



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 following good cultural practices such as planting high-quality, vigorous, Oklahoma-proven hybrid seed; providing proper fertilization and weed control; and, when possible, keep sorghum fields as far away as possible from wheat.

Pesticide recommendations in this publication were correct as of the “Modified Date.” 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.

- F-2113 Grain Production Calendar
- PT-2005 Grain Sorghum Performance Trials in Oklahoma
- F-7157 Field Key to Larvae in Sorghums
- F-7196 Grasshopper Management in Rangeland, Pastures, and Crops

Management of Insect and Mite Pests in Sorghum

Pest, Damage, and Treatment Threshold	(Group)	Insecticide & Formulation	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><u>Damage:</u> Feeds 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><u>Threshold:</u> Two to three bugs per plant on seedlings. Treat if large numbers are moving into sorghum from grain. A border spray 30-60 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 three weeks of suppression. Use seed treatment if sorghum has suffered regular losses from chinch bug infestations.</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 20-30 gallons of water.</p> <p>Check table on last page for grazing and harvest restrictions.</p> <p>Sevin may cause mite buildup.</p>	
	(4A)	Cruiser 5FS	5.1 fl oz/cwt seed		
	(4A)	Gaucho 480	8 fl oz/cwt seed		
	Post-Plant				
	(3)	Asana XL	5.8 to 9.6 fl oz		
	(3)	Baythroid 2	2.0 to 2.8 fl oz		
	(1A)	Furadan 4F	0.5 to 1 pt		
	(3)	Karate with Zeon	1.92 fl oz		
	(3)	Warrior with Zeon	3.84 fl oz		
	(1B)	Lorsban 4E	1 to 2 pt		
	(3)	Mustang MAX	3.2 to 4.0 fl oz		
	(3)	Proaxis 0.5 CS	3.84 fl oz		
	(3)	Prolex 1.25 CS	1.54 fl oz		
(1A)	Sevin XLR	1 to 2 qt			

Pest, Damage, and Treatment Threshold	(Group)	Insecticide & Formulation	Rate of Product per Acre	Comments	
<p>Corn earworm (Headworm) Up to 1 inch long. Color varies from green to brown to yellow and pink.</p> <p><u>Damage:</u> Feeds in whorl, and ripening seed in head. Yield loss from whorl feeding is negligible. They are capable of causing damage to seed in head until grain reaches soft dough stage.</p> <p><u>Threshold:</u> Two or more larvae per head before hard dough stage.</p>	(3)	Asana XL	5.8 to 9.6 fl oz	Do not apply more than 0.15 lb ai/season. 21 day waiting period for grazing or harvest.	
	(3)	Baythroid 2	1.3 to 2.8 fl oz	14 day waiting period for grazing or harvest.	
	(3)	Karate with Zeon	1.28 to 1.92 fl oz	30 day waiting period for grazing or harvest.	
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz		
	(1B)	Lorsban 4E	2 pt	30 to 60 day waiting period for grazing or harvest.	
	(1A)	Methomyl	0.75 to 1.5 pt	14 day waiting period for grazing or harvest.	
	(3)	Mustang MAX	1.76 to 4 fl oz	14 day waiting period for harvest; 45 days for grazing.	
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	30 day waiting period for grazing or harvest.	
	(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz		
<p>Corn leaf aphid Bluish-green, soft bodied aphid with black legs, antennae and cornicles. Typically found in whorl.</p> <p><u>Damage:</u> Feeds in whorl, may cause some delay of whorl emergence if numbers are high. Can mechanically transmit Maize Dwarf Mosaic virus disease.</p> <p><u>Threshold:</u> Corn leaf aphids rarely cause significant yield loss, so no thresholds have been established.</p>	Planting Time				
	(4A)	Cruiser 5FS	5.1 fl oz/cwt seed	Check table on last page for grazing and harvest restrictions.	
	(4A)	Gaucho 480	8 fl oz/cwt seed	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 which can help prevent greenbug outbreaks.	
	Post-Plant				
	(1B)	Dimethoate 4E	0.5 to 1 pt		
	(1B)	Lorsban 4E	0.5 to 1 pt		
	(3)	Mustang MAX	3.2 to 4 fl oz		
	<p>Cutworms Robust caterpillars that “roll” up when disturbed, and prefer to live under ground.</p> <p><u>Damage:</u> 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><u>Threshold:</u> Scout fields at seedling emergence. Treat when worms are less than ½ inch long, and skips are noticed.</p>	(3)	Asana XL	5.8 to 9.6 fl oz	Do not apply more than 0.15 lb ai/season. 21 day waiting period for grazing or harvest.
		(3)	Baythroid 2	1 to 1.3 fl oz	14 day waiting period for grazing or harvest.
(3)		Karate with Zeon	0.96 to 1.28 fl oz	30 day waiting period for grazing or harvest.	
(3)		Warrior with Zeon	1.92 to 2.56 fl oz		
(1B)		Lorsban 4E	1 to 2 pt	30 to 60 day waiting period for grazing or harvest.	
(3)		Mustang MAX	1.3 to 4 fl oz	14 day waiting period for harvest, 45 days for grazing.	
(3)		Proaxis 0.5 CS	1.92 to 2.56 fl oz	30 day waiting period for grazing or harvest.	
(3)		Prolex 1.25 CS	0.77 to 1.02 fl oz		

