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Management of Insect and Mite Pests in Sunflowers

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Pesticide recommendations in this publication were correct as of the "Modified Date" but always check the label that came with the purchased insecticide for the most current rates and restrictions. 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.

The number [in brackets] following a product is its Mode of Action number [MOA]. The first name listed is the trade name of a product registered for use in sunflowers for the listed pest. The pesticide name in (parentheses) is the active ingredient name and can be used to select other registered products containing the same active ingredient if available for sale in Oklahoma. Such products may cost less, so producers should compare prices. Refer to the following publications for additional information on sunflower pest management.

EPP-7196 Grasshopper Management in Rangeland, Pastures, and Crops (OSU)
MF2384 High Plains Sunflower Production Handbook (Kansas State) http://www.ksre.ksu.edu/library/crpsl2/mf2384.pdf

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Pest, Damage, and Treatment Threshold	*Insecticide Formulation and (MOA Group)*	*Rate of Product per Acre*	*Comments*
Cutworms (black, granulate, sandhill) Striped or solid colored, robust caterpillars that "roll" up when disturbed, and prefer to live under ground. 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, causing stand reductions. Threshold: Scout fields at seedling emergence. Threshold is one cutworm per square foot combined with a 25% stand reduction. Treat when worms are less than ½ inch long.	Asana XL [3] (esfenvalerate)	5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A)	28 day waiting period for harvest for harvest, do not graze.
	Baythroid XL [3] (beta-cyfluthrin)	0.8 to 1.6 fl oz (0.0065 to 0.0125 lb ai/A)	30 day waiting period for harvest for harvest, do not graze.
	Cobalt [1B,3] (chlorpyrifos + gamma cyhalothrin)	19 to 38 fl oz	45 day waiting period for harvest for harvest, do not graze.
	Delta Gold [3] (deltamethrin)	1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A)	21 day waiting period for harvest for harvest, do not graze.
	Karate w Zeon [3] (lambda cyhalothrin)	0.96 to 1.60 fl oz (0.015 to 0.025 lb ai/A)	45 day waiting period for harvest for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	2 pts (1 lb ai/A)	42 day waiting period for harvest for harvest, do not graze.
	Mustang MAX EC [3] (zeta-cypermethrin)	2.24 to 4 fl oz (0.008 to 0.025 lb ai/A)	30 day waiting period for harvest for harvest, do not graze.
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	1.92 to 3.2 fl oz (0.0075 to 0.0125 lb ai/A)	45 day waiting period for harvest for harvest.

