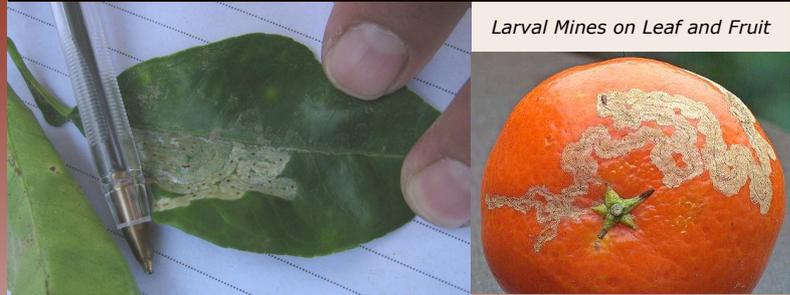
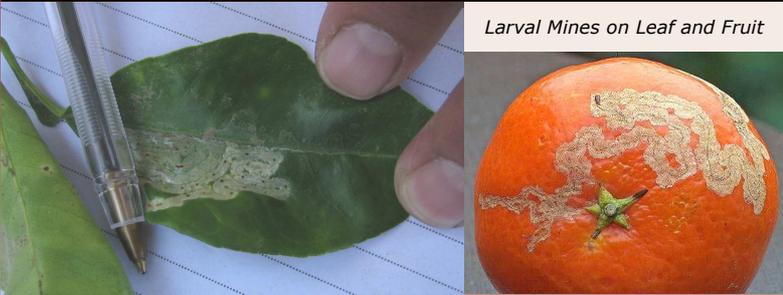


LEAF MINERS (CITRUS LEAFMINER—*Phyllocnistis citrella*)



Larval Mines on Leaf and Fruit

LEAF MINERS (CITRUS LEAFMINER—*Phyllocnistis citrella*)



Larval Mines on Leaf and Fruit



Pupa inside pupal chamber



Pupa inside pupal chamber



Adult Moth



Adult Moth



Adult and Pupa of natural enemy, *Citrostichus phyllocnistoides*. Note circle of excreta round pupa



Adult and Pupa of natural enemy, *Citrostichus phyllocnistoides*. Note circle of excreta round pupa

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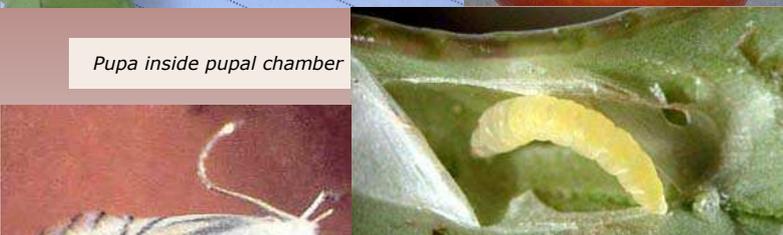
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Description

Leafminers are the larvae of many different insects and attack many fruit and vegetable crops. The citrus leaf miner shown overleaf is a moth larva, but others may be fly, wasp or beetle larvae.

The blister-like blotches that appear on the leaves are where the small larvae have eaten out the tissue between the upper and lower surfaces. The leaves are injured by the insect feeding on the soft interior tissues so that only the papery, thin covering of the exterior leaf surfaces remain.

Damage may cover so much of the leaf that photosynthesis is reduced and yields are noticeably decreased. Damage is more economically significant if the miner attacks young fruitlets or young saplings in the nursery.

Parasitic wasps lay eggs inside the larva: this can be recognized by a change in color. Spraying pesticide usually results in a larger leafminer problem as the pesticide kills the parasites.

Monitoring

Pheromone traps can be used to monitor adult male citrus leafminers, which can aid in determining when high populations occur.

However, control decisions should be based on sampling for active larvae, primarily on trees three years of age or less. Monitoring should begin when 50% of the trees are actively flushing. Randomly check ten leaves from ten pieces of flush and with a hand lens, look for live larvae. On young trees, treat when 30% of the leaves have active mines with live larvae. Older trees should not be treated with insecticides unless severely infested.

Control

Because it is protected by the leaf cuticles, the pest is highly resistant to most insecticides. Parasitic wasps occur naturally. If necessary, chemical control is by Abamectin, Imidacloprid (to soil through drip irrigation) or Spinosad.

Always apply sprays in conjunction with horticultural spraying oil.

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