Pest, Damage, and Treatment Threshold	(Group)	Insecticide & Formulation	Rate of Product per Acre	Comments
<p>Fall armyworm (Headworm) Large, striped, non-bristled caterpillar up to 1.5 inches long. Has a light colored, inverted “Y” on head.</p> <p><u>Damage:</u> Feeds 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><u>Threshold:</u> Two or more larvae per head before hard dough stage. Open-headed varieties are less susceptible to attack than tight-headed varieties.</p>	(3)	Karate with Zeon	1.28 to 1.92 fl oz	<p>Check labels, some state that product is only effective on very small (1st and 2nd instars) caterpillars.</p> <p>30 day waiting period for grazing or harvest.</p> <p>30 to 60 day waiting period for grazing or harvest.</p> <p>14 day waiting period for grazing or harvest.</p> <p>14 day waiting period for harvest; 45 days for grazing.</p> <p>30 day waiting period for grazing or harvest.</p> <p>No waiting period for grazing; 21 days for harvest.</p> <p>14 day waiting period for grazing; 7 days for harvest.</p>
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz	
	(1B)	Lorsban 4E	1 pt	
	(1A)	Methomyl	0.75 to 1.5 pt	
	(3)	Mustang MAX	1.8 to 4 fl oz	
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	
	(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz	
<p>False chinch bug Adults 1/8 inch long, dirty gray, with brown or black markings, piercing mouthparts.</p> <p><u>Damage:</u> Feeds in groups. Large numbers may cause wilting of heads or small plants.</p> <p><u>Threshold:</u> 140 or more per head.</p>	(3)	Baythroid 2	1.3 to 2.8 fl oz	14 day waiting period for grazing or harvest.
	(3)	Mustang MAX	3.2 to 4 fl oz	14 day waiting period for harvest; 45 days for grazing.
<p>Grasshopper One to two inches long, outer wings leathery, inner wings clear or colored. Enlarged hind legs designed for jumping.</p> <p><u>Damage:</u> Chews leaves, leaving ragged edges, or completely chews leaf blade. Damages emerging seed heads, causing yield loss.</p> <p><u>Threshold:</u> 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>	(3)	Baythroid 2	2 to 2.8 fl oz	14 day waiting period for grazing or harvest.
	(1B)	Dimethoate 4E	1 pt	Only one post-plant application per season.
	(3)	Karate with Zeon	1.28 to 1.92 fl oz	30 day waiting period for grazing or harvest.
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz	
	(1B)	Lorsban 4E	0.5 to 1 pt	30 to 60 day waiting period for grazing or harvest.
	(3)	Mustang MAX	3.2 to 4 fl oz	14 day waiting period for harvest; 45 days for grazing.
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	30 day waiting period for grazing or harvest.
(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz		
(1A)	Sevin XLR	0.5 to 1.5 qt	No waiting period for grazing; 21 days for harvest.	

