Onion (Garlic) Insects

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Leafminers

Adults - small black and yellow flies

- Broad host range
- Females feed on plant sap and lay eggs within the leaf tissue
- Eggs hatch within 2 to 4 days and the small larvae tunnel within the leaf tissue.
- Close proximity to crops such as lettuce, celery, or spinach will increase the potential for damage by leafminers in onions

Leafminers

Damage

- Mostly cosmetic in green bunching onions, though contamination by pupae and larvae could become a problem
- In dry onions and garlic, leafminer is of little concern unless populations become so high as to prematurely kill foliage

Leafminers

Control

- If previous field was a host crop, allow sufficient time to pass before planting onions to allow pupae in the soil to emerge

- Parasitic wasps can provide good control but are susceptible to insecticides

- *Diglyphus begini* parasitoid can be introduced

Diglyphus sp.

Thrips
Onion thrips
Flower thrips

- Distinctive wings are fringed with long hairs
- Immature stages similar to adults, but lighter in color and wingless

Microscope species identification-
- Onion thrips: gray eyes, 7-segmented antennae
- Flower thrips: red eyes, 8-segmented antennae

- Broad host range including cereals and broadleaves

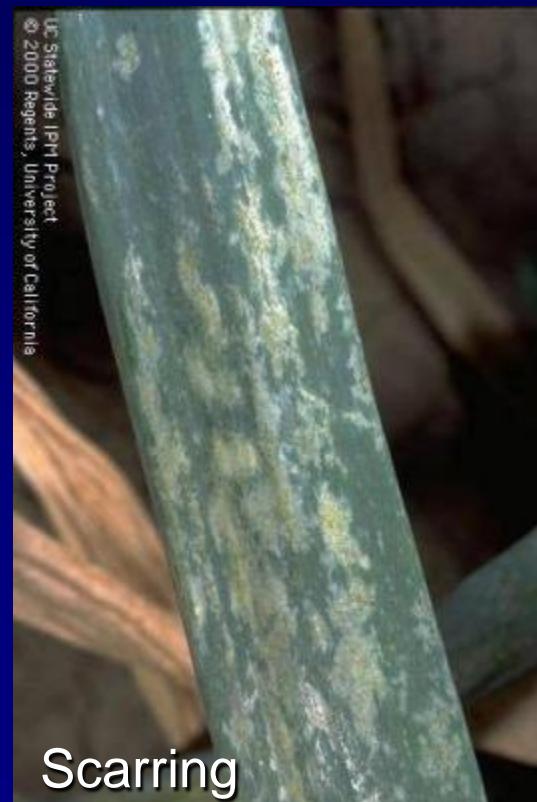- Thrive in hot, dry conditions

Thrips

Damage

More injurious to onions than garlic

Under leaf fold

Scarring

- Thrips feed under leaf folds and protected areas near the bulb
- At high populations, also feed on exposed leaf surfaces
- Scarring of leaves is a serious problem on green onions

Thrips

Damage

- Most damaging when they feed during the early bulbing stage of plant development

Under leaf fold

Scarring

- Most damaging when they feed during the early bulbing stage of plant development

- High populations can reduce both yield and keeping quality of onions

Thrips

Damage

- Transmits Iris Yellow Spot Virus, a persistent virus

- New to the United States

- Also found in Brazil, Netherlands, Israel and Iran

Iris Yellow Spot Virus

Thrips

Monitoring

Using a hand lens, count thrips under leaf folds and on the inner leaves near the bulb

- Threshold of 30 thrips per plant mid-season for dry bulb fresh market and drying onions

- Lower for very young plants and higher for larger mature plants

Thrips

Control

- Avoid planting onions near grain fields

- Control before early bulbing stage is most important

- For marketable green onions (with leaves attached) apply treatments at the first sign of thrips feeding

- Beneficials can reduce thrips, but are susceptible to insecticide sprays

Onion Maggot

Adults are small gray flies, smaller than house flies, at rest wings are folded over each other

Eggs laid in the soil near germinating plants.

Larvae feed on seedling and expanding bulb

- More restricted to cooler coastal climates

- Primarily a pest of onions and does not generally cause economic damage to garlic

~10 mm

Onion Maggot
Control

Prefer soils heavy in organic matter

- Allow adequate time for crop residue and manures to break down before planting
- Rotate crops
- Plant in warm soil for strong seedling growth
- When planting, use a chain drag or similar implement behind the drill to cover the seed row.

Larva on seedling

Onion Maggot
Control

- Apply OP with water drench in seed furrow at planting

Treatments for onion maggot are preventative - consider treating in high risk fields (ones with high undecomposed organic matter, previous maggot infestation)

Bulb Mite

Bulbous-appearing, ranging in size from 0.5 to 1 mm long

Four pairs of short brown legs

- Wide host range
- Can infest bulbs in storage or in the field; creates entryway for rotting organisms
- Can survive on decaying vegetation in the field until it is completely decomposed

Bulb Mite

Control

- Allow fallow time between crops; rotate crops
- Plant clean garlic seed cloves
- Plant in warm soil for strong seedling growth
- If soils highly infested, can treat with vapam sodium before transplanting