

2017 Sorghum Insect Control Recommendations

Introduction

Grain sorghum is an important minor rotational crop in Tennessee. Sorghum is more drought-tolerant than either corn or soybeans, and provides another non-host crop for managing soybean cyst nematode populations. Grain sorghum can be used in a double-crop system following wheat or as a late-planted grain crop.

Several insect pests may reduce yields. By planting grain sorghum on the recommended dates, some insect problems can be reduced or avoided. Infestations of the sorghum midge, corn earworm, fall armyworm and sorghum webworm will cause more damage to late-planted sorghum. Fortunately, there are many insecticides that will control economically damaging populations of sorghum insect pests.

Sap-feeding Insects

Different types of aphids may be found on grain sorghum early in the season. These insects are found on top and underneath the leaves and whorls of sorghum plants, where they cause damage by sucking juices from the plant. The most common aphids found in grain sorghum are the greenbug and the corn leaf aphid. The greenbug injects plant tissue with toxic saliva and both types of aphids can transmit viral diseases like Maize Dwarf Mosaic Virus.

Insects Feeding on Grain Heads and Seed Kernels

The sorghum midge and sorghum webworm feed on the ripening grain kernels. Sorghum webworms feed on the ripening kernels by devouring the inside and leaving the hollow kernel shell. Corn earworms and fall armyworms usually consume the entire kernel as they feed.

Insects Feeding on Leaf Tissue

Corn earworms and fall armyworms feed in the whorls of young grain sorghum plants. Severe feeding injury to the growing point or intercalary meristem may destroy the emerging grain head.

Recommended Planting Dates

Grain sorghum should be planted from May 1 to June 1 for highest yields. Planting before mid-May will avoid some insect damage from sorghum midge, fall armyworm, sorghum webworm and corn earworm.

Scouting Procedures and When to Treat

Greenbug: A small, light green aphid with a dark green stripe down the back. It is approximately 1/16 inch long. Reproductive potential is very high compared to other aphids. Early-planted sorghum is more susceptible to attack from greenbug. Look on the undersides of leaves for these small green aphids. Treat when one or two greenbugs are on a majority of the plants in the seedling stage and leaves are showing damage. The greenbug has a toxic substance in its saliva that causes red spots on leaves where it has fed. In larger plants, treat when one or two leaves per plant are dying.

Yellow Sugarcane Aphid: A small aphid that is yellow to light green in color, although usually yellow in sorghum. They have two double rows of dusky colored spots down the top of the abdomen, and rows of spots are also present along the lateral margins of the abdomen. The body is covered with short, stiff hairs. The cornicles (tail-pipes at the end of the abdomen) are reduced to slightly elevated pores. Like the greenbug, the yellow sugarcane aphid injects a toxin while feeding that causes red spots on leaves where it has fed. Use the same treatment threshold as for greenbug.

Corn Leaf Aphid: The cornicles, legs and antennae of this species are black. The body is bluish-green in color and about 1/16 inch long. Aphids are usually found feeding in the whorl of the sorghum plant. Check primarily in the whorls of sorghum plants for this insect. The corn leaf aphid does not inject a toxic saliva into the leaves, as do greenbugs, but can transmit viral diseases if Johnsongrass is present in the field. Sorghum plants can tolerate a large number of these insects, so treatments are usually unnecessary.

Sugarcane Aphid: This invasive insect was first found in Tennessee in 2014. It is small and white to yellow in color. Populations can build rapidly and may kill leaves or entire plants in some circumstances. The accumulation of honeydew on heads may also reduce harvest efficiency. Because this is a new pest, treatment thresholds have not been fully defined. Infestations are often initially concentrated on field edges. Current recommendations are to treat when aphids are present on 30 percent or more of plants and occasional leaves have 100 or more aphids present.

Treatment should also be considered if honeydew is present in multiple spots throughout a field and aphid populations are increasing. Intensify scouting efforts when sugarcane aphids are detected because populations can build rapidly and outbreaks can result in devastating yield losses.

Sorghum Midge: This small, gnat-like insect is reddish-orange and about 1/10 inch long. Female sorghum midges lay eggs in spikelets and seed husks during the bloom stage of sorghum. The larvae feed on the developing seeds, causing them to dry up and die. Check grain heads from emergence through bloom stage twice per week. Place a clear plastic bag over the head and shake, allowing the bag to remain over the head, and observe any midges that may light on the bag walls. Treat when an average of one midge per grain head is found.

