

Alfalfa X-16

Grasshoppers and Crickets

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Grasshopper.

Grasshoppers are a complex of several species with various emergence dates. Both immatures and adults are foliage feeders. Grasshopper populations are strongly influenced by climate; long, warm fall weather and warm, dry springs favor grasshopper population increase.

The following website provides a comprehensive source of information on grasshopper biology, ecology, identification and management of grasshoppers and crickets in North America.

<http://www.sidney.ars.usda.gov/grasshopper/>

Monitoring

Hazard Maps are developed each year as a cooperative effort of USDA-APHIS-PPQ and are available at the following site.

<http://www.sidney.ars.usda.gov/grasshopper/http://www.sidney.ars.usda.gov/grasshopper/>

Management

Table 1. Treatment thresholds for immature and adult grasshoppers (from University Minnesota)

| Rating | Immatures/yd ² | | Adults/yd ² | |
|-------------|---------------------------|-------|------------------------|-------|
| | Margin | Field | Margin | Field |
| Light | 25-35 | 15-25 | 10-20 | 3-7 |
| Threatening | 50-75 | 30-45 | 21-40 | 8-14 |
| Severe | 100-150 | 60-90 | 41-80 | 15-28 |
| Very Severe | 200+ | 120+ | 80+ | 29+ |

Treat crop borders when immatures are small and numbers are moderate. Timing of grasshopper control depends on the potential for crop loss, crop value, size (stage) of grasshoppers present. Grasshopper control is most effective before the insects become large nymphs or adults, as these stages are more mobile and more difficult to control.

Chemical control may be justified when adult grasshopper populations are threatening (eight or more per square yard in the field or 20 or more per square yard in field margins). Re-infestation originating from outside the field may occur after 10 to 14 days. Use the higher dosages for adults, lower for the more immature. Sufficient gallonage is important. See **A Guide to Grasshopper Control in Cropland** in this guide for more information

Product List for Grasshoppers:

| Insecticide | Product per Acre (Fl oz. or oz. product) | Preharvest Interval, remarks |
|------------------------|--|--|
| Baythroid 2ER,1 | 2.0-2.8 | 7 days. 12 hr REI. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. Maximum of 2.8 oz per acre applied per cutting. Total 11.2 oz/A applied per season. |
| carbaryl1,2 | See labels | 7 days. 12 hr REI. Most formulations are Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. Sevin XLR+ is safe for bees if applied at <1.5 lbs ai/acre when no bees are in the field. Do not apply more than once per cutting. Bait formulations are also available. |
| chlorpyrifos 4ER,1,2 | 8-16 | 7 -14 days rate dependent. 24 hr REI. No more than one application per cutting or 4 applications/yr. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. Minor phytotoxicity may occur |
| CobaltR1 | 7-13 | 7 days after application of 13 fl oz, 14 days after application of 26 fl oz, 21 days after application of rates above 26 fl oz per acre. Extremely Hazardous to Bees! Do not apply when bees are present. |
| dimethoate1,2 | See labels | 10 days (harvest, grazing). 48 hr REI. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. 1 application/cutting. |
| Furadan 4FR | 4-8 | 7 days. 24 hrs REI. 1 application/season. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. Check label for other restrictions. |
| lambda cyhalothrinR1,2 | 2.56-3.84 | 7 days for hay. 24 hr REI. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. Do not apply more than 0.24 pt /A per cutting. Do not apply more than 0.96 pt/A per season. Advisable to move bees during application and allow 3 (low rate) or 5 (high rate) days before re-introduction of bees |
| malathion2 | See labels | 0 days. 12 hr REI. Not effective below 65oF. Apply to blooming alfalfa only in evening or early |

| | | |
|---------------------------|------------------|--|
| malathion ULV2 | 8 | morning when bees are not working. 0 days. 12 hr REI. Extremely Hazardous to Bees! Do not apply when alfalfa is in bloom. Do not apply to seed alfalfa. |
| Mustang MAX ECR,1 | 2.8 – 4.0 | 3 days. 12 hr REI. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. No more than 4 oz per cutting, 12 oz per season. |
| Nosema locusta- NoLo Bait | 1 X 109 spores/A | Broadcast early in season when grasshoppers are 3rd instar (~ ½ in). Bait loses viability when stored for more than 30 days or at temperature above 70oF. |
| ProaxisR,1 | 2.56-3.84 | 7 days for hay. 24 hr REI. Extremely Hazardous to Bees! Do not apply to alfalfa in bloom. Do not apply more than 0.24 pt /A per cutting. Do not apply more than 0.96 pt/A per season. Advisable to move bees during application and allow 3 (low rate) or 5 (high rate) days before re-introduction of bees |

RRestricted use pesticide **1**Labeled for chemigation **2**Generic active ingredient, several formulations.

The information herein is supplied with the understanding that no discrimination is intended and that listing of commercial products, necessary to this guide, implies no endorsement by the authors or the Extension Services of Nebraska, Colorado, Wyoming or Montana. Criticism of products or equipment not listed is neither implied nor intended. Due to constantly changing labels, laws and regulations, the Extension Services can assume no liability for the suggested use of chemicals contained herein. Pesticides must be applied legally complying with all label directions and precautions on the pesticide container and any supplemental labeling and rules of state and federal pesticide regulatory agencies. State rules and regulations and special pesticide use allowances may vary from state to state: contact your State Department of Agriculture for the rules, regulations and allowances applicable in your state and locality.

Categories: Alfalfa, Insects, Grasshoppers, Crickets

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