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Fact sheet

Insect Pests of the Home Garden Series

Leafhoppers

Gerald M. Ghidiu, Ph.D., Extension Specialist in Vegetable Entomology

Potato leafhopper, adult.

Leafhopper damage ('hopperburn') on potato.

Aster leafhopper, adult (Six-spotted leafhopper).

Injury:

Leafhoppers can be injurious to many vegetable crops, including beans, carrot, celery, eggplant, lettuce, parsnip, parsley, potato, rhubarb, and others. Symptoms vary with the different crops, but usually with six-spotted leafhoppers there is a general yellowing of the foliage, with plants becoming stunted and distorted. Lettuce develops a condition known as "rabbit ear." Potato leafhopper damage on potato is known as "hopperburn," where a triangular brown spot appears at the tip of the leaf, with the entire margin rolling inward, turning brown, and appearing scorched. On beans, the foliage turns whitish and curls, and the brown scorching effect may not be apparent.

Description:

Adults are small, 1/8-inch long, wedge-shaped insects with white spots on the head and thorax of the potato leafhopper, and six black spots on the hind wings of the six-spotted leafhopper. Nymphs are wingless, and are light yellow to light yellowish-green in color.

Life History:

The aster leafhopper, *Macrosteles quadrilineatus* (Forbes), or six-spotted leafhopper, overwinters in New Jersey in the egg stage on perennial weeds and flowers. Eggs hatch in early spring and become adults in 30–40 days, allowing for up to five generations per year in the southern counties. Early feeding is primarily on winter wheat and winter oats, and leafhoppers migrate to vegetables when these crops are harvested. Adults and nymphs feed on the undersides of leaves, sucking plant sap, while at the same time transmitting aster yellows virus from infected plants to uninfected plants. Susceptible plants to aster yellows include carrots, celery, cucurbits, dill, eggplant, lettuce, onion, parsley, pea, pepper, potato, sage, and tomato.

The potato leafhopper, *Empoasca fabae* (Harris), overwinters in the Gulf States and migrates north each year on spring winds, arriving in New Jersey mid- to late June. Adults feed on apple leaves, migrating to bean leaves as they emerge, and move to potatoes when the plants are several inches high. There are two to three generations per year in New

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Jersey, so both early and late potatoes may be infested. While feeding, potato leafhoppers inject a toxic substance into the plants to aid in feeding, and it is this substance that causes yellowing and browning of the tissue at the leaf tips and margins, often called 'hopper burn,' which progresses down the leaf. Affected leaves curl upwards, turn brown, and eventually die.

Management of Leafhoppers:

1. Remove winter weed and flower hosts near the garden or field as thoroughly as possible, including chrysanthemum, dandelion, and thistle, to reduce attractiveness to leafhoppers.

2. Some crops have resistance to leafhopper feeding. Consult seed package for more information (note: the resistance is to leafhopper feeding only and not to the aster yellows plant disease).

3. Remove diseased plants as soon as noticed to reduce transmission of the disease to uninfected plants by the aster leafhopper.

4. If an insecticide is used, begin treatments when leafhoppers are first noticed. On potato, start when plants are 4–8 inches high and leafhopper adults or nymphs are present. On lettuce and other greens, begin treatments when seedlings are 1/2 inch high and leafhoppers are observed. Be sure to cover all leaf surfaces with the spray. Monitor population after treatment, and repeat 7–10 days later if needed.

5. Read and follow all label directions, restrictions, and precautionary statements before using any pesticide. Days to harvest after last spray varies depending on crop—refer to label for appropriate time intervals for each specific crop.

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