



Current Report

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Management of Insect and Mite Pests in Corn

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Arthropod pests of corn are varied, and often difficult to manage. Many corn pest problems can be avoided developing an Integrated Pest Management (IPM) plan that includes using good cultural practices, such as selecting varieties adapted to Oklahoma growing conditions, planting at an optimal date, proper fertilization and irrigation, and using crop rotations. The application of insecticides, while sometimes necessary, should not be used as a substitute for good agronomic practices or as "preventative insurance" because it is rarely economically or environmentally justifiable.

The list of insecticides in this publication is not exhaustive, since many companies market products with different commercial names. Chemical recommendations made within this

publication were correct as of the "Modified Date". Always check the label that you possess for the most current rates and restrictions. For information on corn production, and variety selection, see:

AGEC-203 Estimating Yield and Economic Returns from Replanting Corn
CR-2105 National Corn Handbook: Aflatoxins and other Mycotoxins
EPP-7160 Field Key to Larvae in Corn
EPP-7196 Grasshopper Management in Rangeland, Pastures, and Crops
PT-2006 and PT-2007 Oklahoma Panhandle Corn Performance Trials

Management of Insect and Mite Pests in Sorghum

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Armyworm 1 to 1.5 inches. Dark green or brown caterpillar with 5 stripes along a smooth body. Head with honeycomb-like markings.</p> <p>Damage: Armyworms typically move in corn fields in April-May. Feed on seedling leaves.</p> <p>Threshold: Treat if 25% of seedling corn plants are damaged.</p>	Ambush/Pounce 25W (3) (permethrin)	6.4 to 12.8 oz (0.1 to 0.2 lb ai/a)	30 day waiting period
	Asana XL (3)	5.8 to 9.6 fl oz	21 day waiting period
	Bacillus thuringiensis (11) (Biobit, Condor, Dipel, Lepinox, Javelin, Xentari)	See product label for specific rates	Check label for waiting periods
	Baythroid XL (3)	1.6 to 2.8 fl oz	21 day wait for grain or fodder, 0 day for green forage
	Cobalt (1B, 3)	13 to 26 fl oz	21 day wait for harvest, 14 days for grazing or silage
	Delta Gold (3)	1.5 to 1.9 fl oz	21 day wait for harvest, 12 days for grazing or silage
	Hero (3)	4 to 10.3 fl oz	30 day wait for grain, 60 days for silage
	Intrepid 2F (18)	4 to 8 fl oz	0 day wait for green forage, 21 days for harvest or fodder
	Karate w Zeon (3) (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)	21 day waiting period
	Lannate LV (1A) (methomyl)	0.75 to 1.5 pt (0.225 to 0.45 lb ai/a)	3 day wait for forage, 21 days for harvest or grazing
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1.0 lb ai/a)	35 day waiting period
	Mustang MAX EC (3)	3.2 to 4.0 fl oz	30 day wait for grain, 60 days for silage
	Methyl parathion 4E (1B)	0.5 pt	12 day waiting period
	PennCap-M (1B)	2 to 3 pt	12 day waiting period
	Proaxis 0.5 SC (3)	2.56 to 3.84 fl oz	21 day waiting period
Sevin XLR (1A) (carbaryl)	1 to 2 qt (1.5 to 2 lb ai/a)	0 day waiting period	
Tracer (5)	1 to 3 fl oz	7 day wait for grazing, 28 days for harvest	

