

## ALFALFA FORAGE INSECT CONTROL SUGGESTIONS

To protect insect pollinators, do not spray during full bloom. If necessary to control insects for maximum seed production, use insecticides least damaging to pollinators.

Insect and Time Most Prevalent	Damage and/or Insect Description	Insecticide (MOA Group) <sup>1</sup>	Amount Per Acre	Comments	
<b>Alfalfa Seed Chalcid</b> June to September	Small wasp. Two to three generations per year.	Proaxis <sup>®</sup> (3)	2.56-3.84 oz	<sup>2</sup> See footnotes on alfalfa chalcid.	
		Warrior <sup>®</sup> (3)	2.56-3.84 oz		
<b>Alfalfa Weevil</b>	Light green to green larvae with white to yellowish-white stripe down back paralleled by 2 faint white stripes on either side. Black head capsule. Skeletonizes leaves, causing an over-all grayish to whitish cast.	Pounce 25WP <sup>®</sup> (3)	5.4-12.8 oz	See restrictions at end of section. Lower rates (<0.2 lb AI/A) of permethrin have not been highly effective on heavy weevil populations. Lower rates (0.1) may serve to reduce (not eliminate) feeding under the windrow by moderate weevil populations when used just before (0-3 days) harvest.	
Affects mainly the first cutting. Usually one generation per year.		Warrior <sup>®</sup> (3)	2.56-3.84 oz		
Note: There are no alfalfa varieties adapted to Oklahoma conditions that are highly resistant to the alfalfa weevil; (3) however, some varieties show tolerance to this pest.		Baythroid XL <sup>®</sup> (3)	1.6-2.8 oz	Note: To enhance resistance management of budworm/ boll-complex in any nearby cotton do not apply pyrethroids group to alfalfa from mid-May to late July.	
		Malathion 5E (1B)	1.5-2.0pt		May cause some degree of burn to crop, depending on temperature.
		Sevin XLR (1A)	1.5 qts		Steward- Best when applied with at least 6 inches growth.
		Steward EC (22A)	6.7-11.3 oz		
		Lannate LV (1A)	3.0 pts		
Proaxis (3)	2.56-3.84 oz				
	Silencer (3)	2.56-3.84 oz			
		MustangMAX (3)	2.24-4.0 oz		
Application information: Begin when 1.5-2 larvae per stem are found. This will equate to about 40 or more larvae per square foot. See Current Report CR-7177 for a definitive, more precise method indicating when to spray based on the degree-day concept.					
For ground applicaiton, use 10-15 gal of total mix per acre. Use 15-20 gal when plants are rand and dense. For best results, by aircraft use 2 gal; 3 gals or more in heavy foliage.					
<b>Army Cutworm</b> February and March, sometimes to April.	Consumes new growth. Especially damaging to newly planted stands. Economic injury level is 3-4 larvae per sq ft when larvae are 0.5 inch or less in length; 2-3 larvae per sq ft when they are over 0.5 inch in length.	Pounce 25WP <sup>®</sup> (3)	3.2-12.8 oz	See comments: end of section. These materials may fail under heavy cutworm pressure. See chemical restrictions under alfalfa weevil section.	
		Baythroid XL <sup>®</sup> (3)	1.6-2.8 oz		
		Warrior <sup>®</sup> (3)	1.92-3.2 oz		
		Proaxis <sup>®</sup> (3)	1.92-3.2 oz		
		Javelin (11B2)	0.25-1.5 lbs		<i>Bacillus thuringiensis</i> (B.t.) 0 day*
		Silencer(3)	1.92-3.20 oz		
		Sevin XLR (1A)	1.5 qts		
		MustangMAX <sup>®</sup> (3)	2.24-4.0 oz		
<b>Blister Beetles</b>	Destroys foliage and flowers. Beetle bodies contain cantharidin, a toxic substance that can be detrimental to livestock,	Silencer(3)	2.56-3.84/oz	See restrictions at end of section. Heavy numbers of blister beetles in hay may cause sickness or death to horses. See OSU Fact Sheet EPP-2072 for more information.	
Spring and Summer					
Earliest on record in Oklahoma - May 14.					