Pest, Damage, and Treatment Threshold	(Group)	Insecticide & Formulation	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><u>Damage:</u> Injury can occur at anytime from seedling emergence through soft dough stage. Greenbug feeding causes reddening of leaves, leaves die as populations increase.</p> <p><u>Threshold:</u> 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			
	(4A)	Cruiser 5FS	5.1 fl oz/cwt seed	0 day waiting period for grazing or harvest.
	(4A)	Gaucho 480	8 fl oz/cwt seed	45 day waiting period for grazing or harvest.
	Planting Time			
	(1B)	Counter CR	"Lock 'n Load" applicator needed.	Do not place granules in contact with seed. 50 day waiting period for grazing, 100 days for harvest.
	(1B)	Di-Syston G	6 to 8 oz/1,000 row-ft	In furrow band. Do not apply directly to seed.
	(1B)	Di-Syston 8	0.9 to 1.2 oz/1,000 row-ft	Apply in band or furrow, do not allow product to contact seed.
	Post-Plant			
	(1B)	Dimethoate 4E	1 pt	Broadcast directly over whorl. Only 1 post-plant application per season.
	(1B)	Di-Syston G	8 oz/1,000 row-ft	See label for application directions.
(1B)	Di-Syston 8	1.2 fl oz/1,000 row-ft	75 day waiting period for grazing or harvest.	
(1A)	Furadan 4F	1 pt	Do not feed or graze forage hay or straw to livestock.	
(1B)	Lorsban 4E	0.5 to 2 pt	Greenbug resistant varieties are available.	
(1B)	Malathion 5E	1.5 pt	7 day PHI for grain. Do not feed or graze forage, hay or straw to livestock.	
<p>Lesser cornstalk borer Caterpillar ¾ inches long when mature. Slender, blue-green with brown bands around each body segment. Makes silken tunnels at feeding site.</p> <p><u>Damage:</u> Tunnels in roots and stems. Occurs in May through June.</p> <p><u>Threshold:</u> Treat before larva bore into stalk.</p>	(3)	Karate with Zeon	1.28 to 1.92 fl oz	30 day waiting period for grazing or harvest.
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz	
	(1B)	Lorsban 4E	1 to 2 pt	30-60 day waiting period for grazing or harvest.
	(3)	Mustang MAX	3.2 to 4 fl oz	14 day waiting period for harvest; 45 days for grazing.
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	30 day waiting period for grazing or harvest.
(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz		
<p>Mites Small, less than 1/100 inch long. Causes brown stippling of leaves.</p> <p><u>Damage:</u> Causes stippling of leaves, severe infestations can kill leaves.</p> <p><u>Threshold:</u> 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>	(14)	Comite	1.5 to 2.25 pt	30 day waiting period for grazing, 60 days for harvest.
	(1B)	Dimethoate 4E	1 pt	Only one post-plant application per season.
	(1B)	Di-Syston 8	8 fl oz	Two or more treatments may be necessary. Two gallons or more, total spray per acre will increase control.

Pest, Damage, and Treatment Threshold	(Group)	Insecticide & Formulation	Rate of Product per Acre	Comments
<p>Panicle feeding bugs Include stink bugs and leaf-footed bugs. Stink bugs: shield-shaped bugs ranging from ½- to ¾-inch long. Leaf-footed bug: brown, oblong about ¾-inch long with each hindleg leaf-like.</p> <p><u>Damage:</u> Feeds on seed, causing blasted heads, shrunken damaged seed. Most damage occurs before seed reaches hard dough stage.</p> <p><u>Thresholds:</u> Milk stage: 5 bugs /head. Soft Dough: 9 bugs/head.</p>	(3)	Baythroid 2	1.3 to 2.8 fl oz	14 day waiting period for grazing or harvest
	(3)	Karate with Zeon	1.28 to 1.92 fl oz	30 day waiting period for grazing or harvest.
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz	
	(3)	Mustang MAX	1.8 to 4.0 fl oz	14 day waiting period for harvest; 45 days for grazing.
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	30 day waiting period for grazing or harvest.
	(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz	
	(1A)	Sevin XLR	1 to 2 qt	No waiting period for grazing; 21 days for harvest.
<p>Sorghum midge Tiny, fragile orange-bodied fly that is active in early to mid morning.</p> <p><u>Damage:</u> 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><u>Threshold:</u> Check fields before 11 am, when flies are most active Treat when 25 to 30% of heads have begun to bloom and adults average one or more per head.</p>	(3)	Asana XL	2.9 to 5.8 fl oz	Check labels. May need to apply a second treatment 3 to 5 days after first. Uniform planting date is an option for management. Do not apply more than 0.15 lb ai/season. 21 day waiting period for grazing or harvest.
	(3)	Baythroid 2	0.9 to 1.3 fl oz	14 day waiting period for grazing or harvest.
	(1B)	Di-Syston 8	4 to 8 fl oz	75 day waiting period for grazing or harvest
	(3)	Karate with Zeon	1.9 to 2.6 fl oz	30 day waiting period for grazing or harvest.
	(3)	Warrior with Zeon	2.6 to 3.8 fl oz	
	(1B)	Lorsban 4E	0.5 pt	30 to 60 day waiting period for grazing or harvest.
	(1A)	Methomyl	0.75 to 1.5 pt	14 day waiting period for grazing or harvest.
	(3)	Mustang MAX	1.28 to 4.0 fl oz	14 day waiting period for harvest; 45 days for grazing
	(3)	Proaxis 0.5 CS	1.92 to 2.56 fl oz	30 day waiting period for grazing or harvest
	(3)	Prolex 1.25 CS	0.77 to 1.02 fl oz	
<p>Sorghum webworm Fuzzy, reddish to brown worms in head.</p> <p><u>Damage:</u> Caterpillars feed on the seed, and hollow it out. Open-headed varieties are less susceptible to attack than tight-headed varieties.</p> <p><u>Threshold:</u> Five or more larvae per head before hard dough stage.</p>	(3)	Baythroid 2	1.3 to 2.8 fl oz	14 day waiting period for grazing or harvest.
	(3)	Karate with Zeon	1.28 to 1.92 fl oz	30 day waiting period for grazing or harvest.
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz	
	(1B)	Lorsban 4E	1 pt	30 to 60 day waiting period for grazing or harvest.
	(3)	Mustang MAX	1.8 to 4.0 fl oz	14 day waiting period for harvest; 45 days for grazing.
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	30 day waiting period for grazing or harvest.
	(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz	
	(1A)	Sevin XLR	1 to 2 qt	No waiting period for grazing; 21 days for harvest.
(5)	Tracer	1.5 to 3 fl oz	14 day waiting period for grazing; 7 days for harvest.	