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Chinch bug Nymphs are bright red with white band across back. Adults 1/2 inch, black with white “hour glass” shape on back</p> <p>Damage: Adults may fly into field, early (March-April) or adults and nymphs move in to corn from maturing wheat fields (April-May). Remove plant juices, cause stunting, wilting, and reddening of leaves.</p> <p>Threshold: Plants less than 6 inches: 2 or more chinch bugs on 20% of plants</p> <p>Plants 6 to 18 inches: 10 or more chinch bugs on 75% of plants.</p>	Seed Treatments		
	Cruiser 5FS (4A)	0.56 to 3.61 fl oz /80,000 seed	Do not feed treated seed. Generally must order through a seed dealer.
	Poncho 600 (4A)	1.13 fl oz/80,000 seed	Do not feed treated seed. See label for mixing and handling instructions. Follow all label restrictions.
	Planting Time Applications		
	Force CS (3)	0.46 to 0.57 fl oz/1000 ft row	T-band application. Read label carefully for restrictions.
	Regent (2B)	0.24 fl oz/1000 ft-row	90 day wait for harvest.
	Post-emergence Sprays		
	Asana XL (3)	5.8 to 9.6 fl oz	21 day waiting period
	Baythroid XL (3)	1.6 to 2.8 fl oz	21 day waiting period for grain or fodder, 0 day for green forage
	Capture 2EC (3) (bifenthrin)	2.1 to 6.4 fl oz (0.033 to 0.1 lb ai/a)	30 day waiting period
	Cobalt (1B, 3)	19 to 38 fl oz	21 day wait for harvest, 14 days for grazing or silage
	Delta Gold (3)	1.5 to 2.4 fl oz	21 day wait for harvest, 12 days for grazing or silage
	Hero (3)	4 to 10.3 fl oz	30 day wait for grain, 60 days for silage
	Karate w Zeon (3) (lambda cyhalothrin)	1.92 fl oz (0.03 lb ai/a)	21 day waiting period
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1.0 lb ai/a)	35 day waiting period
Mustang MAX EC (3)	3.2 to 4.0 fl oz	30 day wait for grain, 60 days for silage	
Methyl parathion 4E (1B)	0.5 pt	12 day waiting period	
Proaxis 0.5 CS (3)	3.84 fl oz	21 day waiting period	
Sevin XLR (1A)	1 to 2 qt	48 day waiting period for harvest, 14 days for grazing	

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Corn Earworm Striped robust caterpillars that range in color from green to pink to brown to black.</p> <p>Damage: Caterpillars injure ear tips, feed in whorls. Feeding damage may increase potential for aflatoxins in grain.</p> <p>Threshold: Not practical to control in field corn.</p>	NA	NA	
<p>Corn rootworm (adults) Small beetle, with black stripes, 12 spots, or green</p> <p>Damage: Feed on silks. Heavy populations may interfere with pollination.</p> <p>Threshold: Treat if beetles are abundant (over 5 per plant and silks are being severely clipped).</p>	<p>Ambush/ Pounce 25W (3)</p> <p>Asana XL (3)</p> <p>Baythroid XL (3)</p> <p>Capture 2EC (3) (bifenthrin)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Dimethoate 4E (1B)</p> <p>Hero (3)</p> <p>Karate w Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Methyl parathion 4E (1B)</p> <p>Mustang MAX (3)</p> <p>PennCap-M (1B)</p> <p>Proaxis 0.5 CS (3)</p> <p>Sevin XLR (1A) (carbaryl)</p>	<p>6.4 to 12.8 oz</p> <p>5.8 to 9.6 fl oz</p> <p>1.6 to 2.8 fl oz</p> <p>2.1 to 6.4 fl oz (0.033 to 0.1 lb ai/a)</p> <p>13 to 26 fl oz</p> <p>1.5 to 2.4 fl oz</p> <p>0.66 to 1 pt</p> <p>4 to 10.3 fl oz</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>1 to 2 pt (0.5 to 1 lb ai/a)</p> <p>0.5 pt</p> <p>2.72 to 4.0 fl oz</p> <p>1 to 2 pt</p> <p>2.56 to 3.84 fl oz</p> <p>1 to 2 qt (0.5 to 1 lb ai/a)</p>	<p>30 day waiting period</p> <p>21 day waiting period</p> <p>21 day wait for grain or fodder, 0 day for green forage</p> <p>Use higher rates (greater than 5.1 fl oz) in areas where spider mites are a problem.</p> <p>21 day wait for harvest, 14 days for grazing or silage</p> <p>21 day wait for harvest, 12 days for grazing or silage</p> <p>14 day waiting period</p> <p>30 day wait for grain, 60 days for forage</p> <p>21 day waiting period</p> <p>35 day waiting period</p> <p>12 day waiting period</p> <p>30 day wait for grain, 60 days for forage</p> <p>12 day waiting period</p> <p>21 day waiting period</p> <p>48 day waiting period for harvest, 14 day for grazing</p>
<p>Corn rootworm (larvae) Thin, white worm-like larva that lives in soil. Damage is likely to occur in early part of growing season (before June 15).</p>	<p>Seed Treatments</p> <p>YieldGard Rootworm Seed</p> <p>Herculex Rootworm Seed</p> <p>Cruiser 5FS (4A)</p>	<p>Transgenic seed</p> <p>Transgenic seed</p> <p>5.6 fl oz/80,000 seed</p>	<p>Follow company's guidelines for providing refugia as a resistance management strategy.</p> <p>Do not use treated seed for feed, food, or oil processing</p>

