



Current Report

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Management of Insect and Mite Pests in Sorghum

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Sorghum pests, if not controlled when thresholds are exceeded, will reduce yield and quality of grain and forage. Chemical pesticides should not be used as a substitute for good agronomic practices or as “preventative insurance” because it is rarely economically or environmentally justifiable. Many sorghum pest problems can be avoided by developing an Integrated Pest Management (IPM) plan that includes using good cultural practices, such as planting high-quality, vigorous, Oklahoma-proven hybrid seed; providing proper fertilization and weed control; and, when possible, keeping sorghum fields as far away as possible from wheat.

Pesticide recommendations in this publication were correct as of the “Modified Date”. Pesticide names in (parentheses) are chemical names that have many common generic commercial names. Always check the label that came with the purchased insecticide for the most current rates and restrictions. Refer to the following OSU publications for additional information.

- EPP-7157 Field Key to Larvae in Sorghums
- EPP-7196 Grasshopper Management in Rangeland, Pastures, and Crops
- PSS-2113 Grain Sorghum Production Calendar
- PT-2007 Grain Sorghum Performance Trials in Oklahoma

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>Chinch bug Adults are 1/8 inch long, black with white wings that are folded over the back into an “hour glass” shape. Nymphs are reddish to brown, with a white stripe across their “shoulders”.</p> <p>Damage: Feed at base of plants, in between leaf sheath and stem. Chinch bugs often migrate from small grains to sorghum. Feeding may kill small seedlings.</p> <p>Threshold: 2 to 3 bugs per plant on seedlings. Treat if large numbers are moving in to sorghum from grain. A border spray 30 to 60 feet wide on the margins of the field may be of value if chinch bug numbers are high in an adjacent wheat field.</p>	Planting Time		<p>Seed treatments will generally provide 3 weeks of suppression. Use seed treatment if sorghum has suffered regular losses from chinch bug infestations. Do not feed leftover treated seed to livestock. Check table on last page for grazing and harvest restrictions for seed treatments.</p> <p>Best control is obtained when insecticide is applied by ground, with nozzles directed at the base of the plants using a minimum of 20 to 30 gallons of water.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.</p> <p>Ground application only; 75 day wait for grazing or forage.</p> <p>30 day wait for harvest or grazing.</p> <p>30 to 60 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p> <p>Sevin may cause spidermite buildup. 21 day wait for forage, 14 days for harvest or grazing.</p>	
	Cruiser 5FS (4A)	5.1 fl oz/cwt seed		
	Gaucho 480 (4A)	8 fl oz/cwt seed		
	Poncho 600 (4A)	5.1 to 6.4 fl oz/cwt seed		
	Post-Plant			
	Asana XL (3)	5.8 to 9.6 fl oz		
	Baythroid XL (3)	2.0 to 2.8 fl oz		
	Cobalt (3)	13 to 38 fl oz		
	Furadan 4F (1A)	0.5 to 1 pt		
	Karate with Zeon (3) (lambda cyhalothrin)	1.92 fl oz (0.03 lb ai/a)		
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1 lb ai/a)		
	Mustang MAX EC (3)	3.2 to 4.0 fl oz		
	Proaxis 0.5 CS (3) Prolex 1.25 CS (3)	3.84 fl oz 1.54 fl oz		
Sevin XLR (1A) (carbaryl)	1 to 2 qt (1 to 2 lb ai/a)			

