



Current Report

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Management of Insect and Mite Pests of Small Grains

Tom A. Royer
Extension Entomologist

K. L. Giles
Associate Professor

Arthropod pests of small grains are varied, and sometimes difficult to manage. 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. Some small grain pest problems can be avoided by following good cultural practices, such as selecting varieties that are adapted to Oklahoma growing conditions, planting at an optimal date and providing proper fertilization and good weed control. 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. Refer to the following OSU publications for additional information:

- F-7176 Common Insect and Mite Pests of Small Grains
- F-7183 Small Grain Aphids in Oklahoma
- E-831 Wheat Management in Oklahoma
- F-2586 Wheat for Pasture
- F-7196 Grasshopper Management in Rangeland, Pasture and Crops

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product per Acre</i>	<i>Comments</i>
Aphids	Planting Time		
Corn leaf aphid: blue green with black legs, cornicles and antennae, antennae less than 1/2 length of body	Cruiser 5FS	0.75-1.33 fl oz/cwt seed	Wheat and barley: No grazing restriction. Do not use treated seed as feed.
English grain aphid: lime green, "spindly legs" with black antennae, cornicles and legs. Antennae more than 1/2 length of body	Gaucho 480	1-3 fl oz/cwt seed	Wheat and barley: 45 day waiting period for grazing. Do not use treated seed as feed.
	Post-Plant		
Bird cherry oat aphid: olive green with brownish-red spot on back around base of cornicles	Dimethoate 4E	0.5-0.75 pt	Wheat only: 14 day waiting period for grazing, 35 day waiting period for harvest. Two applications per season.
Rice root aphid is similar in appearance to bird cherry oat aphid, but tends to feed on crown, beneath the soil	Di-Syston 8	4-12 fl oz	Wheat and barley only: 1.0 lb rate in wheat for fall application only. Do not graze, 30 day waiting period for harvest.
<u>Damage:</u> Corn leaf aphid and English grain aphid do not usually require control.	Lannate	0.75-1.5 pt	10 day waiting period for grazing, 7 day waiting period for harvest.
Bird cherry oat aphid can reduce yield, and is an important vector of Barley Yellow Dwarf virus	Lorsban 4E	0.5-1 pt	14 day waiting period for grazing, 28 day waiting period for harvest. Two applications per season.
<u>Threshold:</u> Treat for bird cherry oat aphids if numbers exceed 30 per stem	Malathion	1.5 pt	7 day waiting period for grazing or harvest.
	Methyl parathion 4 EC	0.5-1.5 pt	15 day waiting period for grazing or harvest. Temperatures should be above 50° for application.
	Mustang MAX	3.2-4.0 fl oz	14 day waiting period for grazing or harvest.