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments	
<p>Corn rootworm (larvae) (cont.)</p> <p>Damage: Feed on roots, causing lodged plants and plants that “goose-neck.” Root tissue and brace roots are often chewed back to the base of the stalk.</p> <p>Threshold: Consider a planting-time insecticide, or a seed variety that contains “rootworm” protection, such as YieldGard Rootworm™ if planting continuous corn.</p>	Poncho 600 (4A)	5.64 fl oz/80,000 seed		
	Force ST (3)	3 to 4 oz/cwt seed	Do not use treated seed for feed, food, or oil processing. Do not apply Force 3G if Force ST was used.	
	Planting Time			
	Aztec 2.1 G (1B, 3)	6.7 fl oz/1000 ft-row	Follow manufactures’ guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested.	
	Capture 1.5G (3)	3.2 to 8 oz/1000 ft-row		
	Capture LFR (3)	0.39 to 0.49 fl oz/1000 ft-row	Read label carefully for application directions.	
	Capture 2EC (3)	0.3 fl oz/1000 ft-row		
	Counter 15G (1B)	0.3 fl oz/1000 ft-row		
	Force 3G (3)	6 to 8 oz/1000 ft-row		
	Force CS (3)	0.46 to 0.57 fl oz/1000 ft row		
	Fortress 2.5G (1B)	4 to 5 oz/1000 ft-row		
	Furadan 4F (1A)	6 to 9 oz/1000 ft-row		
	Lorsban 15 G (1B)	2.5 fl oz/1000 ft-row		
	Proaxis 0.5 CS (3)	8 oz/1000 ft-row		
	Regent 4SC (2B)	0.66 fl oz/1000 ft-row		
	Thimet 20G (1B)	0.24 oz/1000 ft-row		
	Post Seedling-Emergence Application			Follow label directions for at-cultivation applications. Do not make application if planting time application was made.
	Counter 15G (1B)	8 oz/1000 ft-row		
	Cobalt (1B, 3)	38 to 42 fl oz		
	Force 3G (3)	4 to 5 oz/1000 ft-row		
Fortress 2.5G (1B)	6.0 to 7.5 oz/1000 ft-row			
Furadan 4F (1A)	2.5 fl oz/1000 ft-row			
Lorsban 15 G (1B)	8 oz/1000 ft-row			
Thimet 20G (1B)	4.5 to 6 oz/1000 ft row			

