

Potato Leafhopper Control in Alfalfa

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Life History and Phenology

The potato leafhopper (PLH) is the most damaging insect pest found in Delaware alfalfa fields. This insect migrates to Delaware from the Gulf Coast states in early to mid May. Potato leafhoppers do not overwinter in our area so first cutting alfalfa generally escapes damage. The greatest losses occur on spring seedings and the regrowth of second and third cuttings of established stands. Under favorable conditions, leafhoppers develop from the egg to adult stage in three weeks. Cool night temperatures or high temperatures above 95 degrees F will retard development.

Damage

Adults and nymphs feed on alfalfa; however, the most severe damage is caused by the nymphs. Feeding initially appears as a yellow wedge-shaped area on the leaf tips often referred to as "hopper burn". In a short time, this yellowing will spread to the entire leaf. If economic infestations are not controlled, the entire field will appear yellow, stunted, and fail to grow again until the crop is harvested. Feeding damage can also result in destruction of new stands, excessive winter-kill the following year, and reduced protein content.

Sampling and Decision Making

On new spring seedings, begin sampling by mid-May, or as soon as plants are 3 inches tall. On established stands, begin sampling within a week after the first cutting and continue on a weekly basis until the final harvest. Take sweep samples any time during the day as long as the foliage is dry. Take 10 sweeps in each of 10 locations to determine the number of leafhoppers per 100 sweeps. Examine 20 random stems to determine the plant height and plant growth stage.

The following thresholds can be used to make a leafhopper control decision:

<u>Average Stem Height (inches)</u>	<u>Number per 100 Sweeps</u>
3 or less	20
4 to 6	50
7 to 10	100
11 or greater	150

If alfalfa is more than 60 percent bud or flowering, consider harvesting in the next 7 days to avoid spraying. In this situation, the field should be resampled soon after harvest to determine the need for control. If the field cannot be harvested in 7 days and economic population levels are present, apply a short residual insecticide. If the alfalfa has experienced “hopper burn”, significant yield loss has already occurred and the field should be cut instead of sprayed.

Potato Leafhopper - Chemical Control Options

NOTE – The label is the law. Be sure to read the label before making any pesticide applications and observe all label restrictions.

Insecticide	Rate/Acre	Days to Harvest	Remarks (see labels for restrictions)
Baythroid XL (beta-cyfluthrin)	0.8 - 1.6 oz	7	Restricted Use.
Dimethoate 4 EC (dimethoate)	0.5 – 1.0 pt	10	Restricted Use.
Proaxis (gamma- cyhalothrin)	1.92 - 3.2 oz	1 - forage 7 - hay	Restricted Use.
Lorsban 4 E (chlorpyrifos)	0.5 pt 1.0 pt	7 14	Restricted Use. Reduced insect control under extremely cool conditions; some temporary yellowing on tender new growth.
Mustang MAX 0.8 EC (zeta-cypermethrin)	2.24 – 4.0 oz	3	Restricted Use.

Permethrin 3.2 EC (permethrin)	4.0 – 8.0 oz	14	Restricted Use
Warrior II (lambda-cyhalothrin)	0.96 – 1.6 oz	1 - forage 7 - hay	Restricted Use.
Tombstone 2 EC (cyfluthrin)	0.8 – 1.6 oz	7	Restricted Use.

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