Pest, Damage, and Treatment Threshold	(Group)	Insecticide & Formulation	Rate of Product per Acre	Comments
<p>Southwestern corn borer Full grown caterpillars are white with prominent dark spots on body.</p> <p><u>Damage:</u> Tunnels throughout stalk. May girdle mature stalks.</p> <p><u>Threshold:</u> Chemical control usually not warranted.</p>	(3)	Baythroid 2	1.3 to 2.8 fl oz	14 day waiting period for grazing or harvest.
	(3)	Karate with Zeon	1.28 to 1.92 fl oz	30 day waiting period for grazing or harvest.
	(3)	Warrior with Zeon	2.56 to 3.84 fl oz	
	(1B)	Lorsban 4E	1 pt	30-60 day waiting period for grazing or harvest.
	(3)	Mustang MAX	1.8 to 4 fl oz	14 day waiting period for harvest; 45 days for grazing.
	(3)	Proaxis 0.5 CS	2.56 to 3.84 fl oz	30 day waiting period for grazing or harvest.
	(3)	Prolex 1.25 CS	1.02 to 1.54 fl oz	
<p>White grub Large, "C" shaped grub with a white body and a brown head.</p> <p><u>Damage:</u> Grubs feed on roots of seedling plants. Damage potential is dependent on planting date and speed of growth of the plant.</p> <p><u>Threshold:</u> 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. Re-planting may be the best option.
<p>Wireworm Hard-shelled, smooth, cylindrical, yellowish to brown worms. 2- to 6-year life cycle. More common in sorghum planted into a sod or grass pasture.</p> <p><u>Damage:</u> Feeds on seed and seedlings. Causes stunting and stand loss.</p> <p><u>Threshold:</u> Seed treatments are available. Treat if field history indicates a problem.</p>	Seed Treatment			
	(4A)	Cruiser 5FS	5.1 fl oz/cwt seed	Do not feed leftover seed to livestock.
	(4A)	Gaucho 480	8 fl oz/cwt seed	
	Planting Time			
	*Counter 15G		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, has the potential to damage plants, and interacts with several ALS-inhibiting herbicides. Check label for restrictions.

Pre-harvest Intervals and grazing restrictions

Asana XL	21 day PHI.
Baythroid 2	14 day PHI; 14 days grazing.
Comite II	30 day PHI for silage; 60 days for grain harvest.
Counter CR	100 day PHI for grain; 50 days for grazing.
Cruiser 5FS	No grazing restriction.
Dimethoate	28 day PHI for grain or grazing, do not apply after heading.
Di-Syston 8	Check label for various restrictions.
Furadan 4F	75 day PHI for harvest or grazing.
Gaucho 480	45 day PHI for harvest or grazing.
Karate/Warrior	30 day PHI for harvest or grazing.
Lorsban 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	14 day PHI for harvest or grazing.
Mustang MAX	14 day PHI for harvest; 45 days for grazing.
Proaxis	30 Day PHI for harvest or grazing.
Prolex	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.
Thimet G	28 day PHI for harvest or grazing.

* Group numbers in parentheses (#) preceding 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

<i>Plant Size</i>	<i>When to Treat</i>	
	<i>Texas thresholds</i>	<i>Kansas thresholds</i>
0 to 1 leaf stage	20% of plants visibly damaged.	25 to 50 greenbugs per plant.
3 leaf stage	20% of plants visibly damaged.	50 to 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 to 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 to 600 greenbugs per plant.
Boot to heading	Death of one functional leaf.	700 to 1,000 greenbugs per plant.
Heading through soft dough stage	Death of two functional leaves.	700 to 1,000 greenbugs per plant.

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- It dispenses no funds to the public.
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