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product per Acre</i>	<i>Comments</i>
Consider using low rate of seed treatment if planting for forage + grain There is no threshold for English grain aphid, corn leaf aphid, or rice root aphid	Warrrior	2.56-3 84 fl oz	Wheat, wheat hay, and triticale 30 day waiting period for grazing or harvest Do not apply more than 0 06 lb ai / season
Army cutworm Gray striped caterpillar that curls up in to a tight "C" when disturbed Evident from January through March	Lorsban 4E	1 76-4 0 fl oz	14 day waiting period for grazing, 28 day waiting period for harvest Two applications per season
<u>Damage</u> Cuts plants at soil line, can kill plants if it enters the crown	Mustang MAX	1-2 fl oz	14 day waiting period for grazing or harvest
<u>Threshold</u> 2-3 caterpillars per foot of row if conditions are dry, if moisture is adequate, 4-5 per foot of row	Warrrior	1 92-3 20 fl oz	Wheat, wheat hay, and triticale 30 day waiting period for grazing or harvest Do not apply more than 0 06 lb ai / season
Armyworm Dark green or brown caterpillar with 5 stripes along body.	Lannate	0 75-1 5 ptr	10 day waiting period for grazing, 7 day waiting period for harvest
<u>Damage</u> Feed on flag leaf, awns and may "clip" heads	Methyl parathion 4E	1 5 pt	15 day waiting period for grazing or harvest Temperatures should be above 50° for application
<u>Threshold</u> Treat if 4-5 unparasitized armyworms are found per ft of row.	Mustang MAX	1 76-4 0 fl oz	14 day waiting period for grazing or harvest
	Pennacap-M	2-3 pt	15 day waiting period for grazing or harvest
	Sevin XLR	1-1 5 qt	21 day waiting period for harvest, apply when temperatures are expected to exceed 55°
	Tracer	0 5-3 fl oz	14 day waiting period for grazing, 21 day waiting period for harvest
	Warrrior	2 6-3 8 fl oz	Wheat, wheat hay, triticale 30 day waiting period for grazing or harvest Do not apply more than 0 06 lb ai / season
Brown wheat mite Tiny red to dark brown mites that feed on leaves, associated with dry weather	Dimethoate 4E	0 5-0 75 pt	Wheat only 14 day waiting period for grazing, 35 day waiting period for harvest Two applications per season
<u>Damage</u> Plants appear to be drought stricken	Di-Syston 8	4-12 fl oz (foliar)	Wheat and barley only, do not graze, 30 day waiting period for harvest
<u>Threshold</u> Treat if mites and damage are evident	Lorsban 4E	0 5-1 pt	14 day waiting period for grazing, 28 day waiting period for harvest Two applications per season
	Methyl parathion 4E	1 pt	15 day waiting period for grazing or harvest Temperatures should be above 50° for application

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product per Acre</i>	<i>Comments</i>
Fall armyworm			
Large, brown, green or black caterpillar with stripes, up to 1.5 inches Has a light colored, inverted "Y" on head	Lannate	0.75-1.5 pt	10 day waiting period for grazing, 7 day waiting period for harvest
<u>Damage</u> Eat small plants in Fall	Lorsban 4E	1 pt	14 day waiting period for grazing, 28 day waiting period for harvest Two applications per season
<u>Threshold</u> Treat if 3-4 larvae are found per foot of row AND feeding damage is evident	Methyl parathion 4E	1.5 pt	15 day waiting period for grazing or harvest Temperatures should be above 50° for application
	Mustang MAX	3.2-4.0 fl oz	14 day waiting period for grazing or harvest
	Sevin XLR	1-1.5 qt	21 day waiting period for harvest, apply when temperatures are expected to exceed 55°
	Tracer	0.5-3 fl oz	14 day waiting period for grazing, 21 day waiting period for harvest
	Warrior	2.6-3.8 fl oz	Wheat, wheat hay, triticale 30 day waiting period for grazing or harvest Do not apply more than 0.06 lb ai /season
False wireworm/Wireworm			
Slender, hard bodied, wormlike larvae	Cruiser 5FS	0.75-1.5 fl oz/cwt seed	Wheat and barley Do not use surplus treated seed for feed or food
<u>Damage</u> Feed on kernels and newly germinated plants below the soil surface	Gaucho 480	1.3 fl oz/cwt seed	Wheat and barley 45 day waiting period for grazing Do not use treated seed as feed
<u>Threshold</u> Treat if 2 larvae are found per foot ²	Lindane 30 C	1.35 fl oz/cwt seed 1.4 fl oz/cwt seed	Barley Wheat, rye, oats
Grasshopper			
<u>Damage</u> May occur in mid-May through early June and August through October. May destroy field margins in fall, or chew leaves and clip heads in spring	Dimethoate 4E	0.75 pt	Wheat only 14 day waiting period for grazing, 35 day waiting period for harvest Two applications per season
	Furadan F	0.25-0.5 pt	Do not graze or feed treated forage to livestock
<u>Threshold</u> 7-10 per yd ² in vegetation next to wheat 3 per yd ² in the field See F-7196 for additional information	Lorsban 4E	0.5-1 pt	14 day waiting period for grazing, 28 day waiting period for harvest Two applications per season
	Malathion 5E	1.5 pt	7 day waiting period for grazing or harvest
	Methyl parathion 4E	0.75-1 pt	15 day waiting period for grazing or harvest
	Mustang MAX	3.2-4.0 fl oz	14 day waiting period for grazing or harvest
	PennCap-M	2-3 pt	15 day waiting period for grazing or harvest
	Sevin XLR	0.5-1.5 qt	Wheat only, 21 day waiting period for harvest