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Corn earworm (Headworm) Up to 1 inch. Color varies from green, to brown, to yellow, and pink.</p> <p>Damage: Feed in whorl, and ripening seed in head. Yield loss from whorl feeding is negligible. Are capable of causing damage to seed in head until grain reaches soft dough stage.</p> <p>Threshold: Two or more larvae per head before hard dough.</p>	<p>Asana XL (3)</p> <p>Baythroid XL (3)</p> <p>Cobalt (3)</p> <p>Delta Gold (3)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Methomyl (1A)</p> <p>Mustang MAX EC (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p> <p>Tracer (5)</p>	<p>5.8 to 9.6 fl oz</p> <p>1.3 to 2.8 fl oz</p> <p>19 to 38 fl oz</p> <p>1 to 1.5 fl oz</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>2 pt (1 lb ai/a)</p> <p>0.75 to 1.5 pt</p> <p>1.76 to 4.0 fl oz</p> <p>2.56 to 3.84 fl oz 1.02 to 1.54 fl oz</p> <p>1.5 to 3 fl oz</p>	<p>Do not apply more than 0.15 lb ai/season. 21 day wait for grazing or harvest.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>30 to 60 day wait for grazing or harvest.</p> <p>14 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p> <p>14 day wait for grazing, 7 days for harvest.</p>
<p>Corn leaf aphid Bluish-green, soft bodied aphid with black legs, antennae and cornicles Typically found in whorl.</p> <p>Damage: Feed in whorl, may cause some delay of whorl emergence if numbers are high. Can mechanically transmit Maize Dwarf Mosaic virus disease.</p> <p>Threshold: Corn leaf aphids rarely cause significant yield loss, so no thresholds have been established.</p>	<p>Planting Time</p> <p>Cruiser 5FS (4A)</p> <p>Gaucho 480 (4A)</p> <p>Poncho 600 (4A)</p> <p>Post-Plant</p> <p>Cobalt (1B, 3)</p> <p>Dimethoate 4E (1B)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p>	<p>5.1 fl oz/cwt seed</p> <p>8 fl oz/cwt seed</p> <p>5.1 to 6.4 fl oz/cwt seed</p> <p>7 to 13 fl oz a</p> <p>0.5 to 1 pt</p> <p>0.5 to 1 pt (0.25 to 0.5 lb ai/a)</p>	<p>Do not feed leftover treated seed to livestock. Check table on last page for grazing and harvest restrictions for seed treatments.</p> <p>Research indicates that yield losses occur only where corn leaf aphids cause stand loss on seedling plants. Chemical treatments, including seed treatments, are not likely to reduce potential for infection by Maize Dwarf Mosaic Virus, because it can be transmitted within 30 seconds after an aphid begins feeding. Texas research suggests that corn leaf aphids serve as a food source for lady beetles that can help prevent greenbug outbreaks.</p>
<p>Cutworms 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.</p> <p>Threshold: Scout fields at seedling emergence. Treat when worms are less than 1/2 inch long, and skips are noticed.</p>	<p>Asana XL (3)</p> <p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Mustang MAX EC (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p>	<p>5.8 to 9.6 fl oz</p> <p>1 to 1.3 fl oz</p> <p>13 to 38 fl oz</p> <p>1 to 1.5 fl oz</p> <p>0.96 to 1.28 fl oz (0.015 to 0.02 lb ai/a)</p> <p>1 to 2 pt (0.5 to 1 lb ai/a)</p> <p>1.3 to 4.0 fl oz</p> <p>1.92 to 2.56 fl oz 0.77 to 1.02 fl oz</p>	<p>Do not apply more than 0.15 lb ai/season. 21 day wait for grazing or harvest.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>30 to 60 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p>

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Fall armyworm (Headworm) Large, striped, nonbristled caterpillar up to 1.5 inches. Has a light colored, inverted “Y” on head.</p> <p>Damage: Feed in whorl, and ripening seed in head. Yield loss from whorl feeding is negligible. Can damage seed in head until grain reaches soft dough stage.</p> <p>Threshold: Two or more larvae per head before hard dough. Open-headed varieties are less susceptible to attack than tight-headed varieties.</p>	<p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Methomyl (1A)</p> <p>Mustang MAX (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p> <p>Sevin XLR (1A)</p> <p>Tracer (5)</p>	<p>1.3 to 2.8 fl oz</p> <p>13 to 38 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>0.75 to 1.5 pt</p> <p>1.8 to 4.0 fl oz</p> <p>2.56 to 3.84 fl oz 1.02 to 1.54 fl oz</p> <p>1 to 2 qt</p> <p>1.5 to 3 fl oz</p>	<p>Check labels, some state that product is only effective on very small (1st and 2nd instars) caterpillars.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.</p> <p>30 day wait for grazing or harvest.</p> <p>30 to 60 day wait for grazing or harvest.</p> <p>14 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p> <p>No wait for grazing, 21 days for harvest.</p> <p>14 day wait for grazing, 7 days for harvest.</p>
<p>False chinch bug Adults 1/8 inch, long dirty gray, with brown or black markings, piercing mouthparts.</p> <p>Damage: Feed in groups. Large numbers may cause wilting of heads or small plants.</p> <p>Threshold: 140 or more per head.</p>	<p>Baythroid XL (3)</p> <p>Mustang MAX EC (3)</p>	<p>1.3 to 2.8 fl oz</p> <p>3.2 to 4.0 fl oz</p>	<p>14 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p>
<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 chew leaf blade. Damage emerging seed heads, causing yield loss.</p> <p>Threshold: 15 to 20 per square yard. If nymph populations exceed threshold field borders (25 to 40 per square yard), treat before they move into sorghum.</p> <p>See EPP-7196: Grasshopper Management in Rangeland, Pastures, and Crops</p>	<p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Dimethoate 4E (1B)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Mustang MAX EC (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p>	<p>2 to 2.8 fl oz</p> <p>7 to 13 fl oz</p> <p>1.3 to 1.8 fl oz</p> <p>1 pt</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>0.5 to 1 pt (0.25 to 0.5 lb ai/a)</p> <p>3.2 to 4.0 fl oz</p> <p>2.56 to 3.84 fl oz 1.02 to 1.54 fl oz</p>	<p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/A or less, 60 day wait for applications over 26 fl oz/Acre</p> <p>14 day wait for grazing or harvest</p> <p>Only one post-plant application per season.</p> <p>30 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p>

