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Insect Control  
on Forage Crops

Forage crops and pastures are attacked by various insects. Some of these pests cause economic losses by reducing yield and/or feed quality. You can minimize damage by cutting or harvesting the crop before serious loss occurs and maintaining vigorous stands by good crop management. However, early harvesting may open the way for insects such as leafhoppers, thereby making chemical control necessary.

Limitations and restrictions listed here or on insecticide labels must be followed carefully to avoid illegal residues on forage crops and in livestock and livestock products. Such residues are strictly regulated by the U.S. Food and Drug Administration which is authorized to seize agricultural commodities containing residues in excess of those permitted by official established tolerances.

Observe the following limitations for each insecticide. Use no other insecticides on forage crops unless current labels list specific crops to be treated.

Chemical	Limitations
azinphosmethyl (Guthion) ¼-½ pound per acre	14 days, one application per cutting.
carbaryl (Sevin) 1-1½ pounds per acre	Pasture or forage may be grazed, fed, or harvested immediately after treatment.
carbofuran (Furadan) ¼-½ pound per acre	7 days ¼ pound, 14 days ½ pound, one application per season.
diazinon ½ pound per acre	Pasture and forage crops may be grazed immediately by dairy and beef cattle and sheep and may be fed as green forage immediately after cutting. If the crop is to be cut for hay, wait 7 days after treatment. Do not spray on or over livestock. Do not repeat treatment of pastures within 30 days.
dimethoate (Cygon, DeFend, Dimex, Rebelate) ¼-½ pound per acre	10 days.
Imidan 1 pound	7 days, one application per cutting.
malathion 1-1½ pounds per acre or 0.6 pound technical grade per acre as ultra low volume spray	Alfalfa, clover, and grass may be grazed, fed, or harvested immediately after treatment. Corn forage or ensilage may be harvested 5 days after treatment.

Chemical	Limitations
methidathion (Supracide) ½ pound per acre	10 days.
methoxychlor 1-1½ pounds per acre	Wait at least 7 days after treatment before grazing, feeding, or harvesting.
methoxychlor combinations with diazinon or malathion	Wait at least 10 days after treatment before grazing, feeding, or harvesting.
parathion ¼ pound per acre	Wait at least 15 days after treatment before grazing, feeding, or harvesting and 12 days for harvesting corn forage or ensilage. Application by qualified aerial operator only.
trichlorfon (Dylox) 1 pound per acre	7 days.

**SPECIFIC INSECT PROBLEMS**

Grasshoppers

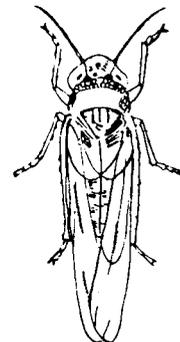
If grasshoppers become numerous shortly before hay or forage is to be harvested, cut it early to avoid most damage. If the grasshoppers move to field margins, spray these areas. Watch crop regrowth carefully; if grasshoppers are still present in damaging numbers (over 8 per square yard) treat the crop.

If you treat hay before cutting, use diazinon, malathion, carbofuran, or carbaryl. Wait the required number of days before cutting. Use diazinon at ½ pound per acre (4 pound emulsion concentrate, ½ quart), carbaryl (Sevin) at 1 to 2 pounds per acre (1¼-2½ pounds 80 percent wettable powder), carbofuran at ½ pound per acre (1 pint Furadan 4F), or malathion at 1 to 1½ pounds per acre (5 pound emulsion concentrate, 1½ to 2 pints).

Potato Leafhopper

These tiny sap-sucking insects often cause damage on alfalfa regrowth after the first or second cutting. Their feeding causes yellow foliage and stunted plants. Damage is usually most severe on second crop alfalfa hay when the first crop is cut early.

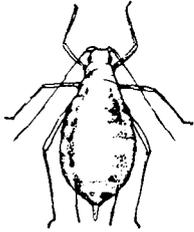
Hay yields and quality are increased by cutting the first crop early—when it should be—and



treating the second growth when it is 8 to 10 inches high if there are more than 2 leafhoppers per sweep with a 15 inch diameter insect net. Use methoxychlor at 1 to 1½ pounds per acre (2 to 3 quarts of 25 percent emulsion concentrate per acre) or diazinon at ½ pound per acre (½ quart of 4 pound emulsion concentrate) or ¼ to ½ pound of azinphosmethyl.

#### Pea Aphid

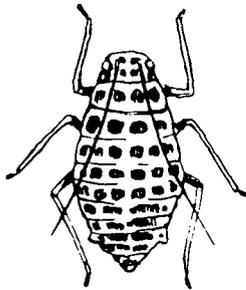
This common, bright-green aphid is usually found in alfalfa. When moisture is adequate, alfalfa tolerates heavy infestations without much damage. But when extremely heavy aphid infestations occur during dry weather, plants may yellow and become stunted. New seedlings can be severely damaged.



Control of pea aphids on alfalfa hay is of questionable economic value. They may be controlled with 1 pound actual malathion, ¼ pound actual parathion, ¼ to ½ pound dimethoate, or ½ pound actual diazinon per acre. You can apply diazinon, dimethoate, or malathion with ground sprayers. Parathion or demeton should be applied by qualified aerial operators only; both are highly toxic.

#### Spotted Alfalfa Aphid

These aphids do not overwinter in Minnesota and are not yet a serious problem here. Their infestations are much more severe on alfalfa than those of pea aphids. They are smaller than pea aphids, light in color, and have dark-gray spots on their backs. Control them with same materials and rates recommended for pea aphids. Make sure coverage is thorough.



#### Plant Bugs

Several kinds of sap-sucking plant bugs may damage alfalfa grown for forage, although these insects are more serious problems in legume seed fields. Infestations of over three per sweep with an insect net justify treatment. Methoxychlor at 1½ pounds actual toxicant per acre gives fair control. But a combination of methoxychlor plus ¾ to 1 pound actual malathion or ½ pound diazinon gives better results.

#### Cutworms

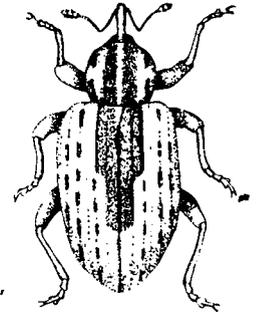
Cutworms and other leaf-chewing caterpillars occasionally become numerous enough to damage forage crops. Cutting usually exposes them to natural enemies and other hazards, so the threat is reduced. One to 1½ pounds actual carbaryl (Sevin)



or methoxychlor, 1 pound trichlorfon, or a combination of methoxychlor plus malathion or diazinon at rates suggested for plant bugs may give control.

#### Alfalfa Weevil

This serious pest of alfalfa was first detected in Minnesota in 1970 and by 1974 had spread westward across the state. Damage is done principally by the light green larvae to the first cutting and to the regrowth following first cutting. Harvest the first crop early to avoid loss of yield and quality. If over 50 percent of the plant tips show feeding injury, treat with ½ pound of asinphosmethyl, ¼ to ½ pound carbofuran, ½ pound methyl parathion, 1 pound of Imidan or the methoxychlor-diazinon or methoxychlor-malathion combinations or ½ pound methidathion. Treat the stubble if there are over 8 larvae per square foot.



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