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Cutworms (black, granulate, sandhill) Striped or solid colored, robust caterpillars that “roll” up when disturbed, and prefer to live under ground.</p> <p>Damage: Cutworms generally feed at night, and live under the soil during the day. Plants will be cut at or slightly above the soil level, causing stand reductions.</p> <p>Threshold: Scout fields at seedling emergence. Treat when worms are less than 1/2 inch long, and skips are noticed.</p>	Seed Treatments		
	“Herculex” varieties	Transgenic seed	Follow company’s guidelines for providing refugia as a resistance management strategy
	Ambush/ Pounce 25W (3)	12.8 oz	30 day waiting period
	Asana XL (3)	5.8 to 9.6 fl oz	21 day waiting period
	Baythroid XL (3)	0.8 to 1.6 fl oz	21 day wait for grain or fodder, 0 days for green forage
	Capture (3) (bifenthrin)	2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/a)	30 day waiting period.
	Capture LFR (3)	0.2 to 0.39 fl oz/1000 linear ft-row banded or 3.4 to 6.8 fl oz/a as a foliar application	Follow label directions. Do not apply to soil with greater than 30% crop residue, do not apply more than 0.1 lb active per acre per season as an at-plant application.
	Cobalt (1B, 3)	(foliar) 13 to 38 fl oz (band) 1.89 fl oz/1000 ft row	21 day wait for harvest, 14 days for grazing or silage
	Delta Gold (3)	1.0 to 1.5 fl oz	21 day wait for harvest, 12 days for grazing or silage
	Hero (3)	2.6 to 6.1 fl oz	30 day waiting period for grain and silage, 60 day for grazing
	Karate w Zeon (3) (lambda cyhalothrin)	0.96 to 1.56 fl oz (0.015 to 0.025 lb ai/a)	21 day waiting period
Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1.0 lb ai/a)	35 day waiting period	
Mustang MAX EC (3)	1.28 to 2.8 fl oz	30 day waiting period for grain and silage, 60 day for grazing	
Proaxis 0.5 CS (3)	1.92 to 3.2 fl oz	21 day waiting period	
Always follow label directions, as methods and timing of applications may vary			
<p>Fall armyworm Large, striped, nonbristled worm up to 1.5 inches. Has a light colored, inverted “Y” on head. June-August</p> <p>Damage: Larvae cut holes in leaves at whorl stage, heaviest damage occurs on late corn when caterpillars tunnel into ear or ear shank.</p>	Seed Treatments		
	“YieldGard” varieties	Transgenic seed	Follow company’s guidelines for providing refugia as a resistance management strategy
	“Herculex” varieties	Transgenic seed	
	Baythroid XL (3)	2.8 fl oz	21 day wait for grain or fodder, 0 days for green forage
	Capture 2EC (3) (bifenthrin)	2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/a)	30 day waiting period
Cobalt (1B, 3)	13 to 26 fl oz	21 day waiting period for harvest, 14 days for grazing or silage	
Delta Gold (3)	1.5 to 2.4 fl oz	21 day wait for harvest, 12 days for grazing or silage	

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
Fall armyworm (cont.) Threshold: No detailed threshold is suggested.	Hero (3)	4 to 10.3 fl oz	30 day wait for grain and silage, 60 days for grazing
	Lannate LV (1A) (methomyl)	0.75 to 1.5 pt 0.25 to 0.5 lb ai/a	3 day wait for forage, 21 days for harvest or grazing
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1.0 lb ai/a)	35 day waiting period
	Methyl parathion 4E (1B)	0.5 pt	12 day waiting period
	Mustang MAX EC (3)	3.2 to 4.0 fl oz	30 day wait for grain and silage, 60 days for grazing
	Proaxis 0.5 CS (3)	2.56 to 3.84 fl oz	21 day waiting period
	Tracer (5)	1 to 3 fl oz	7 day wait for grazing, 28 days for harvest
Flea beetles Shiny, black beetle about 1/16 inch that jumps when disturbed. Damage: Early spring-summer. Plant tissue is scraped from leaf, giving it a drought stress appearance. Can cause delayed development is cool growing conditions Threshold: Apply to small plants when beetles first appear and some plants are being killed.	Ambush/ Pounce 25W (3)	6.4 to 12.8 oz	30 day waiting period
	Asana XL (3)	5.8 to 9.6 fl oz	21 day waiting period
	Baythroid XL (3)	0.8 to 1.6 fl oz	21 day wait for grain or fodder, 0 days for green forage
	Capture 2EC (3) (bifenthrin)	2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/a)	30 day waiting period
	Cobalt (1B, 3)	13 to 26 fl oz	21 day waiting period for harvest, 14 days for grazing or silage
	Delta Gold (3)	1.0 to 1.5 fl oz	35 day waiting period
	Hero (3)	4 to 10.3 fl oz	30 day wait for grain and silage, 60 days for grazing
	Karate w Zeon (3) (lambda cyhalothrin)	1.26 to 1.92 fl oz (0.02 to 0.03 lb ai/a)	21 day wait for silage, 3 days for grazing
	Lannate LV (1A) (methomyl)	0.75 to 1.5 pt 0.25 to 0.5 lb ai/a	3 day wait for forage, 21 days for harvest or grazing
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1.0 lb ai/a)	35 day waiting period
	Mustang MAX EC (3)	2.72 to 4.0 fl oz	30 day wait for grain and silage, 60 days for grazing
	PennCap-M (1B)	2 to 3 pt	12 day waiting period
	Proaxis 0.5 CS (3)	2.56 to 3.84 fl oz	21 day waiting period
	Sevin XLR (1A)	1 to 2 qt	48 day wait for harvest, 14 days for grazing

