

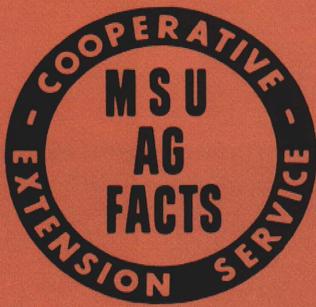
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Lettuce and Onion Insect Pests
Michigan State University
Cooperative Extension Service
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Department of Entomology
February 1977
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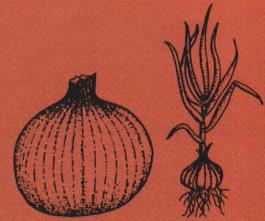
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No. 92

Lettuce and Onion Insect Pests



Extension Bulletin E-972, Feb. 1977, Michigan State Univ.

by Donald Cress and Arthur Wells
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(1) The Aster leafhopper (also called six-spotted leafhopper) ($\frac{1}{8}$ -inch long, light-smokey-green in color with six black spots on the front of its head) is a very serious pest of muck grown vegetables, including lettuce and onions. They do not overwinter in Michigan — **except** in very sheltered situations or possibly greenhouses. Overwintering populations migrate north from the south central states on storm fronts; usually arriving in Michigan beginning in mid-May and continuing throughout the summer. Upon arriving in Michigan, their numbers increase through natural reproduction. There are 3 to 5 generations per year in Michigan; with a generation time of around 20 days. (2) The disease, aster yellows, is spread by these leafhoppers. The plants are most vulnerable to the disease when they are in the seedling stage and until they are about $\frac{3}{4}$ grown. Aster yellows disease and its spread can be controlled only by controlling the leafhopper.

(3) Green peach aphids ($\frac{1}{16}$ -inch long, light-green color) are a serious pest of lettuce, but not onions. They overwinter as eggs on peach, plum and possibly chokecherry and other small stone fruit trees. In the early spring, the eggs hatch into nymphs which all develop into females. Around the first week in June, the winged forms begin to migrate to their over 250 host plants, including lettuce (and celery and carrots). The succeeding generations are all females and have the capacity to give birth to 80 to 100 young. Damage is caused by sucking plant sap from the undersides of the leaves. This feeding stunts the plants and malforms the leaves which reduces quality and may, in the case of lettuce, render the plants unmarketable. There may be 12 to 15

generations per year. Only the final generation has males. They mate with the females, which in turn lay the overwintering eggs.

(4) Variegated cutworms overwinter as larvae and pupae in the soil. The larvae are variable in color but they have a buff-brownish stripe down the sides. Also, there are a series of yellow or orangish spots along the back. The adults emerge in mid- to late-May and begin laying eggs occasionally in lettuce fields, usually in low and/or grassy areas. The eggs hatch in early June and the larvae begin to feed in the lettuce foliage. Because of their small size and lush plant growth, the larvae and damage are not usually evident, except near the base of the plants. This represents a loss in quality and can make the heads unmarketable. Equally important, the larvae contaminate fresh market produce. Second and third generation moth activity peaks in late July and throughout September, respectively. Fields should be checked very carefully for the young larvae beginning about the first of June.

“Loopers” are often a serious problem in lettuce (and celery). (5) Cabbage looper adults migrate into Michigan in mid-July. Eggs are deposited on the plants mainly in late evening or at night. (6) The eggs hatch in about a week and larvae (light-green with a white stripe along each side and center of back) begin to feed on the leaves and other plant tissues. This feeding damage reduces quality and the larvae can be a source of contamination at harvest. The larvae grow rapidly and become increasingly difficult to control with age. The larvae get their name “looper” from their appearance when they move. There may be 2 to 3 generations of cabbage looper per year in Michigan.

(7) Onion thrips are very small (less than $\frac{1}{16}$ -inch long, cream to brownish-black in color) and cause damage by

rasping small holes in the leaf surface and sucking up the resulting sap. The rasping process is repeated many times which results in loss of quality and quantity of yield. Damage is generally most severe in the leaf sheath areas at the base of the plant. There may be 3 to 6 generations of thrips per year. Damage from thrips is usually intensified after mid-summer when their other hosts (grasses and weeds) mature and die. Unusually dry growing conditions generally intensify this damage.

Onion maggots overwinter as (8) chestnut brown pupae in the soil. (9) The adult flies ($\frac{1}{4}$ -inch long, brownish-gray in color) begin to emerge in mid-May. (10) They are readily found feeding on dandelion and other (yellow) early-season flowers at the field margins. The flies return to the fields where they (11) oviposit (lay eggs) on the base of the seedling plants. The eggs hatch in a few days and the young (12) maggots move down through the soil and usually attack the plant in the root vicinity. (13) This attack kills and/or severely stunts the young plants. When mature, the maggots leave the onion and pupate in the surrounding soil. The second and third generation adults are active in late-June and mid- to late-August, respectively. Often, maggots are still in the onions at harvest and are put into storage where they continue to feed and damage the onions. There may be three generations per year in Michigan.



For chemical control recommendations, homeowners should consult Extension Bulletin E-760(b), “Home Vegetable Garden Insect and Disease Control.” Single copies are free to Michigan residents from your County Cooperative Extension Office or you may write to the Michigan State University Bulletin office, P.O. Box 231, East Lansing, MI 48824.

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Numbers in parentheses refer to pictures on p. 2.

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(1) Aster leafhopper, adult, (left) front view; (right) top view

(2) Aster yellows disease in (left) lettuce; (right) onions



(3) Green peach aphids

(4) Variegated cutworm, larva

(5) Cabbage looper, adult (note identifying mark, arrow)



(6) Cabbage looper, larva

(7) Onion thrips

(8) Onion maggot, pupa

(9) Onion maggot adult fly

(10) Onion maggot fly on dandelion



(11) Onion maggot eggs (arrow) at base of plant

(12) Onion maggot, maggot

(13) Typical onion maggot field damage