

Life cycle of the tomato leaf miner

Recognize the problem

The tomato leaf miner is a species of moth which causes widespread damage to tomato crops by mining plant tissues, particularly the leaves. These mines are formed by the larva (small caterpillars). Leaf mines are wide, silvery, and gradually become brown and necrotic. Leaf necrosis may result in leaf death or premature leaf drop. Mines in the fruit can also lead to fruit rot. Other hosts of tomato leaf miner include eggplant, *Capsicum* (peppers) and potatoes, as well as solanaceous weeds.

Background

Severe infestations can cause 100% yield loss of tomatoes. Knowing the life cycle of the tomato leaf miner can help with selecting and understanding management and control methods.

The life cycle of the tomato leaf miner ranges from 24-38 days, depending on the temperature of the environment. It can overwinter as an egg, pupa or adult moth.

Females lay creamy white to yellow eggs on host plants, on the underside of leaves, usually singly but sometime in groups of 2-5. Eggs take 4-5 days to hatch.

When the larvae hatch they are yellowish in colour and about 0.5 mm long. They soon enter leaf, stem or fruit tissue to feed, creating mines in the process. On leaves, mines appear as silvery streaks which may turn brown and necrotic. Mines may cause leaves to dry out and fall prematurely which can reduce crop yield.

Larvae growth involves four developmental stages (instars). Before the next instar a larva must moult. In between moulting, caterpillars can be temporarily found on the leaves, stem or fruit. Exit holes can be seen most easily on the fruits.

As a larva matures it develops a distinctive black band on the head and its body becomes greenish to pinkish, reaching up to 9 mm long. It takes about 20 days for a larva to reach the end of the fourth instar.

Eventually, the larva forms a light to dark brown hardened pupa around it, about 9 mm long. Pupation may take place in the soil, on the surface of a leaf or within a mine.

After 10-13 days a brown adult emerges, about 5-7 mm long, with thread-like antennae and forewings with grey scales and black spots. Moths are active during night and hide between leaves during the day.

Larva of *Tuta absoluta* (Above). Larva of *Tuta absoluta* inside a tomato fruit (Below). (Photo by Dr. Kalleshwara swamy, UAHS, India (Above image) Marja van der Straten/NVWA Plant Protection Service/Bugwood - CC BY-NC 3.0 US (Below image))



Adult moth of *Tuta absoluta* (Above). Leaf mines caused by *Tuta absoluta* larvae (Below) (Photo by Photo by by Marja van der Straten/NVWA Plant Protection Service/Bugwood - CC BY-NC 3.0 US (Above image). Photo by Dr. Kalleshwara swamy, UAHS, Karnataka, India (Below image))



Scientific name(s) > *Tuta absoluta*

The recommendations in this factsheet are relevant to: Bangladesh, Ethiopia, Ghana, India, Kenya, Malawi, Nepal, Pakistan, Tanzania, Uganda, Zambia

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Edited by Plantwise.