Sorghum Webworm: This is a small, hairy caterpillar with four reddish-brown stripes down its back. Full-grown larvae are about 1/2 inch long. They are usually associated with a sticky webbing in the area of their feeding. Check inside grain heads for larvae and on the leaves under grain heads for white fecal droppings from these insects. Close examination is necessary. Treat when an average of three to four or more larvae is found per grain head.

Corn Earworm: This larva has alternating light and dark stripes down its body. The skin is set with tiny spines and the color varies from green to pink. The head capsule is a creamy-yellow. Full grown larvae are about 1½ inches long. Corn earworms feed in the whorls of young plants, and can devour entire grain kernels. Check in the whorls of young plants and inside the grain heads of older plants. Treat when an average of one or more larvae is found per head.

Fall Armyworm: Larvae have a dark head capsule and a more prominent inverted Y on the front of the head. The body color is greenish to brownish, with brownish to black stripes on the sides of the body. Check in the whorls of young late-planted sorghum plants and inside the grain heads of more mature plants. Treat when an average of one or more larvae is found per head.

Insecticide Seed Treatments

Insecticidal seed treatments (e.g., Cruiser, Gaucho, Poncho) are available from seed companies. Seed treatments will help control some seed and seedling pests such as chinch bug, greenbug, wireworms and white grubs. However, there has been little testing of these treatments in Tennessee. Recent data indicates that these insecticide seed treatments may reduce infestations of sugarcane aphid, which may be especially important on late-planted sorghum.

Suggestions for Chemical Control of Sorghum Insects

Insect Pest	Insecticide	Rate Product Per Acre	Pre-Harvest Days (Grain) *
Aphids, except sugarcane aphid **	chlorpyrifos (Lorsban 4, Nufos 4, Lorsban Advanced 3.775)	8 - 32 oz	30 - 60, see label
	chlorpyrifos, γ-cyhalothrin (Cobalt Advanced)	11 - 38 oz	30
Sugarcane Aphid	dimethoate 4	8 - 16 oz	See label
	flupyradifurone (Sivanto Prime) Contact a UT Extension agent to determine if additional insecticides have been approved to control this pest.	4 - 7 oz	21
Sorghum Midge	chlorpyrifos (Lorsban 4, Nufos 4, Lorsban Advanced 3.775)	8 oz	30
	chlorpyrifos, γ-cyhalothrin (Cobalt Advanced)	6 - 13 oz	30
	chlorpyrifos, Z-cypermethrin (Stallion)	3.75 - 11.75 oz	30
	methomyl (Lannate LV 2.4)	12 - 24 oz	14
	esfenvalerate (Asana XL 0.66)	2.9 - 5.8 oz	21

