

2009 Wheat Insect Control Recommendations

Many farmers in Tennessee use wheat as a double-crop with soybeans. As with any crop, wheat has several insect pests that may reduce yields if not effectively controlled in the field. Yields can be improved if more producers take time to inspect their fields during the growing season for insect pests. This publication is designed to acquaint the producer with the major insect pests of wheat, the damage they cause and measures used to control the pests.

Aphids

Several aphids feed on the leaves and grain heads of wheat. These pests are significant in that they are capable of transmitting diseases to the plant, such as barley yellow dwarf virus, in addition to the damage inflicted by their feeding habits. Adult aphids are only about 1/8 inch long, and adults may or may not have two pair of nearly transparent wings.

Oat-Bird Cherry Aphid

is dark green and is responsible for transmission of the barley yellow dwarf virus. This is usually the most common aphid observed in wheat.

Corn Leaf Aphid

is bluish-green and all of the legs, cornicles and antennae are black.

Greenbug

is pale green, usually with a dark green stripe down the back of the wingless forms. The tips of the legs and cornicles are black, and the antennae are mostly black.

Rice Root Aphid

occurs on the roots of wheat and has been known to transmit barley yellow dwarf virus.

Armyworms

Armyworms can be serious pests of wheat when populations reach large numbers. Armyworms get their name from their migrating habit, as they sometimes start at one portion of the field and devour everything in their path.

True Armyworm

Damaging infestations of true armyworm normally occur in the spring. Mature larvae are smooth, almost without any hairs, greenish-brown to reddish-brown, with a dark stripe along each side. A broad dorsal stripe runs down the length of the back. This species differs from the fall armyworm by having a dark lateral band

on the outer portion of each proleg. Besides feeding on foliage, larvae will sometimes cut the heads of maturing wheat plants.

Fall Armyworm

As the name implies, the fall armyworm is normally a pest of early-planted seedling wheat. These insects can completely defoliate a wheat field when populations are very large. This insect differs from the true armyworm by having a prominent inverted Y on the front of the head and no dark bands on the outer portion of the prolegs.

Other Pests

Hessian Fly

These small insects have been responsible for tremendous wheat losses in the past. Hessian fly larvae feed on stems at the base of plants, hidden behind the leaf sheaths. Larvae are reddish at first emergence and turn white or greenish white; they are shiny and without legs. Larvae are legless, resembling small grains of rice, and are approximately 1/4 inch long when full grown. The pupae, or flax seed stage, are brown but otherwise similar to the larvae. Tennessee typically does not have significant problems with this pest. However, early-planted wheat is susceptible to infestation. Planting after October 15 (i.e., the “fly free date”) will greatly reduce the likelihood of serious Hessian fly infestations. Also, avoid planting wheat as a cover crop prior to the fly free date. Volunteer wheat is a good fall host for this pest, and any volunteer wheat should be destroyed before September. Plowing under wheat stubble after harvest may help reduce subsequent infestations in the fall. Although some varieties are available with resistance to Hessian flies, there are no varieties with adequate resistance to the fly biotype most common in Tennessee (Biotype L).

Cereal Leaf Beetle

The cereal leaf beetle is a pest of wheat, oats, barley and other cereal crops. It has been found in most all counties in Tennessee, and may be present from April - June. The larvae are pale yellow and soft-bodied, but the larvae are normally covered with their fecal material, giving them a dark, gooey, shiny appearance. Adults are shiny, black beetles with red legs and thorax and are approximately 3/16 inch long. Adults and larvae skeletonize the leaf tissue between the veins.

Suggested Economic Threshold Levels

Corn Leaf, Oat-Bird Cherry, and Rice Root Aphid

No thresholds have been established in Tennessee. Treatment should be made when heavy populations are causing leaves to dry up and die in several portions of the field. An insecticide seed treatment such as Gaucho or Cruiser can be used to reduce transmission of barley yellow dwarf virus. Data suggest that early-planted wheat is most likely to benefit from use of a seed treatment. Foliar insecticide applications in the fall can also reduce transmission of barley yellow dwarf virus, but they must be applied before aphid populations are already established in the field.

Greenbug

This aphid injects a toxin while feeding. Treatment should be made when aphids are killing three or more leaves per plant. For wheat less than 6 inches tall, treatment should also be considered if greenbugs number 50 or more per linear foot. Treatment should also be made if greenbugs number 200 or more per foot in wheat 6-10 inches tall.

Armyworms

Treatment for fall armyworm should be considered when four or more larvae are present per square foot (16 per 4 square feet). For true armyworm, use a threshold of 6-8 larvae per square foot if wheat is still in the milk stage. Once past the milk stage, wheat can tolerate higher populations, and treatment is not usually recommended unless larvae are cutting wheat heads.

Hessian Fly

Foliar applied insecticides are difficult to time and only marginally effective. Plant after the fly free date (October 15) and use resistant varieties if they are available. Resistant varieties may help suppress Hessian fly populations, although no varieties provide adequate resistance to Biotype L. Insecticide seed treatments (e.g., Cruiser and Gaucho) will provide some suppression of fall infestations of Hessian fly.

Cereal Leaf Beetle

Check 10 plants per sample site for larvae and adults. Treatment is necessary if one larva and/or adult is present per stem.

Recommended Chemical Controls for Wheat Insects

Insect	Insecticide (Trade Names)	Rate/Acre
Aphids	Seed Treatments	
	imidacloprid (Gaucho 600)	0.8 – 2.4 oz per 100 lb seed
	thiamethoxam (Cruiser 5)	0.75 – 1.33 oz per 100 lb seed
	Foliar Treatments	
	dimethoate 4*	8 – 12 oz
	methomyl (Lannate LV 2.4)*	0.75 – 1.5 pt
	methyl parathion 4 (Methyl 4)*	0.5 – 1.5 pt
	β-cyfluthrin (Baythroid XL 1)	1.8 – 2.4 oz
	γ-cyhalothrin (Prolex 1.25)	1.54 oz
	λ-cyhalothrin (Karate 2.08, Warrior II)	1.28 – 1.92 oz
	Z-cypermethrin (Mustang Max 0.8)	3.2 – 4.0 oz

Armyworms (True & Fall)	carbaryl (Sevin XLR Plus 4)	1 – 1.5 qt
	methyl parathion 4 (Methyl 4)*	1.5 pt
	methomyl (Lannate LV 2.4)*	0.75 – 1.5 pt
	spinosad (Tracer 4)	1.5 – 3 oz
	β -cyfluthrin (Baythroid XL 1)	1.8 – 2.4 oz
	γ -cyhalothrin (Prolex 1.25)	1.02 – 1.54 oz
	λ -cyhalothrin (Karate 2.08, Warrior II)	1.28 – 1.92 oz
	Z-cypermethrin (Mustang Max 0.8)	3.2 – 4.0 oz
Cereal Leaf Beetle	carbaryl (Sevin XLR Plus 4)	1 qt
	methomyl (Lannate LV, 2.4)*	0.75 – 1.5 pt
	spinosad (Tracer 4)	1 – 3 oz
	β -cyfluthrin (Baythroid XL 1)	1.0 – 1.8 oz
	γ -cyhalothrin (Prolex 1.25)	1.02 – 1.54 oz
	λ -cyhalothrin (Karate 2.08, Warrior II)	1.28 – 1.92 oz
	Z-cypermethrin (Mustang Max 0.8)	1.76 – 4.0 oz

* Use extra caution when handling these insecticides.