<i>Insect and Time Most Prevalent</i>	<i>Damage and/or Insect Description</i>	<i>Insecticide (MOA Group)<sup>1</sup></i>	<i>Amount Per Acre</i>	<i>Comments</i>
Latest on record in Oklahoma - October 21.	Regardless of whether beetles are dead or alive	Warrior <sup>r</sup> (3) Proaxis <sup>r</sup> (3) Sevin XLR (1A)	2.56-3.84 oz 2.56-3.84 oz 0.5-1.0 qt	
<b>Clover Leaf Weevil</b> Spring		Proaxis <sup>r</sup> (3) Warrior <sup>r</sup> (3) Silencer <sup>r</sup> (3)	2.56-3.84 oz 2.56-3.84 oz 2.5-3.84/oz	
Closely resembles Alfalfa Weevil. Full grown larva 0.5 inch long, green to yellowish green, has pale white stripe down center of back and brown head capsule				
<b>Grasshoppers</b> May to frost	Destroys foliage, usually starting at field borders.	Silencer <sup>r</sup> (3) Dimethoate4E (1B) Proaxis <sup>r</sup> (3) Malathion 5E (1B) Warrior <sup>r</sup> (3) Baythroid XL <sup>r</sup> MustangMAX <sup>r</sup> (3) Vantacor (28)	2.56-3.84/oz 0.5-1.0 pt 2.56-3.84 oz 1.5-2.0 pt 2.56-3.84 oz 2.0-2.8 oz 2.8-4.0 oz 0.7-1.7 oz	Apply foliary when grasshopper populations reach local established thresholds to prevent crop damage
<b>Leafhoppers and Lygus Bugs</b> Summer months	Small jumping or flying insects. Cause yellowing of leaves.			Leafhopper rate only. Plant bug rate only. See restrictions at end of section.  Greatest damage by Lygus Bugs is to seed production. To protect pollinators, apply insecticides before bloom. Lannate is not labeled for leafhoppers.
		Dimethoate 4E (1B) Malathion 5E (1B) Lannate LV <sup>r</sup> (1A)	0.5-1.0 pt 1.5-2.0 pt 1.5-3.0- pts	
		Baythroid XL <sup>r</sup> (3)	0.8-2.8 oz	For leafhoppers, consider yield potential and stand age before deciding to treat. Recommendations should be based on plant height and number of leafhoppers per 20 sweeps across each 40-acre block of alfalfa.
<b>Alfalfa Height (Inches)</b>	<b>Leafhoppers in 20 sweeps</b>			
3	4	Pounce 25WP <sup>r</sup> (3) Warrior <sup>r</sup> (3)	6.4-12.8 oz 1.92-3.2 oz	Up to 3.84 oz for lygus bug.
6	10	Baythroid XLR <sup>r</sup> (3) Silencer <sup>r</sup> (3) Proaxis <sup>r</sup> (3)	0.8-2.8 oz 1.92-3.84/oz 1.92-3.84 oz	Leafhoppers only.
		MustangMAX <sup>r</sup> (3) Sevin XLR (1A) Methomyl <sup>r</sup> (1A)	2.24-4.0 oz 1.0-1.5 qts 1.5-3.0 pts	
<b>Defoliating Caterpillars</b> (Alfalfa Caterpillar, Green Cloverworm, Corn Earworm, Armyworm, Webworms)	See OSU EPP- 7159 for detailed description of each species	Lannate LV <sup>r</sup> (1A) Sevin XLR (1A)	0.75-3.0 pt 1.0-1.5 qts	See restrictions at end of section. Read insecticide label carefully. Specific rates may apply for each or only a few species. Even heavy (5-6/sweep) defoliator infestations may be adequately controlled by simply cutting Decisions to treat should be based on number of larvae and noticeable damage. For webworms specifically, control is generally poor if worms and/or webs are large. Treat early in outbreaks.
Summer		Warrior <sup>r</sup> (3) Mustang MAX <sup>r</sup> (3) Steward SC (22) Silencer <sup>r</sup> (3) Baythroid XLR <sup>r</sup> (3)	1.92-3.2 oz 2.24-4.0 oz 9.2-11.3 oz 2.56-3.84/oz 0.8-1.8 oz	Use of synthetic pyrethroids is not suggested in cotton-growing areas. See note under alfalfa weevil section.
		Proaxis <sup>r</sup> (3) Pounce 25WP <sup>r</sup> (3) Javelin ( <i>Bacillus thuringensis</i> ) (11B2) Agree (B.t.) (11B2)	2.56-3.84 oz 3.2-12.8 oz 0.25-1.5 lb 0.5-2.0 lb	Rate range may depend on pest species (check label).

