



Current Report

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Management of Insect Pests in Rangeland and Pasture

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Arthropod pests of rangeland and pasture rarely become a serious economic problem. Many pest problems can be avoided by developing an Integrated Pest Management (IPM) plan that includes the use of good pasture management practices, proper fertilization, mowing and optimal stocking rates. Pesticide applications should not replace the use of good pasture management practices and should not be applied as "preventative insurance" because it is rarely economically or environmentally justifiable.

The information 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.

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

The first name listed is the trade name of a product registered for use in corn for the listed pest. The name in (parentheses) listed below the trade name is the name of the active ingredient. The active ingredient name is provided because in many cases, there are other registered products containing the same active ingredient that may cost less, so producers should compare prices.

The number [in brackets] following a product is its Mode of Action number [MOA]. The more frequently insecticides with the same MOA are used, the more likely resistance will occur. This number provides an easy way to select different modes of action to avoid selecting for pests that are resistant to a certain mode of action.

Refer to the following OSU publications for additional information.

- EPP-7196 Grasshopper Management in Rangeland, Pastures, and Crops
- NREM-2869 Management Strategies for Rangeland and Introduced Pastures
- NREM-2870 Drought Management Strategies
- NREM-2875 Intensive Early Stocking
- NREM-2581 Seeding Marginal Cropland to Perennial Grasses
- PSS-2871 Stocking Rates: the Key to Successful Livestock Production
- PSS-2583 Choosing, Establishing, and Managing Bermudagrass Varieties in Oklahoma
- PSS-2585 Forage Legumes for Oklahoma
- PSS-2587 Bermudagrass for Grazing or Hay

Management of Insect Pests in Rangeland and Pasture

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product/Acre</i>	<i>Comments</i>
<p>Ants (including fire ants) Baits for Grazed Land</p> <p>Ants range in size from 1/16 inch to nearly 1/2 inch in length and from light tan to black in color. These social insects live in a colony with thousands of workers. The two most important pest species for rangeland and pasture are the red imported fire ant and the red harvester ant.</p> <p>Damage: Fire ants can be an irritant to cattle as they feed. Harvester ants sometimes clear large patches of grass as they feed.</p> <p>Threshold: No threshold established.</p>	Amdro Pro[20A] (hydramethylnon)	Individual mound broadcast 5 tbs/mound 1.0 to 1.5 lb./acre	<p>For all baits: Apply as a broadcast or individual mound treatment when ants are active and soil temperatures exceed 60 F. If treating individual mounds, estimate the mound density, and do not disturb the mound or apply the bait directly on the mound.</p> <p>0 day wait for grazing, 7 day wait for harvest.</p>
	Esteem [7C] (pyriproxifen)	2 to 4 tbs/mound 1.5 to 2 lb/acre	0 day wait for grazing or 1 day for harvest. Repeat every 10 to 12 weeks as needed.
	Extinguish [7a] (s-methoprene)	3 to 5 tbs/mound 1 to 1.5 lb/acre	0 day wait for grazing or harvest. Repeat every 10 to 12 weeks as needed.
	Extinguish Plus [7A] (s-methoprene + hydramethylnon)	2 to 5 tbs/mound 1.5 lb per acre	0 day wait for grazing, 7 day wait for harvest.
	Amdro Pro + Extinguish 0.75 + 0.75 lb/acre	3-5 tbs/mound 7 day wait for harvest.	Mix baits thoroughly, 0 day wait for grazing,
Additional Baits for Non-Grazed Land			
	Award	1 to 3 tbs/mound 1 to 1.5 lb/acre	May be applied to grazed pastures on horse farms only if horses are not used for consumption.
	Distance [7C]	1 to 4 tbs/mound 1.0 to 1.5 lb/acre	1 day wait for harvest. Repeat after 12 to 16 weeks as needed.
<p>Armyworm</p> <p>Caterpillar can reach slightly more than 1 inch. Dark green or brown with 5 stripes along body.</p> <p>Damage: Feed on foliage, usually a problem in the spring.</p> <p>Threshold: Get a wire coat hanger, bend it into a hoop, place it on the ground, and count all sizes of fall armyworms in the hoop. Examine plants at several locations along the field margin as well as in the interior. The hoop covers about 2/3 of a square foot, so a threshold in pasture would be an average of two or three 1/2 inch-long larvae per hoop sample (3 to 4 per square foot)</p>	<i>Bacillus thuringiensis*</i> Biobit XL Javelin WG Xen Tari [11B1, B2]	See product label for specific rates.	*All <i>Bacillus thuringiensis</i> products work best when applied to small caterpillars. Caterpillars cease feeding upon ingestion of product, but will take several days to die. 0 day waiting period.
	Baythroid XL [3] (beta cyfluthrin)	1.6 to 1.9 fl oz/A (0.013 to 0.015 lb ai)	0 day waiting period.
	Besiege [3,28] (lambda cyhalothrin + chlorantraniliprole)	6.0 to 9.0 fl oz/A	0 day waiting period for grazing or harvest, 7 day wait for last cutting of hay.
	Declare [3] (gamma cyhalothrin)	1.02 to 1.54 fl oz (0.1 to 0.015 lb ai)	0 day wait for grazing, 7 day wait for hay.
	Entrust [5] (spinosad)	0.63 to 1.25 oz/A	0 day wait for grazing, 3 day wait for harvest.
	Karate' w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz/A (0.2 to 0.3 lb ai)	0 day waiting period for grazing, 7 days for hay.
Lannate LV [1A] (methomyl)	0.75 to 3 pt/A	For Bermuda pasture ONLY. 7 day wait for grazing, 3 days for harvest.	