Suggestions for Chemical Control of Sorghum Insects

Insect Pest	Insecticide	Rate Product Per Acre	Pre-Harvest Days (Grain) *
Sorghum Midge	spinosad (Blackhawk 36% WDG), suppression	1.5 - 3.3 oz	21
	β-cyfluthrin (Baythroid XL 1)	1 - 1.3 oz	14
	γ-cyhalothrin (Declare 1.25)	0.77 - 1.02 oz	21
	λ-cyhalothrin (Karate 2.08, Warrior II)	0.92 - 1.23 oz	30
	Z-cypermethrin (Mustang Max 0.8)	1.28 - 4 oz	14
Corn Earworms	carbaryl (Sevin 80S)	1.25 - 2.5 lb	21
	carbaryl (Sevin XLR 4)	16 - 32 oz	21
	chlorantraniliprole (Prevathon 0.43 SC)	14 - 20 oz	14
	chlorantraniliprole, λ-cyhalothrin (Besiege)	6 - 10 oz	30
	chlorpyrifos (Lorsban 4, Nufos 4, Lorsban Advanced 3.775)	32 oz	60
	chlorpyrifos, γ-cyhalothrin (Cobalt Advanced)	16 - 38 oz	See label
	chlorpyrifos, Z-cypermethrin (Stallion)	5 - 11.75 oz	30
	methomyl (Lannate LV 2.4)	24 oz	14
	NPV virus (Heligen) ***	1 - 1.4 oz	0
	spinosad (Blackhawk 36% WDG)	1.7 - 3.3 oz	21
	esfenvalerate (Asana XL 0.66) ****	2.9 - 5.8 oz	21
	β-cyfluthrin (Baythroid XL 1) ****	1.3 - 2.8 oz	14
	γ-cyhalothrin (Declare 1.25) ****	1.02 - 1.54 oz	21
	λ-cyhalothrin (Karate 2.08, Warrior II) ****	1.23 - 1.85 oz	30
	Z-cypermethrin (Mustang Max 0.8) ****	1.76 - 4 oz	14
Sorghum Webworm	carbaryl (Sevin 80S)	1.25 - 2.5 lb	21
	carbaryl (Sevin XLR 4)	16 - 32 oz	21
	chlorantraniliprole (Prevathon 0.43 SC)	14 - 20 oz	14
	chlorantraniliprole, λ-cyhalothrin (Besiege)	6 - 10 oz	30
	chlorpyrifos (Lorsban 4, Nufos 4, Lorsban Advanced 3.775)	16 - 32 oz	30-60, see label
	chlorpyrifos, γ-cyhalothrin (Cobalt Advanced)	16 - 38 oz	See label
	chlorpyrifos, Z-cypermethrin (Stallion)	5 - 11.75 oz	30

Suggestions for Chemical Control of Sorghum Insects

Insect Pest	Insecticide	Rate Product Per Acre	Pre-Harvest Days (Grain) *
Sorghum Webworm	methomyl (Lannate LV 2.4)	24 oz	14
	spinosad (Blackhawk 36% WDG)	1.7 - 3.3 oz	21
Fall Armyworm	carbaryl (Sevin 80S)	1.25 - 2.5 lb	21
	carbaryl (Sevin XLR 4)	32 - 64 oz	21
	chlorantraniliprole (Prevathon 0.43 SC)	14 - 20 oz	14
	chlorantraniliprole, λ -cyhalothrin (Besiege)	6 - 10 oz	30
	chlorpyrifos (Lorsban 4, Nufos 4, Lorsban Advanced 3.775)	16 - 32 oz	30-60, see label
	chlorpyrifos, γ -cyhalothrin (Cobalt Advanced)	24 - 38 oz	See label
	chlorpyrifos, Z-cypermethrin (Stallion), suppression	9.25 - 11.75 oz	30
	methomyl (Lannate LV 2.4)	12 - 24 oz	14
	methoxyfenozide (Intrepid 2F)	8 - 10 oz	21
	spinosad (Blackhawk 36% WDG)	1.7 - 3.3 oz	21
	β -cyfluthrin (Baythroid XL 1) ****	1.3 - 2.8 oz	14
	γ -cyhalothrin (Declare 1.25) ****	1.02 - 1.54 oz	21
	λ -cyhalothrin (Karate 2.08, Warrior II) ****	1.23 - 1.85 oz	30
Z-cypermethrin (Mustang Max 0.8) ****	1.76 - 4 oz	14	
Stink Bugs	carbaryl (Sevin 80S)	1.5 - 2.5 lb	21
	carbaryl (Sevin XLR 4)	38 - 64 oz	21
	chlorpyrifos, γ -cyhalothrin (Cobalt)	16 - 38 oz	See label
	chlorpyrifos, Z-cypermethrin (Stallion)	5 - 11.75 oz	30
	β -cyfluthrin (Baythroid XL 1)	1.3 - 2.8 oz	14
	γ -cyhalothrin (Declare 1.25)	1.02 - 1.54 oz	21
	λ -cyhalothrin (Karate 2.08, Warrior II)	1.23 - 1.85 oz	30
	Z-cypermethrin (Mustang Max 0.8)	1.76 - 4 oz	14

* Waiting period from insecticide application until grain harvest.

** Controls are usually unnecessary for corn leaf aphids.

*** NPV virus (Heligen) will only control corn earworm. Applications should be made when larvae are small. Do not apply if most larvae are large or if infestations are well above treatment threshold.

**** Pyrethroid insecticides may not provide adequate control of corn earworm or fall armyworm and are not recommended if infestations are well above the treatment threshold.