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Greenbug Lime-green, soft bodied aphid with darker green stripe down back. Tips of legs, cornicles and most of antennae are black.</p> <p>Damage: Injury can occur at anytime from seedling emergence through soft dough stage. Greenbug feeding causes reddening of leaves which die as populations increase.</p> <p>Threshold: See Thresholds listed at end of publication. Need to treat is dependent upon greenbug numbers, plant size, variety, growing conditions, and the presence of predators and parasites. It is better to base treatment decision on presence of plant damage than on greenbug numbers alone.</p>	Seed Treatment		<p>Do not feed leftover treated seed to livestock. Check table on last page for grazing and harvest restrictions for seed treatments.</p> <p>Do not place granules in contact with seed. 50 day wait for grazing, 100 days for harvest.</p> <p>28 day wait for harvest or grazing.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a. See additional instructions on label.</p> <p>Do not feed or graze forage hay or straw to livestock.</p> <p>Greenbug resistant varieties are available.</p> <p>7 day PHI for grain. Do not feed or graze forage, hay or straw to livestock.</p> <p>30 day wait for grazing or harvest (24C label).</p>
	Cruiser 5FS (4A)	5.1 fl oz/cwt seed	
	Gaucho 480 (4A)	8 fl oz/cwt seed	
	Poncho 600 (4A)	5.1 to 6.4 fl oz/cwt seed	
	Planting Time		
	Counter CR (1B)	"Lock 'n Load" applicator needed	
	Post-Plant		
	Dimethoate 4E (1B)	0.5 to 1 pt	
Cobalt (1B, 3)	13 to 38 fl oz		
Furadan 4F (1A)	1 pt		
Lorsban 4E (1B) (chlorpyrifos)	0.5 to 2 pt (0.25 to 1 lb ai/A)		
Malathion 5E (1B)	1.5 pt		
Supracide 2E (1B)	2 pt		
<p>Lesser cornstalk borer Caterpillar ¾ inch when mature. Slender, blue-green with brown bands around each body segment. Make silken tunnels at feeding site.</p> <p>Damage: Tunnels in roots and stems. Occurs in May through June.</p> <p>Threshold: Treat before larva bore into stalk.</p>	Delta Gold (3)	1.3 to 1.9 fl oz	14 day wait for grazing or harvest
	Karate with Zeon (3) (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A)	30 day wait for grazing or harvest.
	Lorsban 4E (1B) (chlorpyrifos)	1 to 2 pt (0.5 to 1 lb ai/A)	30 to 60 day wait for grazing or harvest.
	Mustang MAX EC (3)	3.2 to 4.0 fl oz	14 day wait for harvest, 45 days for grazing
	Proaxis 0.5 CS (3) Prolex 1.25 CS (3)	2.56 to 3.84 fl oz 1.02 to 1.54 fl oz	30 day wait for grazing or harvest
<p>Mites Small, less than 1/100 inches. Cause brown stippling of leaves.</p> <p>Damage: Causes stippling of leaves, severe infestations can kill leaves.</p> <p>Threshold: No threshold established. Treat if majority of plants are infested with large, increasing mite infestations. Control is not be justified after head reaches hard dough stage</p>	Post-Plant		
	Comite II (14)	1.5 to 2.25 pt	30 day wait for grazing, 60 days for harvest.
	Dimethoate 4E (1B)	1 pt	Only one post-plant application per season.
Supracide 2E (1B)	2 pt	30 day wait for grazing or harvest. (24C label).	