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product/Acre</i>	<i>Comments</i>
Armyworm (cont'd)	Malathion [1B]	2 pt	0 day wait for grazing or harvest.
	Mustang Maxx [3] (zeta cypermethrin)	2.8 to 4.0 fl oz/A (0.0175-0.025 lb ai)	0 day wait for grazing or harvest.
	Prevathon [28] (chlorantraniliprole)	14 – 20 fl oz (0.047 – 0.067 lb ai)	0 day wait for grazing or harvest.
	Sevin 80S [1A] Sevin 80 WSP [1A] Sevin 4F [1A] Sevin XLR Plus [1A]	1.25 to 1.875 lb/A 1.25 to 1.875 lb/A 2 to 3 pt/A 2 to 3 pt/A	For improved pasture only: do not apply more than 2 applications per season and not more than once every 14 days. Sevin label states a 14 day waiting period for grazing or harvest.
	Tracer [5]	1 to 2 fl oz/A	0 day wait for grazing, 3 days for hay or fodder. (Other names, Blackhawk)
Fall armyworm Large striped caterpillar that reaches 1.5 inches when mature. Has an inverted “Y” in the front of its head. <u>Damage:</u> Feed on foliage. Typically a problem in the fall, feeding on the emerged heads. <u>Threshold:</u> Get a wire coat hanger, bend it into a hoop, place it on the ground, and count all sizes of fall armyworms in the hoop. Examine plants at several locations along the field margin as well as in the interior. The hoop covers about 2/3 of a square foot, so a threshold in pasture would be an average of two or three ½-inch long larvae per hoop sample (3 to 4 per square foot).	<i>Bacillus thuringiensis*</i> Biobit XL Javelin WG Xen Tari [11B1, B2]	See product label for specific rates.	Use higher rate for heavy infestations or when plant growth is rapid. A contact insecticide may be added for enhanced control of heavy populations. 0 day waiting period for grazing or harvesting.
	Baythroid XL [3] (beta cyfluthrin)	2.6 to 2.9 fl oz/A (0.02 to 0.022 lb ai)	0 day wait for grazing or harvest.
	Besiege [3,28] (lambda cyhalothrin + chlorantraniliprole)	6.0 to 9.0 fl oz/A	0 day waiting period for grazing or harvest, 7 day wait for last cutting of hay.
	Declare [3] (gamma cyhalothrin)	1.02 to 1.54 fl oz 0.1 to 0.015 lb ai	0 day waiting period for grazing, 7 days for hay
	Karater w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.2 to 0.3 lb ai/A)	0 day wait for grazing, 7 days for hay.
	Lannate LV [1A] (methomyl)	0.75 to 3 pt/A	For Bermuda pasture ONLY. 7 day wait for grazing, 3 days for harvest.
	Malathion [1B]	2 pt/A	0 day wait for grazing or harvest.
	Mustang Maxx [3] (zeta cypermethrin)	2.8 to 4.0 fl oz/A (0.0175-0.025 lb ai)	0 day wait for grazing or harvest.
	Prevathon [28] (chlorantraniliprole)	14 to 20 fl oz (0.047 to 0.067 ai)	0 day wait for grazing or harvest.
	Sevin 80S [1A] Sevin 80 WSP [1A] Sevin 4F [1A] Sevin XLR Plus [1A]	1.25 to 1.875 lb/A 1.25 to 1.875 lb/A 2 to 3 pt/A 2 to 3 pt/A	For improved pasture only: do not apply more than 2 applications per season and not more than once every 14 days. Sevin label states a 14 day wait for grazing or harvest.
	Tracer [5] (spinosad)	1 to 2 fl oz/A	0 day wait for grazing, 3 days for hay or fodder.

