalothrin (Karate 2.08, Warrior II)	1.28 - 1.92 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	3.2 - 4 oz	30 grain, 60 forage
<b>Corn Earworm</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	4 - 6.4 oz	30
	carbaryl (Sevin XLR Plus 4)	32 - 64 oz	0
	chlorantraniliprole (Prevathon 0.43 SC)	14 - 20 oz	14
	chlorantraniliprole, λ-cyhalothrin (Besiege)	6 - 10 oz	21
	esfenvalerate (Asana XL 0.66E)	5.8 - 9.6 oz	21
	permethrin (Pounce 3.2E)	4 - 8 oz	30

<b>Suggestions for Chemical Control of Corn Insects</b>			
	spinetoram (Radiant SC 1)	3 - 6 oz	28 grain, 3 forage
	spinosad (Blackhawk 36% WDG)	2.2 - 3.3 oz	1 grain, 7 forage
	$\beta$ -cyfluthrin (Baythroid XL 1)	1.6 - 2.8 oz	21
	$\gamma$ -cyhalothrin (Declare 1.25)	0.77 - 1.28 oz	21
	$\lambda$ -cyhalothrin (Karate 2.08, Warrior II)	0.96 - 1.6 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	2 - 4 oz	30 grain, 60 forage
<b>Southwestern and European Corn Borer</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	4 - 6.4 oz	30
	carbaryl (Sevin XLR Plus 4)	48 - 64 oz	0
	chlorantraniliprole (Prevathon 0.43 SC)	14 - 20 oz	14
	chlorantraniliprole, $\lambda$ -cyhalothrin (Besiege)	6 - 10 oz	21
	esfenvalerate (Asana XL 0.66E)	7.8 - 9.6 oz	21
	methoxyfenozide (Intrepid 2F)	4 - 8 oz	21
	permethrin (Pounce 3.2E)	4 - 8 oz	30
	spinetoram (Radiant SC 1)	3 - 6 oz	28 grain, 3 forage
	spinosad (Blackhawk 36% WDG)	2.2 - 3.3 oz	1 grain, 7 forage
	$\beta$ -cyfluthrin (Baythroid XL 1)	1.6 - 2.8 oz	21
	$\gamma$ -cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	$\lambda$ -cyhalothrin (Karate 2.08, Warrior II)	1.28 - 1.92 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	2.75 - 4 oz	30 grain, 60 forage
<b>Flea Beetles</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	3 - 6.4 oz	30
	carbaryl (Sevin XLR Plus 4)	32 - 64 oz	0
	chlorpyrifos (Lorsban 4E, Nufos 4E, Lorsban Advanced 3.755)*	32 oz	21
	esfenvalerate (Asana XL 0.66E)	5.8 - 9.6 oz	21
	permethrin (Pounce 3.2E)	4 - 8 oz	30
	$\beta$ -cyfluthrin (Baythroid XL 1)	0.8 - 1.6 oz	21
	$\gamma$ -cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	$\lambda$ -cyhalothrin (Karate 2.08, Warrior II)	1.28 - 1.92 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	2.75 - 4 oz	30 grain, 60 forage
<b>Stink Bugs</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	3 - 6.4 oz	30
	carbaryl (Sevin XLR Plus 4)	32 - 64 oz	0
	methyl parathion 4 (Methyl 4E)	8 - 16 oz	12
	$\beta$ -cyfluthrin (Baythroid XL 1)	1.6 - 2.8 oz	21

Suggestions for Chemical Control of Corn Insects			
	$\gamma$ -cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	$\lambda$ -cyhalothrin (Karate 2.08, Warrior II)	1.28 - 1.92 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	2.75 - 4 oz	30 grain, 60 forage
<b>Japanese Beetle</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	3 - 6.4 oz	30
	carbaryl (Sevin XLR Plus 4)	32 - 64 oz	0
	$\beta$ -cyfluthrin (Baythroid XL 1)	1.6 - 2.8 oz	21
	$\gamma$ -cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	$\lambda$ -cyhalothrin (Karate 2.08, Warrior II)	1.28 - 1.92 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	2.75 - 4 oz	30 grain, 60 forage
<b>Grasshoppers</b>	bifenthrin (Brigade 2E, Discipline 2E, Fanfare 2E)	3 - 6.4 oz	30
	chlorpyrifos (Lorsban 4E, Nufos 4E, Lorsban Advanced 3.755)*	8 - 16 oz	21
	esfenvalerate (Asana XL 0.66E)	5.8 - 9.6 oz	21
	$\beta$ -cyfluthrin (Baythroid XL 1)	2.1 - 2.8 oz	21
	$\gamma$ -cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	$\lambda$ -cyhalothrin (Karate 2.08, Warrior II)	1.28 - 1.92 oz	21
	Z-cypermethrin (Mustang Max 0.8E)	2.75 - 4 oz	30 grain, 60 forage

\* Caution: When using organophosphate insecticides such as Lorsban or Lannate with ALS herbicides such as Accent, Capreno, Halex GT, Steadfast, Lightning, Option or Resolve, the possibility for plant injury exists. See herbicide label for restrictions.

\*\* Insecticides recommended for fall armyworm should generally provide control of true armyworm (see label).

## Premixed Insecticide Products

The following products are available as premixes of two or more insecticides. The use of these premixes may provide suppression or control of multiple pests, and thus, are typically recommended when several pests are present at treatment level.

Trade Name (Insecticides)	Amount Product per Acre	Comments and Primary Target Pests (see label for other pests that may be controlled)
Besiege (chlorantraniliprole, $\lambda$ -cyhalothrin)	6 - 10 oz	Corn borers, corn earworm, stink bugs; Pre-harvest interval - 21 days
Cobalt Advanced (chlorpyrifos, $\gamma$ -cyhalothrin)	See label	Foliar applications: Corn borers, corn earworm, stink bugs; Pre-harvest interval - 21 days grain, 14 days forage
Hero 1.24 (bifenthrin, Z-cypermethrin)	4 - 10.3 oz	Corn borers, corn earworm, stink bugs, corn earworm; Pre-harvest interval - 30 days grain, 60 days forage
Stallion (chlorpyrifos, Z-cypermethrin)	See label	Foliar applications: Corn borers, corn earworm, stink bugs; Pre-harvest interval - 30 days grain, 60 days forage

\*Caution: When using Cobalt Advanced with ALS herbicides such as Accent, Capreno, Halex GT, Steadfast, Lightning, Option or Resolve, the possibility for plant injury exists. See herbicide label for restrictions.