

# Chipku<sup>®</sup>

INSECT TRAP



## TOMATO LEAF MINER



### Host crop:

*Tuta absoluta* lives on and in the leaves, stems and flowers of plants in the Solanaceae family and also in the fruit of tomatoes. It has also been found on bean plants.

- Spinach leafminer feeds mostly on spinach, beet, and Swiss chard.
- The vegetable leafminer has a wide host range, including bean, cantaloupe, celery, cucumber, eggplant, onion, pepper, potato, squash, tomato, watermelon.
- American Serpentine leafminer is also a significant pest of chrysanthemums and is common in greenhouses.



**Damage:** Leafminer feeding results in serpentine mines (slender, white, winding trails); heavily mined leaflets have large whitish blotches. Leaves injured by leafminers drop prematurely; heavily infested plants may lose most of their leaves. If it occurs early in the fruiting period, defoliation can reduce yield and fruit size and expose fruit to sunburn. Pole tomatoes, which have a long fruiting period, are more vulnerable than other tomato crops. Leafminers are normally a pest of late summer tomatoes and can reach high numbers.



Infestations of tomato plants can occur throughout the entire crop cycle. Feeding damage is caused by all larval instars and throughout the whole plant. On leaves, the larvae feed on the mesophyll tissue, forming irregular leaf mines which may later become necrotic. Inside these mines both the caterpillars and their dark frass can be found. In case of serious infestation, leaves die off completely. Larvae form extensive Small, cylindrical, creamy white to yellow eggs, 0.35 mm long. First instar larvae are cream in colour with characteristic dark head. Larvae become greenish to light pink in second to fourth instars. Four larval Adults are 6 mm length, wing span of 10 mm. Brown wings with silvery-grey scales and characteristic black spots present in anterior wing. Have long and filiform antennae (bead-like antennae) Pupae are light brown, size is 6 mm. galleries in the stems which affect the development of the plants. Fruits are also attacked by the larvae, and the entry-ways are used by secondary pathogens, leading to fruit rot before or after harvest. The caterpillars attack only green fruit. The extent of infestation is partly dependent on the variety. Potential yield loss in tomatoes (quantity and quality) is significant and can reach up to 100%

### Life Cycle:

*Tuta absoluta* reproduces rapidly and can produce about 10 - 12 generations per year. Its life cycle ranges from 30 - 35 days. A mature female may lay up to 250 - 260 eggs during her life cycle which are deposited on aboveground plant parts. Egg hatching takes place 4 - 6 days after egg laying.



**Egg**



**Larva**



As they mature, larvae become darker green in colour with a characteristic dark band posterior to the head capsule. There are four larval instars. In between moulting, caterpillars can temporarily be found outside the leaf mines or fruit. The larval period, which is the most damaging, is completed within 12 - 15 days. Larvae do not enter diapause when food is available. Pupation may take place in the soil or on the leaf surface, in a curled leaf or within mines. A cocoon is built if pupation does not take place in the soil. Tuta absoluta can overwinter as eggs, pupae or adults depending on environmental conditions. Moths are active during the night and hide between leaves during the day.

Leafminers overwinter in the pupal stage in soil, and adults emerge in spring.

There are multiple overlapping generations each year.

Female flies puncture leaf undersides and insert eggs individually, producing many small wounds. Female flies are typically most active feeding and laying eggs near mid-day.

Larvae are found in mines, tunneling through and feeding in leaves or soft stems (e.g., onion scape).

Mature larvae make a slit in the upper leaf surface, emerge and drop to the soil, burrow in shallowly, and form brown pupal cases. Flies emerge in about 9 days.

**EGGS:** Tiny oval or elliptical white eggs inserted into tissue just below leaf surface.

**LARVAE:** Three tiny, active maggot-like instars that change from pale to greenish to yellow with black mouthparts in all stages or golden brown turning darker brown.

**PUPAE:** A tiny reddish/brown non-feeding puparium.

**ADULTS:** Very small black flies with yellow markings and abdominal stripes, and transparent wings.

**Control method:** Pheromone Lure TLM + water trap Or sticky trap

**Per Acre recommendation:** 6 To 8 Traps for Monitory & 8 to 12 traps for Mass Trapping.

#### Benefits:

- Cost Effective
- User Friendly
- Attract Targeted pest only
- Non toxic.
- Weather Proof long Lasting
- Decrease insecticide use so recommended for organic farming

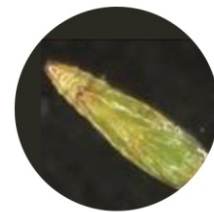
#### Features:

- Up to 45 + days field life
- Result oriented product
- User friendly Application
- Leak Proof Pouch Design

**Pest Scientific name:** Tomato Leaf Miner

**Lure name:** Chipku Tomato Leaf Miner Lure

**Suitable trap for Lure:** water trap Or Sticky Trap



**Pupa**



**Adult**

