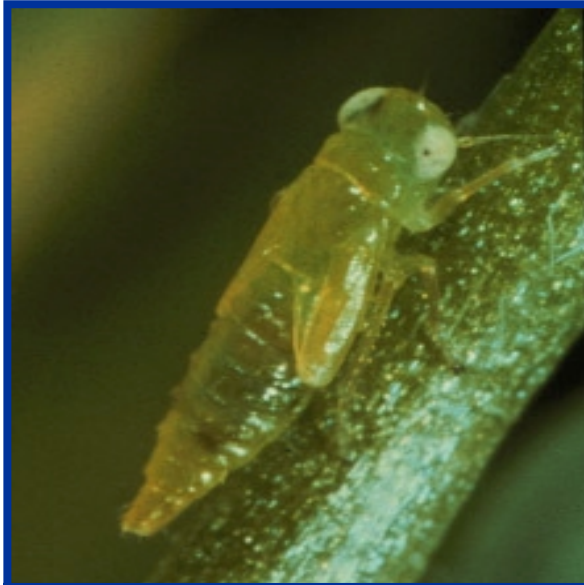


## Potato Leafhopper

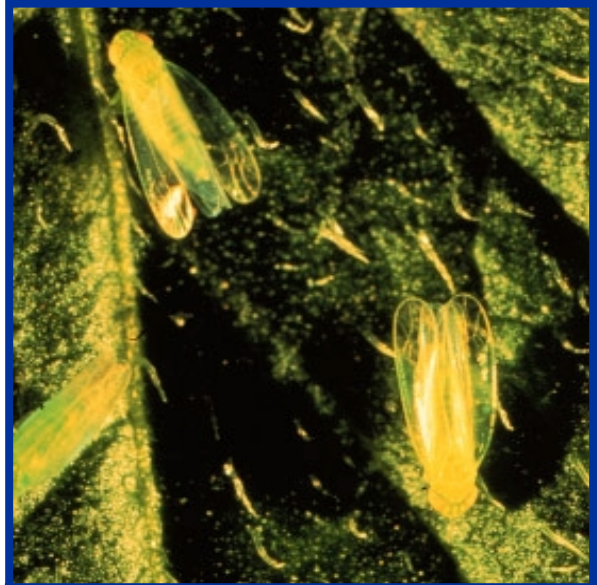
*Karen Delahaut, UW-Madison IPM Program*

The potato leafhopper (*Empoasca fabae*) is a serious, annual pest of snap beans and potatoes grown in Wisconsin. Damage caused by leafhoppers includes stunting, browning of leaves, and reduced vigor. A wide range of plants serve as hosts for the potato leafhopper. Host plants include alfalfa, apples, all types of beans, clover, dahlia, eggplant, potatoes, rhubarb, soybeans, strawberries, and other bedding plants.

**Appearance** Potato leafhoppers are small (1/8 inch), bright green, wedge-shaped insects with whitish spots on their head and thorax (upper body). They have piercing-sucking mouthparts and commonly jump, fly, or crawl when disturbed. Nymphs are similar in appearance to the adults but lack fully developed wings.



Potato leafhopper nymph



Potato leafhopper adults

**Symptoms and Effects** Both the adults and nymphs feed by inserting their mouthparts into the vascular tissue of the plant and extracting sap. Damage results from the blockage of vascular tissue which permanently reduces the plant's photosynthetic efficiency. The first symptom of injury is a brown, triangular lesion at the leaflet tip. As the symptoms develop, lesions spread backward and inward from the margin, eventually destroying the entire leaf. The burned appearance of the foliage is where the term "hopperburn" is derived. Plants become stunted and yellow, and leaves curl upward at the margins. Premature death may occur in severe infestations. Injury develops most rapidly during hot, dry weather. Unfortunately, yield loss often occurs even before the development of obvious symptoms. The plants may show little evidence of hopperburn, and yet the yield losses can be substantial.



**Life Cycle** Potato leafhoppers don't overwinter in Wisconsin; they are blown into the state each spring on southerly winds. Large populations of leafhoppers migrate from alfalfa fields in June and early July causing populations to seemingly "explode" overnight. Adult females insert white eggs into the stems or large leaf veins of susceptible crops. Each female lays approximately 3 eggs each day for about a month. The nymphs hatch 7-10 days later. They molt five times over a period of 12-15 days before turning into adults. There are typically 2 generations per year in Wisconsin and populations decline significantly in August.

**Scouting Suggestions** Snap beans and potatoes should be scouted regularly for leafhopper activity. Leafhoppers tend to migrate into other crops in early summer after alfalfa is cut. This is the key time to watch for early migrants in vegetable plantings. Commercial vegetable growers should use a sweepnet to monitor their fields. Take 25 sweeps with an insect sweepnet per sample site. Use at least 5 sample sites per 30 acres. To monitor small gardens or farms, carefully turn over 25 leaves and count nymphs and adults. Select leaves from the middle portion of the plant.

**Threshold levels for vegetables**

| Life Stage | Seedling Snap Beans | Larger Snap Beans | Potatoes        |
|------------|---------------------|-------------------|-----------------|
| Nymphs     | 1/10 leaves         | 1/10 leaves       | 2.5/25 leaves   |
| Adults     | 0.5/sweep           | 1.0/sweep         | 0.5 – 1.0/sweep |

**Control** Healthy plants will withstand damage more effectively than stressed plants. Irrigation and cultural practices which favor the crop are recommended. Infestations are more likely to occur in crops planted adjacent to alfalfa fields. If potato leafhopper populations exceed accepted action thresholds, insecticides provide the only effective means of controlling these pests. Many foliar insecticides used for other pests provide excellent control for potato leafhoppers. Refer to UWEX publication A3422 "Commercial Vegetable Production in Wisconsin" for recommended insecticides.

**For pesticide recommendations:** See UW-Extension Bulletin A3422 or contact your County Extension Agent.

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