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Panicle feeding bugs Include stink bugs and leaf-footed bugs. Stink bugs: Shield shaped bugs ranging from 1/2 to 3/4 inch. Leaf-footed bug: Brown, oblong about 3/4 inches with each hindleg leaf-like.</p> <p>Damage: Feed on seed, causing blasted heads, shrunken damaged seed. Most damage occurs before seed reaches hard dough stage.</p> <p>Thresholds: Milk Stage: 5 bugs /head. Soft Dough: 9 bugs/head.</p>	<p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Mustang MAX (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p>	<p>1.3 to 2.8 fl oz</p> <p>19 to 38 fl oz</p> <p>1.5 to 1.8 fl oz</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>1.8 to 4.0 fl oz</p> <p>2.56 to 3.84 fl oz 1.02 to 1.54 fl oz</p>	<p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 days for applications over 26 fl oz/a.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p>
<p>Sorghum midge Tiny, fragile orange-bodied fly that is active in early to mid morning.</p> <p>Damage: Damaged heads appear to be “blasted” or “blighted” from high temperatures, infertility, or drought. Damage from sorghum midge generally restricted to sorghum that blooms after August 15.</p> <p>Threshold: Check fields before 11 am, when flies are most active. Treat when 25 to 30% of heads have begun bloom and adults average one or more per head.</p>	<p>Asana XL (3)</p> <p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Methomyl (1A)</p> <p>Mustang MAX (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p>	<p>2.9 to 5.8 fl oz</p> <p>0.9 to 1.3 fl oz</p> <p>7 to 13 fl oz</p> <p>1.3 to 1.8 fl oz</p> <p>0.96 to 1.28 fl oz (0.015 to 0.02 lb ai/a)</p> <p>0.5 pt (0.25 lb ai/a)</p> <p>0.75 to 1.5 pt</p> <p>1.28 to 4.0 fl oz</p> <p>1.92 to 2.56 fl oz 0.77 to 1.02 fl oz</p>	<p>Check labels. May need to apply a second treatment 3 to 5 days after first. Uniform planting date is an option for management.</p> <p>Do not apply more than 0.15 lb ai/season. 21 day wait for grazing or harvest.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>14 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p>
<p>Sorghum webworm Fuzzy, reddish to brown worms in head.</p> <p>Damage: Caterpillars feed on the seed, and hollow it out. Open-headed varieties are less susceptible than tight-headed varieties to attack.</p> <p>Threshold: 5 or more larvae per head before hard dough stage.</p>	<p>Baythroid XL (3)</p> <p>Cobalt (1B, 3)</p> <p>Delta Gold (3)</p> <p>Karate with Zeon (3) (lambda cyhalothrin)</p> <p>Lorsban 4E (1B) (chlorpyrifos)</p> <p>Mustang MAX EC (3)</p> <p>Proaxis 0.5 CS (3) Prolex 1.25 CS (3)</p> <p>Tracer (5)</p>	<p>1.3 to 2.8 fl oz</p> <p>19 to 38 fl oz</p> <p>1 to 1.5 fl oz</p> <p>1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/a)</p> <p>1 pt (0.5 lb ai/a)</p> <p>1.8 to 4.0 fl oz</p> <p>2.56 to 3.84 fl oz 1.02 to 1.54 fl oz</p> <p>1.5 to 3 fl oz</p>	<p>14 day wait for grazing or harvest.</p> <p>30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.</p> <p>14 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>30 day wait for grazing or harvest.</p> <p>14 day wait for harvest, 45 days for grazing.</p> <p>30 day wait for grazing or harvest.</p> <p>14 day wait for grazing, 7 days for harvest.</p>