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product per Acre</i>	<i>Comments</i>
Greenbug Lime-green aphid with darker green stripe down back. Tips of legs, cornicles, and most of antennae are black.	Seed Treatment Cruiser 5FS	5.1 fl oz/cwt seed	Wheat and barley. No grazing restriction. Do not use treated seed as feed.
	Gaucho 480	1-3 fl oz/cwt seed	Wheat and barley. 45 day waiting periods for grazing. Do not use treated seed as feed.
<u>Damage.</u> Injures plants by injecting toxin, leaves turn yellow, then die. Occasional problem in fall or spring, occurs more commonly in warm, dry conditions.	Post-Plant Dimethoate 4E	0.5-0.75 pt	Wheat only. 14 day waiting period for grazing, 35 day waiting period for harvest. Two applications per season.
<u>Threshold.</u> Treatment thresholds depend on value of crop, and cost of control. To determine treatment threshold, use Greenbug Expert System.	Lorsban 4E	0.5-1 pt	14 day waiting period for grazing, 28 day waiting period for harvest. Two applications per season.
	Malathion	0.5-1.5 pt	7 day waiting period for grazing or harvest.
	Methyl parathion 4E	0.5-1.5 pt	15 day waiting period for grazing or harvest. Temperatures should be above 50° for application.
http://www.pswcr1.ars.usda.gov/gbweb/index.htm			
or contact you local county OCES office for information on determining thresholds and sampling.	PennCap-M	2-3 pt	15 day waiting period for grazing or harvest.
	Warrior	3.84 fl oz	Wheat, wheat hay, and triticale. 30 day waiting period for grazing or harvest. Do not apply more than 0.06 lb ai/season.
Hessian fly <u>Damage.</u> Stunts plants in fall, causes lodging of heads in spring.	Cruiser	0.75-1.5 fl oz/cwt seed	Do not use surplus treated seed for feed or food. Follow label instructions for application and storage conditions.
	Gaucho 480	1-3 fl oz/cwt seed	
Pale western cutworm Caterpillar is gray with no prominent stripes.	Mustang MAX	1.76-4.0 fl oz	14 day waiting period for grazing or harvest.
<u>Damage.</u> Cuts plants below soil surface. Generally found in the Oklahoma Panhandle, about 2-3 weeks later than army cutworm.	Warrior	1.92-3.20 fl oz	Wheat, wheat hay, and triticale. 30 day waiting period for grazing or harvest. Do not apply more than 0.06 lb ai/season.
<u>Threshold.</u> Treat if 2 or more larvae are found per linear foot of row.			
Russian wheat aphid Lime-green colored, "powdery" body, with an elongated, spindle-shaped body. Has a "double tail" appearance when viewed from the side. Lacks prominent cornicles.	Planting Time Cruiser 5FS	0.75-1.33 fl oz/cwt seed	Wheat and barley. No grazing restriction. Do not use treated seed as feed.
	Gaucho 480	1-3 fl oz/cwt seed	Wheat and barley. 45 day waiting period for grazing. Do not use treated seed as feed.
<u>Damage.</u> Infested leaves may have longitudinal white or purple streaks. Leaves may roll up and look like "onion leaves." If heavily infested, plants may become prostrate or flattened.	Post-Plant Dimethoate 4E	0.5-0.75 pt	Wheat only. 14 day waiting period for grazing, 35 day waiting period for harvest. Two applications per season.
<u>Thresholds.</u> Treatment thresholds are variable, depending upon growth stage and crop condition. See F-7183 for treatment guidelines.	Di-Syston 8	4-16 fl oz	Wheat and barley only. 16 oz rate in wheat for fall application only. Do not graze, 30 day waiting period for harvest.
	Furadan 4F	0.3-0.5 pt	Apply with methyl parathion. Do not graze or feed treated forage to livestock.