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product/Acre</i>	<i>Comments</i>
Grasshopper	PASTURE:		
<u>Damage:</u> Feed on foliage. Can damage from spring through fall, but more of a problem in late summer. Small grasshoppers less than ½ inch are more easily controlled and can be spot treated with foliar spray if nesting sites are mapped out in spring. <u>Threshold:</u> Small: 24 to 100 per yard ² (less than ½ inch) <u>Large:</u> 8 to 40 per yard ² (greater than ½ inch)	Baythroid XL [3] (beta cyfluthrin)	2.6 to 2.9 fl oz/A (0.02 to 0.022 lb ai)	0 day wait for grazing or harvest.
	Besiege [3,28] (lambda cyhalothrin + chlorantraniliprole)	6.0 to 9.0 fl oz/A	0 day wait for grazing or harvest, 7 day wait for last cutting of hay.
	Declare [3] (gamma cyhalothrin)	1.02 to 1.54 fl oz 0.1 to 0.015 lb ai	0 day waiting period for grazing, 7 days for hay.
	Dimilin 2L (15)	2 fl oz/A	Apply when majority of grasshoppers are in the 2 nd or 3 rd instar nymphal stage (less than ½ inch). Do not exceed a total of 2 fl oz per year.
	Karate ^r w Zeon [3] (lambda cyhalothrin)	1.28 to 1.92 fl oz (0.2 to 0.3 lb ai)	0 day waiting period for grazing, 7 days for hay. (Other names: Grizzly, Kaiso, Lambdastar)
	Mustang Maxx [3] (zeta cypermethrin)	2.8 to 4.0 fl oz/A (0.0175-0.025 lb ai)	0 day wait for grazing or harvest.
	Prevathon [28] (chlorantraniliprole)	8 to 16 fl oz/A (0.027 to 0.054)	0 day PHI.
	Sevin 80S [1A] Sevin 80 WSP [1A] Sevin 4F [1A] Sevin XLR Plus [1A]	1.25 to 1.875 lb/A 1.25 to 1.875 lb/A 2 to 3 pt/A 2 to 3 pt/A	For improved pasture: do not apply more than applications per season and not more than once every 14 days. Sevin label states a 14 day waiting period for grazing or harvest in pastures.
	Tombstone [3] (cyfluthrin)	1.6 to 2.8 fl oz/A (0.025 to 0.044 lb ai)	7 day wait for grazing or harvest.
	RANGE:		
Baythroid XL [3] (beta cyfluthrin)	2.6 to 2.9 fl oz/A (0.02 to 0.022 lb ai/A)	0 day wait for grazing or harvest.	
Besiege [3,28] (lambda cyhalothrin + chlorantraniliprole)	6.0 to 9.0 fl oz/A	0 day wait for grazing or harvest, 7 day wait for last cutting of hay.	
Declare [3] (gamma cyhalothrin)	1.02 to 1.54 fl oz 0.1 to 0.015 lb ai	0 day waiting period for grazing, 7 days for hay.	
Dimilin 2L (15)	0.5 to 2 fl oz/A	Applications of Dimilin may be applied as a Reduced Area & Agent Treatment (RAAT) strip spray. See label for specific directions. Apply when majority of grasshoppers are in the 2 nd or 3 rd instar nymphal stage (less than ½ inches) Do not exceed 1 fl oz/acre/year. If second application is needed, wait 2 to 3 weeks from 1 st application.	
Karate ^r w Zeon [3] (lambda cyhalothrin)	2.56 to 3.84 fl oz/A (0.2 to 0.3 lb ai)	0 day waiting period for grazing, 7 days for hay.	

<i>Pest, Damage and Treatment Threshold</i>	<i>Insecticide Formulation</i>	<i>Rate of Product/Acre</i>	<i>Comments</i>
Grasshopper (cont'd)	Malathion (1B)	1.5 to 2 pt	0 day wait for grazing or harvest.
	Prevathon [28] (chlorantraniliprole)	8 to 16 fl oz (0.027 to 0.054 lb ai)	0 day waiting period for grazing or harvest. Labeled for RAAT application.
	Sevin 80S [1A] Sevin 80 WSP [1A] Sevin 4F [1A] Sevin XLR Plus [1A]	0.675 to 1.875 lb/A 0.675 to 1.875 lb/A 1 to 3 pt/A 1 to 3 pt/A	0 day wait for grazing. Do not make more than one application of Sevin per year, and do not exceed 1.0 lb ai/acre per year.
	Tombstone [3] (cyfluthrin)	12.6 to 2.8 fl oz/A (0.04 to 0.044 lb ai)	7 day waiting period for grazing or harvest.
	Housefly, Stable Fly	Dibrom 8 [1B] Naled	0.8 to 1.6 fl oz/A

Pre-harvest Intervals and grazing restrictions

Amdro	7 day waiting period for harvest.
Baythroid	0 day waiting period for grazing or harvest.
Besiege	0 day waiting period for grazing or harvest, 7 day wait for last cutting of hay.
Declare	0 day waiting period for grazing, 7 days for hay.
Dimilin	0 day waiting period for grazing or harvest.
Esteem	0 day waiting period for grazing, 1 day for harvest.
Extinguish	0 day waiting period for grazing, 7 days for hay or fodder.
Karate	0 day waiting period for grazing, 7 days for hay.
Lannate	For bermudagrass ONLY. 7 day waiting period for grazing, 3 day waiting period for harvest.
Malathion	0 day waiting period for grazing or harvest.
Mustang Maxx	0 day waiting period for grazing or harvest.
Prevathon	0 day waiting period for grazing or harvest.
Sevin	14 day waiting period for grazing or harvest.
Tombstone	7 day waiting period for grazing or harvest.
Entrust/Tracer	0 day waiting period for grazing, 7 days for hay or fodder.

The Oklahoma Cooperative Extension Service *Bringing the University to You!*

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- 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.

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