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Grasshopper 1 to 2 inches, outer wings leathery, inner wings clear or colored. Enlarged hind legs designed for jumping.</p> <p>Damage: Chew leaves, leaving ragged edges, or completely chewing leaf blade. Damage emerging seed heads, causing yield loss.</p> <p>Threshold: Consider treating if numbers reach 8 to 14 in the field, or 20 to 40 in field margins.</p> <p>See F-7196, Grasshopper Management in Rangeland, Pastures, and Crops for more information.</p>	<p>Asana XL (3)</p> <p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Furadan 4F, LFR (1A)</p> <p>Karate w Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Methyl parathion 4E (1B)</p> <p>Mustang MAX EC (3)</p> <p>Proaxis 0.5 CS (3)</p> <p>Sevin XLR (1A)</p>	<p>2.9 to 5.8 fl oz</p> <p>2.1 to 2.8 fl oz</p> <p>7 to 13 fl oz</p> <p>1 to 1.5 fl oz</p> <p>0.25 to 0.5 pt</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>1 to 2 pt (0.5 to 1 lb ai/a)</p> <p>1 pt</p> <p>2.72 to 4.0 fl oz</p> <p>1.92 to 3.2 fl oz</p> <p>0.5 to 1.5 qt</p>	<p>21 day waiting period</p> <p>21 day wait for grain or fodder, 0 day for green forage</p> <p>21 day waiting period for harvest, 14 days for grazing or silage</p> <p>21 day wait for harvest; 12 days for grazing or forage</p> <p>30 day waiting period</p> <p>21 day waiting period</p> <p>35 day waiting period</p> <p>12 day waiting period</p> <p>30 day waiting period for grain and silage, 60 day for grazing</p> <p>21 day waiting period</p> <p>48 day wait for harvest: 14 days for grazing.</p>
<p>Mites Small, less than 1/100 inches. Cause brown stippling of leaves. Banks grass and two spotted spidermites are most common pests.</p> <p>Damage: Causes stippling of leaves, severe infestations can kill leaves. Infestations generally start at lower leaves and move upward.</p> <p>Threshold: Treat when there is visible damage on the lower third of the plant and small colonies are visible on the middle third of the plant, and the corn has not yet reached the hard dough stage.</p>	<p>Capture 2EC (3) (bifenthrin)</p> <p>Comite II (20)</p> <p>Dimethoate 4E (1B)</p> <p>Hero (3)</p> <p>Oberon 2 SC (23)</p>	<p>5.12 to 6.4 fl oz (0.08 to 0.1 lb ai/A)</p> <p>2.25 to 3.32 pt</p> <p>0.66 to 1 pt</p> <p>10.3 fl oz</p> <p>5.7 to 8.5 fl oz</p>	<p>30 day waiting period</p> <p>30 day waiting period. Apply when mite colonies first form, before leaves are killed.</p> <p>14 day waiting period.</p> <p>35 day waiting period</p> <p>30 day wait for harvest, 5 days for forage or silage.</p> <p>NOTE: Treatments at hard-dough stage or later are not cost effective. When heavy infestations occur, erratic control will usually be the rule. Thorough coverage is important, higher volumes (2 to 3 gallons or more per acre) when applied by aircraft increase the effectiveness of the spray.</p>