Pest, Damage, and Treatment Threshold	*Insecticide Formulation and (MOA Group)*	*Rate of Product per Acre*	*Comments*
Grasshopper 1-2 inches long, outer wings leathery, inner wings clear or colored. Enlarged hind legs designed for jumping. Damage: Chew leaves, leaving ragged edges or completely chewing leaf blade. Damage developing seed heads, causing yield loss. Threshold: See EPP-7196: Grasshopper Management in Rangeland, Pastures, and Crops	Asana XL [3] (esfenvalerate)	5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A)	28 day waiting period for harvest for harvest, do not graze.
	Baythroid XL [3] (beta-cyfluthrin)	2.0 to 2.8 fl oz (0.016 to 0.022 lb ai/A)	30 day waiting period for harvest for harvest, do not graze.
	Cobalt [1B,3] (chlorpyrifos + gamma cyhalothrin)	7 to 13 fl oz	45 day waiting period for harvest for harvest, do not graze.
	Delta Gold [3] (deltamethrin)	1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A)	21 day waiting period for harvest for harvest, do not graze.
	Karate w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A)	45 day waiting period for harvest for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	2 pts (1 lb ai/A)	42 day waiting period for harvest for harvest, do not graze.
	Mustang MAX EC [3] (zeta-cypermethrin)	2.6 to 4 fl oz (0.016 to 0.025 lb ai/A)	30 day waiting period for harvest for harvest, do not graze.
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A)	45 day waiting period for harvest for harvest.
Foliar-feeding caterpillars (painted lady, woolly bear) Various caterpillars, painted lady and woolly bear caterpillars have hairy bodies. Damage: Feed on leaves Threshold: Treat when defoliation exceeds 25% and caterpillars are still present.	Cobalt [1B,3]	19 to 38 fl oz	45 day waiting period for harvest for harvest, do not graze.
	Karate w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A)	45 day waiting period for harvest for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	1 to 1.5 pt (1 lb ai/A)	(woolly bear caterpillars only, 42 day waiting period for harvest, do not graze.)
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A)	45 day waiting period for harvest.
Seed weevils (Red and Gray) Reddish weevil about 1/8 inch long, and grey weevil about 1/4 inch long. Larvae are white, about 1/6 inch long when mature. Damage: Larvae feed inside seed, cut exit hole when mature, and burrow into ground. Threshold: Scout for red weevil when 85% of plants are past R-4 growth stage. Treat when counts exceed 10 weevils per head. Continue to scout to determine if second spray is needed.	Asana XL [3] (esfenvalerate)	5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A)	28 day waiting period for harvest for harvest, do not graze.
	Baythroid XL [3] (beta-cyfluthrin)	2.0 to 2.8 fl oz (0.016 to 0.022 lb ai/A)	30 day waiting period for harvest.
	Cobalt [1B,3] (chlorpyrifos + gamma cyhalothrin)	19 to 38 fl oz	45 day waiting period for harvest.
	Delta Gold [3] (deltamethrin)	1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A)	21 day waiting period for harvest.
	Karate w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A)	45 day waiting period for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	1.0 to 1.5 pt (0.5 to 0.75 lb ai/A)	42 day waiting period for harvest.
	Mustang MAX EC [3] (zeta-cypermethrin)	2.6 to 4 fl oz (0.016 to 0.025 lb ai/A	30 day waiting period for harvest.
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A)	45 day waiting period for harvest.

Pest, Damage, and Treatment Threshold	*Insecticide Formulation and (MOA Group)*	*Rate of Product per Acre*	*Comments*
Stem weevil 1/8 inch long, grayish-brown with varying white spots on wing covers. Adults emerge in mid- to late June. Damage: Adults insert eggs in stalks. Larval feeding causes weakening of stalk, easily lodged heads. Threshold: Begin scouting in mid-June. Treat when counts reach one weevil per three plants. In areas with history of problem, treat when plants reach 8 to 10 leaf stage if planted before June 1.	Asana XL [3] (esfenvalerate)	5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A)	28 day waiting period for harvest for harvest, do not graze.
	Baythroid XL [3] (beta-cyfluthrin)	1.6 to 2.4 fl oz (0.013 to 0.019 lb ai/A)	30 day waiting period for harvest, do not graze.
	Cobalt [1B,3] (chlorpyrifos + gamma cyhalothrin)	19 to 38 fl oz	45 day waiting period for harvest, do not graze.
	Delta Gold [3] (deltamethrin)	1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A)	21 day waiting period for harvest, do not graze.
	Karate w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A)	45 day waiting period for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	1.0 to 1.5 pt (0.5 to 0.75 lb ai/A)	42 day waiting period for harvest, do not graze.
	Mustang MAX EC [3] (zeta-cypermethrin)	2.6 to 4 fl oz (0.016 to 0.025 lb ai/A	30 day waiting period for harvest, do not graze.
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A)	45 day waiting period for harvest.
Sunflower beetle Similar to Colorado potato beetle, light yellow with dark brown stripes and measures about ¾ inch long. Larvae are yellow and humpbacked. Damage: Feed on foliage, chewing holes in leaves. Thresholds: Seedlings: One adult per plant. Larger plants: 10 to 15 larvae + 25% defoliation.	Asana XL [3] (esfenvalerate)	1.45 to 5.8 fl oz (0.0075 to 0.03 lb ai/A)	28 day waiting period for harvest for harvest, do not graze.
	Baythroid XL [3] (beta-cyfluthrin)	0.8 to 1.6 fl oz (0.007 to 0.013 lb ai/A)	30 day waiting period for harvest, do not graze.
	Cobalt [1B,3] (chlorpyrifos + gamma cyhalothrin)	19 to 38 fl oz	45 day waiting period for harvest, do not graze.
	Delta Gold [3] (deltamethrin)	1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A)	21 day waiting period for harvest, do not graze.
	Karate w Zeon [3] (lambda cyhalothrin)	0.96 to 1.60 fl oz (0.015 to 0.025 lb ai/A)	45 day waiting period for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	1.0 to 1.5 pt (0.5 to 0.75 lb ai/A)	42 day waiting period for harvest, do not graze.
	Mustang MAX EC [3] (zeta-cypermethrin)	2.6 to 4 fl oz (0.016 to 0.025 lb ai/A	30 day waiting period for harvest, do not graze.
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	1.92 to 3.2 fl oz (0.0075 to 0.0125 lb ai/A	45 day waiting period for harvest.
	Sevin XLR [1A] (carbaryl)	1 to 1.5 quarts (1 to 1.5 lb ai/A)	30 day wait for grazing, 60 days for harvest.

