

Pheromone trap : The citrus mealybug



PHEROMONE DISPENSER



M2i technology

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

User guide

M2i recommends: Citri Pro Caps® syringe + Sticky trap

Trap setup: remove the protective film. Stick the cup in the middle of the adhesive side. Empty the content of the syringe into the cup. Male mealybugs are attracted by the sex pheromone and are trapped on the adhesive.

Characteristics of Citri Pro Caps®

Type of product	Pheromone dispenser
Use	Monitoring
Active substance	Cis-planococcy acetate
Formulation volume	0,5 ml
Indicative diffusion*	2 months
Targeted insect life-stage	Adult (male)
Estimated radius of diffusion	Male mealybugs attracted on a radius of 10 m

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

Monitoring setup

Detection period: from March to October (adapt and renew the pheromone dispenser according to the recommended diffusion time).

Trap location: hung above the crop/plant

Recommended density: 1 traps/500m² or 1000m²



Pest monitoring and recommendations

Trap follow-up frequency	Weekly
Recommended intervention	As soon as a 1 st male mealybug is trapped
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	Favor the introduction of predators (auxiliary insects, birds); remove green waste from past crop; disinfect all the materials used in greenhouses (drip system, boxes, etc.)

Pheromone Trap : The citrus mealybug



The Citrus mealybug (*Planococcus citri*)

Pest life-stage: nymph and adult (female) **Order:** Hemiptera

The citrus mealybug is native from Asia. This Hemiptera has a strong sexual dimorphism. The female is wingless, with a flattened thick body and short, waxy filaments along the margins. It is covered with white mealy powder and is 3 mm long. In contrast, the male resembles an elongated gnats, with 2 tail filaments, and is 4.5 mm long. Moreover, unlike females which live up to 29 days, males don't feed on plants and live only 2 days. The nymphs are morphologically similar to the adult females.

Damages are caused by nymphs and adult females which are sap feeders. It induces defoliation and leaf yellowing, but also viruses transmission, sooty mold development, cryptogamic disease causing reduction of the photosynthetic capacity. This species can lead to a total fall of the fruits.

Planococcus citri can generate between 3 and 8 generations per year (e.g. 6 generations in Arizona). This species particularly thrives in hot and humid habitats (tropical regions or greenhouses in temperate regions).

Recommendations / 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 mentioned 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 citrus mealybug is a polyphagous species feeding on more than 200 host plants such as fruit shrubs and trees (lemon tree, orange tree, coffee tree, mango tree, etc.), and ornamental plants (Amaryllis, Cyclamen, etc.)

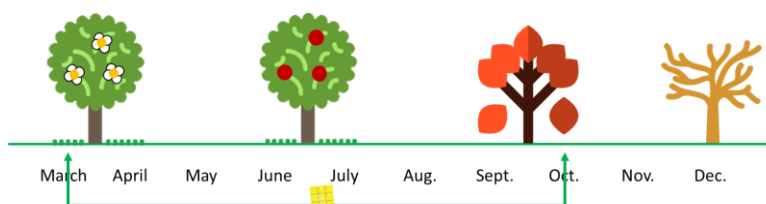
Detection strategy: pheromone monitoring

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 *P. citri*



Indicative period for Europe

Drawings by Sophie Duprat Caoure