Pest, Damage, and Treatment Threshold	Insecticide Formulation and (MOA Group)	Rate of Product per Acre	Comments
<p>Southwestern corn borer Full grown caterpillars are white with prominent dark spots on body.</p> <p>Damage: Tunnels throughout stalk. May girdle mature stalks.</p> <p>Threshold: Chemical control usually not warranted.</p>	Baythroid XL (3)	1.3 to 2.8 fl oz	14 day wait for grazing or harvest.
	Cobalt (1B, 3)	19 to 38 fl oz	30 day wait for applications of 26 fl oz/a or less, 60 day wait for applications over 26 fl oz/a.
	Karate with Zeon (3) (lambda cyhalothrin)	1.28 to 1.92 fl oz 1.28 to 3.84 fl oz (read label)	30 day wait for grazing or harvest.
	Lorsban 4E (1B) (chlorpyrifos)	1.5 to 2 pt (0.75 to 1 lb ai/A)	60 day wait for grazing or harvest.
	Mustang MAX (3)	1.8 to 4.0 fl oz	14 day wait for harvest, 45 days for grazing.
	Proaxis 0.5 CS (3) Prolex 1.25 CS (3)	2.56 to 3.84 fl oz 1.02 to 1.54 fl oz	30 day wait for grazing or harvest.
	Tracer (5)	1.5 to 3 fl oz	14 day wait for grazing, 7 days for harvest.
<p>White grub Large, "C" shaped grub with a white body and a brown head.</p> <p>Damage: Grubs feed on roots of seedling plants. Damage potential is dependent on planting date, and speed of growth of the plant.</p> <p>Threshold: No treatment is available. An average of one grub per square foot may cause stand loss.</p>	NA	NA	No insecticide is currently registered for white grub control. Replanting may be the best option.
<p>Wireworm Hard-shelled, smooth, cylindrical, yellowish to brown worms. 2-6 year life cycle. More common in sorghum planted into a sod or grass pasture.</p> <p>Damage: Feed on seed, seedling. Cause stunting and stand loss.</p> <p>Threshold: Seed treatments are available. Treat if field history indicates a problem.</p>	Seed Treatment		
	Cruiser 5FS (4A)	5.1 fl oz/cwt seed	Do not feed leftover treated seed to livestock. Check table on last page for grazing and harvest restrictions for seed treatments.
	Gaucho 480 (4A)	8 fl oz/cwt seed	
	Poncho 600 (4A)	5.1 to 6.4 fl oz/cwt seed	
Planting Time			
*Counter 15G (1B)	Apply per label.	* Counter 15 G can be used as a planting time treatment except in the Panhandle, but it requires a "Lock 'n Load" applicator, and has the potential to damage plants, and interact with several ALS-inhibiting herbicides. Check label for restrictions.	

Pre-harvest Intervals and Grazing Restrictions

Asana ^r XL	21 day PHI
Baythroid ^r XL	14 day PHI, 14 days grazing
Comite II	30 day PHI for silage, 60 days for grain harvest.
Counter ^r CR	100 day PHI for grain, 50 days for grazing
Cruiser 5FS	no grazing restriction
Delta Gold ^r	14 day wait for grazing or harvest
Dimethoate ^r	28 day PHI for grain or grazing, do not apply after heading.
Di-Syston ^r 8	check label for various restrictions
Furadan ^r 4F	75 day PHI for harvest or grazing
Gaucho	45 day PHI for grazing
Karate ^r	30 day PHI for harvest or grazing
Lorsban ^r 4E	30-60 day PHI for harvest or grazing, depending on rate applied.
Malathion	7 day PHI for grain. Do not feed or graze forage, hay or straw to livestock.
Methomyl ^r	14 day PHI for harvest or grazing
Mustang ^r MAX EC	14 day PHI for harvest, 45 days for grazing
Poncho	no grazing restriction
Proaxis ^r	30 Day PHI for harvest or grazing
Prolex ^r	30 Day PHI for harvest or grazing
Sevin XLR	21 day PHI for harvest, 0 days for forage.
Tracer	7 day PHI for harvest, 14 days for grazing

^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.

Treatment Thresholds for Greenbugs on Sorghum

Plant Size	When to Treat	
	Texas thresholds	Kansas thresholds
0 to 1 leaf stage	20% of plants visibly damaged	25-50 greenbugs per plant
3 leaf stage	20% of plants visibly damaged	50-100 greenbugs per plant
5 leaf stage	Visible damage on leaves, (red spots yellow leaves) but before any entire leaves are killed on 20% of plants	150-300 greenbugs per plant
Mid-whorl stage	Visible damage on leaves (red spots yellow leaves), but before any entire leaves are killed on 20% of plants	300-600 greenbugs per plant
Boot to heading	Death of one functional leaf	700-1000 greenbugs per plant
Heading through soft dough	Death of two functional leaves	700-1000 greenbugs per plant

The Oklahoma Cooperative Extension Service Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

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