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product per Acre</i>	<i>Comments</i>
	Lorsban 4E	0.5-1 pt	14 day waiting period for grazing, 28 day waiting period for harvest Two applications per season
	Methyl parathion 4 EC	0.5-1.5 pt	15 day waiting period for grazing or harvest Temperatures should be above 50° for application
	Mustang MAX	3.2-4.0 fl oz	14 day waiting period for grazing or harvest
	Warrior	2.56-3.84 fl oz	Wheat, wheat hay, triticale 30 day waiting period for grazing or harvest Do not apply more than 0.06 lb ai /season
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Wheat curl mite Tiny sausage-shaped mites that feed on leaves and heads		No effective chemical control is registered	Delayed planting and management of volunteer wheat may reduce problems
<u>Damage.</u> They do not cause direct damage, but are a vector for Wheat Streak Mosaic Virus			
<u>Threshold.</u> None			
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White grub "C" shaped, whitish grub with a tan head, and swollen tip of abdomen, measuring up to 1 1/2 inches		No effective chemical control is registered	
<u>Damage.</u> Feed on roots Cause stand loss, poor emergence and thin stands			
<u>Threshold.</u> None			
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Winter grain mite Tiny dark brown mites with red legs and a red spot on its abdomen Prefers cool, moist climate	Di-Syston 8	4-12 fl oz/acre	Wheat and barley only Do not graze, 30 day waiting period for harvest
	malathion	2 pt	7 day waiting period for grazing or harvest
<u>Damage.</u> Leaves appear stunted and silver colored	Methyl parathion 4E	0.5-1.5 pt	15 day waiting period for grazing or harvest Temperatures should be above 50° for application
<u>Threshold.</u> No threshold is established, treat if injury symptoms and mites are present Day time temperatures that exceed 75°F will reduce populations			

Pre-harvest Intervals and grazing restrictions.

Cruiser 5FS	no grazing restriction.
Dimethoate	14 day PHI for grazing, 35 days for harvest Do not make more than 2 applications per season
Di-Syston 8	Check label for various restrictions
Furadan 4F	DO NOT GRAZE See label for further restrictions.
Gaucho 480	45 day PHI for harvest or grazing
Lorsban 4E	14 day PHI for grazing, 28 day PHI for harvest. Two applications per season
Malathion	7 day PHI for grazing or harvest.
Methomyl	10 day PHI for grazing 7 day PHI for harvest
Mustang Max	14 day PHI for grazing or harvest.
Parathion-methyl	15 day waiting period for grazing or harvest
Penncap-M	15 day waiting period for grazing or harvest
Sevin XLR	0 day PHI for grazing, 21 day PHI for harvest.
Tracer	14 day PHI for grazing, 21 day PHI for harvest
Warrior	30 day PHI for harvest or grazing.

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- 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

If you do not fully understand directions on the label, ask your OSU County Extension Educator, OSU Area Extension Agronomist or Entomologist, or contract the OSU Extension Entomologists in Stillwater to assist you in a correct interpretation.

All pesticides are poisonous and should be used with extreme caution. **BE SURE TO FOLLOW THE MANUFACTURER'S INSTRUCTIONS.**

The pesticide information presented in this publication was current with federal and state regulations at the time of printing. The user is responsible for determining that the intended use is consistent with the label of the product being used. Use pesticides safely. Read and follow label directions. The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

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