<b>Pea Aphid</b> Usually early March, April and May	Large green aphid with antennal segment, Causes Chlorosis and wilting of Leaves. Economic injury Level is about 50 aphids/stem for 10 inch alfalfa, about 100 aphids/stem when alfalfa is 20 inches tall. Usually present over entire plant.	Silencer <sup>(3)</sup>	2.56-3.84/oz	Several resistant varieties are available.
		Dimethoate 4E (1B)	0.50-1.0 pt	
		Malathion 5E (1B)	1.5-2.0 pt	
		Proaxis <sup>®</sup> (3)	2.56-3.84 pt	
		Lannate LV <sup>®</sup> (1A)	1.5-3.0 pt	
		Pounce 25WP <sup>®</sup> (3)	3.2-12.8 oz	
		Mustang MAX <sup>®</sup> (3)	2.24-4.0 oz	
Baythroid XL <sup>®</sup> (3)	1.6-2.8 oz			
Warrior <sup>®</sup> (3)	2.56-3.84 oz			
<b>Blue Alfalfa Aphid</b> Usually early March April and May, but may persist later.	Large green aphid. Similar in appearance to pea aphid, but lacks dark antennal bands at base of each segment. Often found in high numbers on terminals. Heavy infestations may cause severe stunting. Economic injury level is about 20 aphids/stem for 10 inch alfalfa, and about 40 aphids/stem when alfalfa is 20 inches	Silencer <sup>(3)</sup>	2.56-3.84/oz	Currently, no well-adapted varieties for Oklahoma exhibit high resistance to the blue alfalfa aphid. See chemical restrictions at end of this section.
		Dimethoate (1B)	0.50-1.0 pt	
		Malathion 5E (1B)	1.5-2.0 pt	
		Proaxis <sup>®</sup> (3)	2.56-3.84 oz	
		Pounce 25WP <sup>®</sup> (3)	3.2-12.8 oz	
		Warrior (3)	2.56-3.84 oz	
		Baythroid XL <sup>®</sup> (3)	2.8 oz	
		MustangMAX <sup>®</sup> (3)	2.24-4.0 oz	
		Lannate LV <sup>®</sup> (1A)	1.5-3.0 pt	
		<b>Spotted Alfalfa Aphid</b> Most common in summer and fall but may occur throughout year	Small tan-colored aphid with black spots in rows over surface of body. May deposit large amounts of honeydew. Plants wilt yellow and die. Economic injury levels are similar to the blue alfalfa aphid (above).	
Dimethoate 4E(1B)	0.5-1.0 pt			
Malathion 5E (1B)	1.5-2.0 pt			
Proaxis <sup>®</sup> (3)	2.56-3.84 oz			
Pounce 25WP <sup>®</sup> (3)	3.2-12.8 oz			
Mustang MAX <sup>®</sup> (3)	2.24-4.0 oz			
Warrior <sup>®</sup> (3)	2.56-3.84 oz			
Lannate LV <sup>®</sup> (1A)	1.5-3.0 pt			
<b>Variiegated Cutworm</b> Late April or May	Most common occurrence is on regrowth after first cut. In some years may destroy regrowth for period of 2-3 Tan to mottled black in color with distinctive light yellow, diamond shaped markings along the center of the back.	Silencer <sup>(3)</sup>	1.0-3.2/oz	See restrictions at end of section. If larvae are large control is usually poor. See chemical, restrictions at end of this section.
		Javelin (11B2)	0.25-1.5 lb	
		Lannate LV <sup>®</sup> (1A)	1.5-3.0 pt	
		Pounce <sup>®</sup> (3)	3.2-12.8 oz	
		Baythroid XLR <sup>®</sup> (3)	0.8-1.6 oz	
		Warrior <sup>®</sup> (3)	1.92-3.2 oz	
		Proaxis <sup>®</sup> (3)	1.92-3.2 oz	
Mustang MAX <sup>®</sup> (3)	2.24-4.0 oz			

<sup>r</sup> Restricted-Use-Pesticides

<sup>1</sup> MOA = Mode of Action Group for rotational purposes

For additional information, see the following:

OSU Extension PSS-2072 - Blister Beetles in Alfalfa

OSU Extension PSS-2097 - Alfalfa Weevil and Its Management in Oklahoma

OSU Extension EPP-7159 - Field Key to Larvae in Alfalfa

OSU Extension EPP-7184 - Alfalfa Aphids in Oklahoma

OSU Extension Current Report CR-7177 - Scouting for the Alfalfa Weevil in Oklahoma

OSU Extension Current Report CR-7179 - Integrated Control of the Alfalfa Weevil