

Tuta-Enemy™

A high-purity, controlled-release sex pheromone dispenser for monitoring and mass-trapping of *Tuta absoluta* (Tomato leaf miner).

Tomato Leaf Miner (*Tuta absoluta*)



Benefits

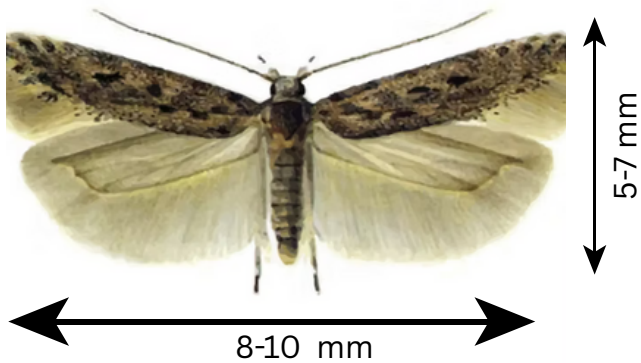
- ✓ Early Detection
- ✓ Species-Specific
- ✓ Chemical-Free
- ✓ Enhanced Crop Health
- ✓ yield protection
- ✓ Long-lasting & cost-Effective



Lock Out Leafminers Before They Strike

Tuta absoluta (*Phthorimaea absoluta*) commonly known as tomato leaf miner, is a small moth pest native to South America that has become a global threat to tomato production due to its rapid spread, high reproductive rate, and ability to cause near-total crop loss if unmanaged.

While tomato is the primary host, *Tuta absoluta* also infests other solanaceous crops—including potato, eggplant, pepper, and tobacco.



Adults are grey-brown moths, and upon mating the female lays up to 260 eggs on leaf undersides, stems, or fruit calyces. Newly hatched first and second instar larvae tunnel just beneath the leaf epidermis, creating silvery-white blotch mines.

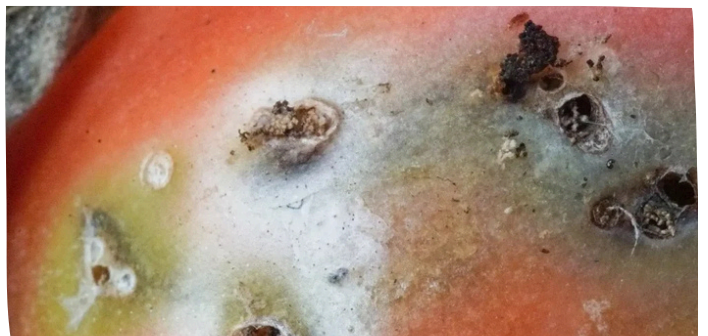


Severe foliar damage

As larvae grow into third and fourth instars (up to 5–7 mm), they bore deeper through mesophyll, petioles, blossoms, and green fruits, leaving necrotic spots on stems and calyces, and coarse frass-filled tunnels within tomato fruits. When larvae invade developing fruit, they often produce small entry holes and internal galleries that cause surface scarring, fruit deformation, and premature fruit drop; these wounds also serve as entry points for fungi and bacteria, leading to secondary rots that further degrade yield and marketability.



Characteristic blotch mines created by feeding larva



Damage on fruits



Tuta larva feeding inside tomato fruit

Life Cycle

Egg



Eggs are small, cylindrical, and creamy-white to pale yellow, measuring approximately 0.35–0.5 mm in length. They are laid singly on the underside of leaves, stems, or on fruit calyces, often concealed within leaf folds, and hatch in 4–6 days under warm conditions (20–30 °C).

Egg deposition sites are marked by tiny brown punctures and, when abundant, indicate an imminent larval influx.

larva



Larvae undergo four instars over 10–12 days, growing from 0.5 mm (first instar) to 5–7 mm (fourth instar) in length.

Early instars are translucent pale green with dark head capsules; later instars turn light pink or green depending on feeding substrate.

Larvae mine within leaf mesophyll—creating silvery galleries—and bore into stems and fruits, leaving coarse granular frass in tunnels; heavy infestations lead to leaf skeletonization, fruit scarring, and yield reductions up to 100 % .

Pupa



Mature larvae exit feeding sites and pupate in silken cocoons within soil clods or leaf litter, forming oblong pupae measuring 5–8 mm long and initially greenish, then darkening to brown as adult features develop.

The pupal period lasts 5–10 days, during which no feeding occurs; emergence holes in cocoon cells signal impending adult flights.

Adult



Adults have a body length of 6–10 mm and a wingspan of 8–10 mm; forewings are silvery-gray to brown with fine black speckles, while hindwings are lighter, fringed, and translucent.

Males are slightly smaller and more slender, whereas females have broader abdomens to accommodate up to 260 eggs each.

Adults are nocturnal, resting in foliage by day and flying at dusk to locate mates and oviposition sites, living 7–17 days depending on temperature.

Field Signs to Scout For:

- Blotch Mines: Silvery, sunken patches on leaves that widen into large galleries.
- Frass Deposits: Dark, granular droppings visible at mine exits and on fruit surfaces.
- Necrotic Lesions: Brown or blackened spots on stems, petioles, and calyces.
- Fruit Symptoms: Small punctures, internal tunneling, scarring, and secondary mold or bacterial rot.
- Premature Drop: Flowers and young fruits may fall 7–14 days after larval entry, signaling heavy larval pressure.

Lock Out Leafminers Before They Strike

Tuta-Enemy™ is a next-generation sex pheromone lure specifically formulated to attract male *Tuta absoluta* (tomato leafminer) for sensitive monitoring and mass-trapping in both open-field and protected tomato systems. Leveraging a proprietary blend of the major component (E3,Z8,Z11)-3,8,11-tetradecatrienyl acetate and optimized minor analogues, Tuta-Enemy™ delivers 8–10 weeks of consistent release in field conditions, enabling early detection, precise intervention timing, and significant population suppression.

Recommended Traps



Water trap - Males drowned in water



Delta trap - Males trapped in sticky cards

With its cryptic egg-laying, concealed larval feeding, rapid development, and multiple generations, *Tuta absoluta* poses a formidable challenge, necessitating vigilant monitoring and integrated management strategies.

Elevate your tomato protection today – order Tuta-Enemy™ now and secure your crop with the industry's most precise, organic-approved pheromone solution!



Bioenemy Africa Limited

+254 100 904587 | sales@bioenemyafrica.co.ke | www.bioenemyafrica.com

