Pheromone Trap : Tomato leafminer

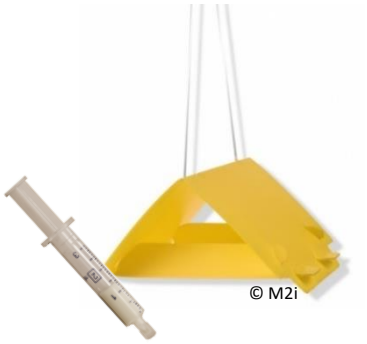
M2i technology

- Unique patented process of pheromone micro-encapsulation
- Controled rate of pheromone release for greater efficiency
- 100% biodegradable
- Easy storage, at room temperature
- Extended shelf life: 2,5 years

User guide

M2i recommends: Tuta Pro Caps® syringe + Delta trap

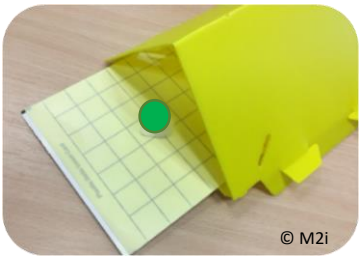
Trap setup: empty the content of the syringe into the cup. Remove the protective film from the sticky sheet. Stick the cup containing the pheromone formulation in the middle of the sheet. Place the sticky sheet in the trap. The moths are attracted by the sexual pheromone, enter the trap and are caught.



Characteristics of Tuta Pro Caps®

Type of product	Pheromone dispenser
Use	Monitoring
Active substance	(E, Z, Z)-3, 8, 11-tetradecatrienyl acetate (E, Z)-3,8-tetradecadien-1-yl acetate
Volume of formulation	0,5 mL
Indicative diffusion*	3 months
Targeted insect life-stage	Adult (moth)
Estimated radius of diffusion	Moths attracted on a radius of 7m

* depending on climatic conditions, for an average temperature of 30°C and without strong winds.

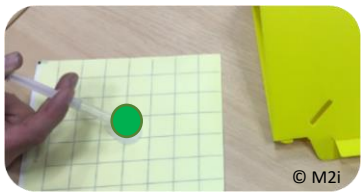


Monitoring setup

Detection period: from March to October in field-scale crops ; throughout the year in greenhouses (adapt and renew the pheromone dispenser according to the recommended diffusion time).

Trap location: hung on the upper part of the plant canopy, at a maximum of 1m high.

Recommended density: 2-5 traps/ha for field-scale crops; 1 trap/ha in <2500m² greenhouses, 2-4 traps/ha in >2500m² greenhouses.



Pest monitoring and recommendations

Trap follow-up frequency	Weekly
Recommended intervention	As soon as moths are caught
Pest control methods	During the critical season and depending on trapping levels: it is possible to perform an additional insecticide and/or a biocontrol treatment according to the insect life stage. Refer to recommendations of registered products for plant protection (ephy.anses.fr) and/or to your technical advisor.
Possible preventive measures	Crop rotation with non-host species of *T. absoluta* (eg. lettuce). Tillage to reduce pupae numbers. Limit the presence of host-plants, cultivated or wild, close to the crop (eg. Black nightshade). Eliminate green waste and infested leaves/fruits regularly.

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Pheromone Trap : Tomato leafminer

The tomato leafminer (*Tuta absoluta*)

Pest life-stage: caterpillar **Order**: Lepidoptera

The Tomato leafminer is native from Peru and has rapidly spread at a global level. Adults are mottled grey/brown. They measure 5 to 7 mm long and live between 6 and 15 days, depending on gender. Females lay their eggs one by one (up to 260 eggs in their lifetime) on the back side of leaves, on stems or fruits. They hatch 5-7 days later.
Caterpillars are whitish after hatching (L1). They become greenish to light pink (L2 to L4). They measure around 8 mm and develop in approximatively 20 days. Caterpillars feed on leaves, stems or fruits, which affects the plant development (reduction of photosynthesis) and favours necrosis development.
When fully grown, caterpillars spin a cocoon in the soil or on the plant to pupate. Adults emerge 10-12 days later. The flight period extends approximatively from March to October in field crops and throughout the year in greenhouses. The pest can spawn up to 12 generations per year depending on the geographical area and weather conditions.

Recommandations / Security
Keep out of reach of children. Keep away from domestic animals.
Store away from food and drink. Do not freeze.
Do not eat, drink or smoke during use.
Wash hands after use.
Store in original packaging. Comply with doses, conditions, instructions and precautions for use mentionned in the user's guide.
Dispose of the empty and clean packaging in the household trash.

First aid
If eye contact occurs, rinse with water for several minutes.
In case of skin contact, wash with plenty of water.
If swallowed, do not induce vomiting, rinse mouth and see a doctor.
In case of faintness, see a doctor and show him the product label.

Product approved for organic agriculture.

Host plants

The main host-plant of this pest is tomato. It can also infest other cultivated and wild Solanaceae plants (potato, eggplant…) and other families (Amaranthaceae, Convolvulaceae, Fabaceae or Malvaceae).

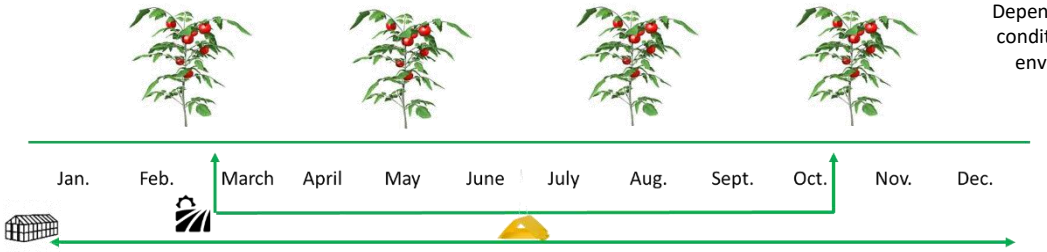
Detection strategy: pheromone monitoring

Pheromones are substances produced by insects which operate as a signal between individuals of a same species. There are different types of pheromones: alarm, aggregation, sexual… Monitoring with sexual pheromones is based on a lure placed inside a trap which mimics the substance produced by the female. Lure attracts males which are captured. This enables the detection of the pest's onset and the follow-up of its infestation level. Monitoring also helps decision-making (to launch a curative intervention) and/or measuring the efficiency of a treatment.

Benefits

This method is efficient, selective and harmless for fauna, flora, operators and local residents. It does not generate residues, inputs or resistance mechanisms.

Detection period for *T. absoluta*



Depends on weather conditions and crop environnement

Icons made bv WesAbrams

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