Pest, Damage, and Treatment Threshold	*Insecticide Formulation and (MOA Group)*	*Rate of Product per Acre*	*Comments*
Sunflower (Head) moth Adult is small white moth, 3/8 inch long that folds wings around body when resting. Larvae are brown/purple with longitudinal white stripes. Damage: Young larvae feed on pollen and florets. Older larvae burrow into head and feed on developing seed. Larvae spin webbing on surface of flower head. Damage enables head rots to develop. Threshold: Begin scouting when flowers first open and scout every few days. It is best to scout in evening with flashlight. Treat when moth numbers reach 1 to 2 moths per five plants at 20% bloom.	Asana XL [3] (esfenvalerate)	5.8 to 9.6 fl oz (0.03 to 0.05 lb ai/A)	28 day waiting period for harvest for harvest, do not graze.
	Baythroid XL [3] (beta-cyfluthrin)	2.0 to 2.8 fl oz (0.016 to 0.022 lb ai/A)	30 day waiting period for harvest, do not graze.
	Cobalt [1B,3] (chlorpyrifos + gamma cyhalothrin)	19 to 38 fl oz	45 day waiting period for harvest, do not graze.
	Delta Gold [3] (deltamethrin)	1.0 to 1.5 fl oz (0.012 to 0.018 lb ai/A)	21 day waiting period for harvest, do not graze.
	Karate w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.02 to 0.03 lb ai/A)	45 day waiting period for harvest.
	Lorsban 4E [1B] (chlorpyrifos)	1.0 to 1.5 pt (0.5 to 0.75 lb ai/A)	42 day waiting period for harvest, do not graze.
	Methyl parathion [1B]	1 lb ai/A	30 day waiting period for harvest, do not graze.
	Mustang MAX EC [3] (zeta-cypermethrin)	2.6 to 4 fl oz (0.016 to 0.025 lb ai/A	30 day waiting period for harvest, do not graze.
	Proaxis 0.5 CS [3] (gamma-cyhalothrin)	2.56 to 3.84 fl oz (0.01 to 0.015 lb ai/A)	45 day waiting period for harvest.

Pre-harvest Intervals

Asana[r] XL	28 day PHI, do not feed or graze
Baythroid[r] 2, XL	30 day PHI for harvest or grazing
Cobalt[r]	45 day PHI, do not feed or graze
Delta Gold[r]	21 day PHI, do not feed or graze
Furadan[r] 4F	**All uses were canceled as of 12/31/2009**
Karate[r] w Zeon	45 day PHI
Lorsban[r] 4E	42 day PHI, do not feed or graze
Methyl parathion[r]	30 day PHI, do not feed or graze
Mustang[r] MAX EC	30 day PHI, do not feed or graze
Proaxis[r]	30 Day PHI
Sevin XLR	30 day PHI for grazing, 60 day PHI for harvest

[r] = Restricted Use

* MOA group numbers in brackets [#] 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.

** The first name listed is a commercial trade name of a product. The chemical name in parentheses refers to the name of the active ingredient and is included because there are a number of registered products that are contain the same active ingredient. Such products may be less expensive to purchase, so producers should compare prices.

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