

## Onion Maggot in Oregon

### Onion Maggot in Oregon, *Hylemya antiqua*

#### INTRODUCTION

The onion maggot, *Hylemya antiqua* (Meigen) can be a serious pest for onion production in the Ontario region in Eastern Oregon. Onion maggots can have up to three generations per year and attack only crops of the onion family.

#### LIFE CYCLE

**Eggs:** The female fly can lay up to 200 eggs. The eggs are deposited at the base of the onion stalk close to the ground. Within 7 to 10 days, the small white maggots hatch.

**Maggots (larvae):** The maggots bore into the lower part of the onion stem and feed on the bulb. The maggots are elongated, small white larvae without legs and distinctive head and can reach 1/4 inch (1cm). Once completed the maggot stage, the larvae enter the soil and pupate.



Onion Maggots (From Manitoba Agriculture, Food and Rural Initiatives: Controlling Onion Maggots, Feb 2001)

**Pupae:** The onion maggot overwinters in the soil as pupa. The pupae are brown, oval and about the size of a wheat grain. In early spring, with rising temperature, the pupa completes its cycle and develops into an adult fly.



Pupae are brown, oval and slightly larger than a grain of wheat (From Manitoba Agriculture, Food and Rural Initiatives: Controlling Onion Maggots, Feb 2001)

**Adult:** The adult fly emerges from the soil in early spring. The adult onion maggot flies are small gray flies which keep their wings

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folded when resting. The female fly starts laying eggs within 10 days after emergence. The flies can live up to 30 days.



Adult flies can mate at 6 days old and eggs are laid three to four days later (From Manitoba Agriculture, Food and Rural Initiatives: Controlling Onion Maggots, Feb 2001)

#### DAMAGE

The damaging stage of the onion maggot fly is the maggot or larvae. The larvae bore into the germinating stems of onions and feed on the roots and bulb. As a result of the feeding damage, the bulbs increasingly rot in storage.



Maggot-damaged onion (From Manitoba Agriculture, Food and Rural Initiatives: Controlling Onion Maggots, Feb 2001)



Onion bulbs damaged by maggots (From Manitoba Agriculture, Food and Rural Initiatives: Controlling Onion Maggots, Feb 2001)

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### Malheur County Onion Maggot Control Order

The Onion Maggot Control Order 603-052-0360 for Malheur County requires that all cull or waste onions in Malheur County will be disposed of by a method approved by this control order prior to March 15 each year in order to protect the onion industry from the Onion Maggot.

A control area is established within the boundaries of Malheur County for the protection of the onion industry by the eradication or control of the insect pest known as the onion maggot. This control area order is based on IPM principles first recognized and used by Malheur County growers in 1957.

All cull or waste onions in Malheur County shall be disposed of by a method approved by this control order prior to March 15 each year; for onions sorted after that date, the resulting cull and waste onions shall be disposed of within one week after such sorting.



- **By March 15, all cull and waste onions need to be covered with 12 inches of onion-free soil.**
- **For new cull onions produced after March 15, the control order allows one week for the cull onions to be covered with 12 inches of onion-free soil.**

The Onion Maggot Control Order offers several disposal options:

**(A) Disposal by covering in a dump site** approved by the Oregon Department of Environmental Quality (DEQ). Culls and onion debris shall be dumped and covered by at least 12 inches of onion-free soil by March 15 each year;

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**(B) Disposal by animal feeding:** Culls and onion debris shall be completely removed from feeding areas by March 15 and buried under 12 inches of onion-free soil. Onions tramped into the soil so they cannot be removed shall be plowed to a depth of 12 inches;

**(C) Disposal by chopping or shredding:** Chopped or shredded onion debris that is incapable of sprouting may be returned to the field at a tonnage rate no higher than the DEQ-approved rate of 80 tons per acre and plowed to a depth where no onion parts are exposed on the surface;

**(D) Composting:** All onion debris shall be incorporated into the compost bed and completely covered by 12 inches of onion-free soil;

**(E) Disposal of residue in onion producing fields:** Commercial onion fields where sort out bulbs are left at harvest shall be disked to destroy the bulbs and shall be plowed to a depth of at least 12 inches by March 15 each year. Seed bulbs shall be disposed of in the same manner following the last harvest;

**(F)** If inclement weather prevents plowing, the culls will be **treated with an EPA-labeled insecticide** currently listed in the PNW Insect Control Handbook at prescribed intervals until proper disposal occurs.



**For more information please contact Oregon Department of Agriculture:**

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