

Why Is It So Important To Manage Potato Leafhopper?

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While some new alfalfa varieties offer resistance to the potato leafhopper, most varieties do not. So managing leafhoppers remains very important in producing alfalfa in Pennsylvania.

As spring approaches, warm air will begin to move into the northeast and bring with it spring showers. These spring showers that originate in the Gulf of Mexico can also bring the potato leafhopper.

The potato leafhopper is a migratory insect that overwinters in states along the Gulf of Mexico. It cannot survive the cold winter conditions in the northern U.S. In the spring, potato leafhoppers wait for the right climactic conditions and then fly into updrafts created by strong storm systems developing in the Gulf of Mexico. The insects are drawn into the storm system and carried hundred of miles north and eastward. Computer simulations of storm movement have predicted that potato leafhoppers can move from the Gulf of Mexico to Pennsylvania in as little as five days.

By understand this behavior of the potato leafhopper, its arrival into Pennsylvania can be anticipated. In the spring, beginning about late April, major storms from the Gulf of Mexico begin to move north and east into Pennsylvania. The frequency and intensity of these storm fronts influence the timing and number of leafhoppers reaching the northeast U.S.

In years when few storms arrive early, the arrival of leafhopper is later and the numbers arriving are

lower, resulting in reduced pressure for the insect. Under these conditions, only a few second cutting alfalfa field typically need an insecticide application.

However, the numbers buildup during the second cutting and a greater number of third cutting field require an insecticide application.

In years when early spring storms originating in the Gulf of Mexico are frequent, potato leafhoppers in general arrive earlier and damage from the insect is greater. Under these conditions many second-and third-cutting alfalfa fields require an insecticide application to prevent damage.

As the second cutting of alfalfa reaches about 2 to 4 inches in height, scout the field once a week. If a storm has just moved through the area, there is a good chance that new leafhoppers have moved into the field.

Arriving leafhoppers prefer the new regrowth before it takes on the dark-blue green color of maturing alfalfa. The wavelengths of light reflected from the young alfalfa plants that are yellow-green is very attractive to leafhoppers flying over the field. To a leafhoppers, this indicates that the plant is succulent and rich in the nutrients it needs for proper egg development and growth and development.

Older plants have harder stems and leaves and a lower protein content. Besides providing a good diet for the leafhopper, the younger plants are more tender, making it easier for females to penetrate the stem to deposit their eggs in the stem.

In summary, by watching the

spring storms that move into Pennsylvania beginning in late April, the arrival of leafhoppers can be anticipated. Scouting after regrowth of the first cutting has reached 2 to 4 inches will help identify economic infestations of leafhop-

per before significant injury occurs. It is particularly important to check fields after a storm originating in the Gulf of Mexico has just passed through, since leafhoppers are transported northward in the spring on these storms into Pennsylvania.



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The adults are about 3/16 of an inch long, brown in color, and have along snout, characteristic of weevils. The adults remain in the alfalfa stand and feed on newly emerging shoots or buds until later in the season when they move into nearby protective areas.

Alfalfa weevils can be an important pest of alfalfa. However, not all fields will have populations high enough to warrant control. Each field should be surveyed to determine the degree of infestation and the level of damage before control decisions are made.

Target alfalfa stands on southern exposures close to wooded areas for a closer look. Economic threshold levels have been calculated for alfalfa weevils. A general recommenda-

tion for control is if weevil-feeding damages 30 or 40 percent of tips, larva are still present, and early harvest is more than a week away.

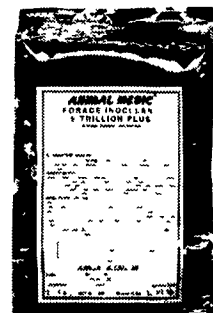
Mowing can occasionally eliminate the need for insecticides. Mowing exposes small larva to sunlight, which can dry them out, and plant removal can lead to starvation until regrowth begins. Pupa and adults will survive after harvest and can cause significant injury to newly developing shoots. Scouting after harvest in heavily damaged areas can help to determine if additional controls are necessary.

Refer to the publication, "A Pest Management Program For Alfalfa In Pennsylvania" for additional information on sampling and threshold levels. Refer to the "1999/2000 Penn State Agronomy Guide" for specific control materials.

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