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Seedcorn maggot, Seed corn beetle Maggots are yellowish-white, tapered larvae about 1/4 inches. Beetles are about 3/8 inches, with two black stripes on brown wing covers.</p> <p>Damage: Damage occurs in spring, especially if soils are cool and moist and seeds are not germinating rapidly. Damage is noticed as skips in plant stands. Seed will be hollowed out.</p> <p>Threshold: Replanting is the only recourse if damage has already occurred. Use a planting-time treatment if fields have a history. No-till fields may be more vulnerable to attack.</p>	<p>Seed Treatments</p> <p>Cruiser 5FS (4A)</p> <p>Poncho 600 (4A)</p> <p>Force ST (3)</p> <p>Regent (2B)</p> <p>Planting Time</p> <p>Aztec 2.1 G (1B,3)</p> <p>Capture 1.5G (3)</p> <p>Capture LFR (3)</p> <p>Counter 15G (1B)</p> <p>Furadan 4F, LFR (1A)</p> <p>Lorsban 15G (1B)</p> <p>Force 3G (3)</p> <p>Fortress 2.5G (1B)</p>	<p>0.56 to 3.61 fl oz /80,000 seed</p> <p>1.13 fl oz/80,000 seed</p> <p>3 to 4 oz/cwt seed</p> <p>2 fl oz/cwt seed</p> <p>6.7 fl oz/1000 ft-row</p> <p>3.2 to 8 oz/1000 ft row</p> <p>0.2 to 0.39 fl oz/1000 ft-row</p> <p>6 to 8 oz/1000 ft-row</p> <p>2.5 oz/1000 ft-row</p> <p>8 to 12 oz/1000 ft-row</p> <p>4 to 5 oz/1000 ft-row</p> <p>6.0 to 7.5 oz/1000 ft-row</p>	<p>Follow manufactures' guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested.</p>
<p>Southwestern corn borer Full grown caterpillars are white with prominent dark spots on body. Eggs are laid in masses of 12 to 30. They overlap like egg scales. Eggs are white when first laid, then red bands appear before they hatch.</p> <p>Damage: First generation causes "dead heart" in plants. Second generation tunnels throughout stalk. May girdle mature stalks causing lodging.</p> <p>Threshold: Threshold based on egg masses. Treat if 25% of plants have egg masses or newly hatched larvae. A repeat application may be needed in 7 to 10 days.</p>	<p>Seed Treatments</p> <p>"YieldGard" varieties "Herculex" varieties</p> <p>Post-emergence Sprays</p> <p>Baythroid XL</p> <p>Capture 2EC (3) (bifenthrin)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Furadan 4F, LFR (1A)</p> <p>Intrepid (1B)</p> <p>Karate w Zeon (lambda cyhalothrin)</p> <p>Hero (3)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p>	<p>Transgenic seed Transgenic seed</p> <p>1.6 to 2.8 fl oz</p> <p>2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/a)</p> <p>19 to 38 fl oz</p> <p>1.5 to 1.9 fl oz</p> <p>1 to 2 pt (foliar)</p> <p>4 to 8 fl oz</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>4 to 10.3 fl oz</p> <p>1.5 to 2 pt (0.75 to 1 lb ai/a)</p>	<p>Follow company's guidelines for providing refugia as a resistance management strategy.</p> <p>21 day wait for grain or fodder, 0 days for green forage</p> <p>30 day waiting period</p> <p>21 day waiting period for harvest, 14 days for grazing or silage</p> <p>21 day wait for harvest; 12 days for forage or grazing</p> <p>30 day waiting period</p> <p>21 day waiting period</p> <p>35 day waiting period</p> <p>30 day waiting period for grain and silage, 60 day for grazing</p> <p>30 day waiting period for grain and silage</p>

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
Southwestern corn borer (cont.)	Mustang MAX EC (3)	2.72 to 4.0 fl oz	30 day waiting period for grain and silage, 60 day for grazing
	Proaxis 0.5 CS (3)	2.56 to 3.84 fl oz	21 day waiting period
	Tracer (5)	2 to 3 fl oz	7 day wait for grazing, 28 days for harvest
Western bean cutworm Larvae are dark brown with faint diamond-shaped markings on their backs. Measure 1.5 inches. Eggs are deposited in masses of 4 to 200 on upper surface of leaves. Damage: Larvae feed on developing tassel, or silk. They feed on developing kernels once the ear has formed. Threshold: Treat of eight percent or more of the plants have egg masses or small larvae in the tassels and the crop is 95% tasseled.	Seed Treatments		
	"Herculex" varieties		Follow company's guidelines for providing refugia as a resistance management strategy.
	Ambush/ Pounce 25W (3)	3.2 to 6.4 oz	30 day waiting period
	Asana XL (3)	2.9 to 5.8 fl oz	21 day waiting period
	Baythroid 2 (3)	1.6 to 2.8 fl oz	21 day waiting period
	Capture 2EC (3) (bifenthrin)	2.6 to 6.4 fl oz (0.033 to 0.1 lb ai/a)	30 day waiting period.
	Cobalt (1B, 3)	13 to 26 fl oz	21 day wait for harvest, 14 days for grazing or silage
	Intrepid (18)	4 to 8 fl oz	21 day wait for harvest
	Karate w Zeon (3) (lambda cyhalothrin)	0.96 to 1.6 fl oz (0.015 to 0.025 lb ai/a)	21 day wait for harvest or grazing
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1 lb ai/a)	35 day wait for harvest, do not graze or use for forage
	Methyl parathion 4 E (1B)	0.5 pt	12 day waiting period
	Mustang MAX EC (3)	1.76 to 4.0 fl oz	30 day waiting period for grain and silage, 60 day for grazing
	PennCap-M (1B)	2 to 4 pt	12 day waiting period
	Proaxis 0.5 CS (3)	1.92 to 3.2 fl oz	21 day waiting period
	Sevin XLR (1A)	2 qt	48 day wait for harvest: 14 days for grazing.
Tracer (5)	2 to 3 fl oz	7 day wait for grazing, 28 days for harvest	

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>White grub Large, “C” shaped grub with a white body and a brown head.</p> <p>Damage: Feed on developing roots, cause slow growth, stunting, and stand loss.</p> <p>Threshold: No reliable thresholds are available. Consider using an at-planting treatment for “suppression” if field has a history of grub problems.</p>	Seed Treatments		
	Cruiser 5FS (4A)	0.56 to 3.61 fl oz /80,000 seed	Do not use treated seed for feed, food, or oil processing
	Poncho 600 (4A)	1.13 fl oz/80,000 seed	Do not use treated seed for feed, food, or oil processing
	Force ST (3)	3 to 4 oz/cwt seed	Do not use Force 3G if Force ST was used
	Regent (2B)	2 fl oz/cwt seed	Do not use treated seed for feed, food, or oil processing
	Planting Time		
	Aztec 2.1 G (1B,3)	6.7 fl oz/1000 ft-row	Follow manufactures’ guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested.
	Capture 1.5G (3)	3.2 to 8 oz/1000 ft row	
	Capture LFR (3)	0.2 to 0.39 fl oz/1000 ft-row	
	Counter 15G (1B)	6 to 8 oz/1000 ft-row	
	Lorsban 15G (1B)	8 to 12 oz/1000 ft-row	
Force 3G (3)	4 to 5 oz/1000 ft-row		
Fortress 2.5G (1B)	6.0 to 7.5 oz/1000 ft-row		
Proaxis 0.5 CS (3)	0.66 fl oz/1000 ft-row		
Regent 4SC (2B)	0.24 oz/1000 ft-row		
<p>Wireworm Hard-shelled, smooth, cylindrical, yellowish to brown worms. 2 to 6 year life cycle. More common in corn planted into a sod or grass pasture.</p> <p>Damage: Feed on seed, seedling. Cause stunting and stand loss.</p> <p>Threshold: No reliable thresholds are available. Treat if field has a history of problems. Wireworms may be more of a problem in no-till or minimum till fields.</p>	Seed Treatments		
	Cruiser 5FS (4A)	0.56 to 3.61 fl oz /80,000 seed	Do not use treated seed for feed, food, or oil processing.
	Poncho 600 (4A)	1.13 fl oz/80,000 seed	Do not use treated seed for feed, food, or oil processing
	Force ST (3)	3 to 4 oz/cwt seed	Do not use Force 3G if Force ST was used
	Regent (2B)	1 to 2 fl oz/cwt seed	Do not use treated seed for feed, food, or oil processing
	Planting Time		
	Aztec 2.1 G (1B,3)	6.7 fl oz/1000 ft-row	Follow manufactures’ guidelines for rates, application methods grazing and crop rotation restrictions. Rotation of insecticides during successive years is suggested.
	Capture 1.5 G (3)	3.2 to 8 oz/1000 ft-row	
	Capture LFR (3)	0.2 to 0.39 fl oz/1000 ft-row	
	Counter 15G (1B)	6 to 8 oz/1000 ft-row	
	Force 3G (3)	4 to 5 oz/1000 ft-row	
Fortress 2.5G	6.0 to 7.5 oz/1000 ft-row		
Lorsban 15 G(1B)	8 oz/1000 ft-row		
Proaxis 0.5 CS (3)	0.66 fl oz/1000 ft-row		
Regent 4SC (2B)	0.24 oz/1000 ft-row		

Pre-harvest Intervals and grazing restrictions

Ambush ^r /Pounce ^r	30 day PHI for grazing or harvest
Asana ^r XL	21 day PHI for harvest or grazing
Aztec ^r 2.1G	Do not exceed 7.3 lb per acre per crop season
Baythroid ^r XL	21 day waiting period for grain or fodder, 0 days for green forage
Capture ^r 2EC	30 day PHI for harvest or grazing
Cobalt ^r	21 day waiting period for harvest, 14 days for grazing
Comite II	Apply in a minimum of 20 gal of water/acre ground, 5 gal by air
Counter ^r 15G	Check label for precautions regarding application of Counter 15G and its interaction with ALS inhibiting herbicides.
Cruiser 5FS	no grazing restriction
Delta Gold ^r	21 day PHI for harvest, 12 day for forage or grazing
Dimethoate ^r	Apply by aircraft. 14 day PHI for harvest or grazing
Force ^r 3G	30 day crop rotation restriction
Fortress ^r 2.5 G	30 day crop rotation restriction
Furadan ^r 4F, LFR	30 day PHI for harvest or grazing
Hero ^r	30 day PHI for harvest, 60 days for grazing
Intrepid	21 day PHI for harvest, 0 days for green forage
Karate ^r w Zeon	21 day PHI for harvest
Lorsban ^r 4E	35 day PHI for harvest, do not graze or use for silage
Malathion	5 day PHI for harvest or grazing
Methyl parathion ^r	12 day PHI for harvest or grazing
Methomyl ^r	3 days for forage, 21 day PHI for harvest or grazing
Mustang ^r Max	30 day PHI for harvest, 60 days for grazing
Poncho	45 day PHI for harvest or grazing
Proaxis ^r	21 day PHI for harvest or grazing
Regent ^r	90 day PHI for harvest or grazing
Sevin XLR	14 day PHI for grazing, 48 days for harvest
Tracer	7 day PHI for grazing, 28 day for harvest

^r Restricted Use

* MOA group numbers in parentheses (#) following the insecticide name are used to designate the mode of action of the insecticide according to the classification system developed by the Insecticide Resistance Action Committee, (IRAC) in 2005. It is intended to help in the selection of insecticides for preventative resistance management. If you make multiple applications for a specific pest during a growing season, simply select a registered insecticide with a different number for each application. To further delay resistance from developing, integrate other control methods into your pest management programs.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 64 cents per copy. 0508 JA Revised