Pheromone trap :

The vine mealybug

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: VMB Pro Caps® syringe + Delta trap

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

Characteristics of VMB Pro Caps®

Type of product	Pheromone dispenser
Use	Monitoring
Active substance	Lavandulyl senecioate
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

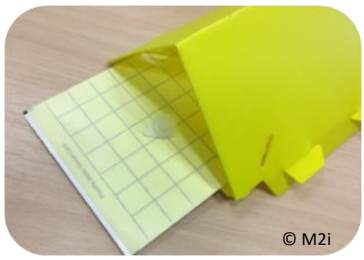
* depending on climatic conditions, for an average temperature of 30°C and without strong winds.

Monitoring setup

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

Trap location: hung in the foliage of the vine (or other plant).

Recommended density: 1 trap/ha.



Pest monitoring and recommendations

Trap follow-up frequency	Weekly
Recommended intervention	As soon as a 1st 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; carry out foliage-thinning of the crop (leaf removal and pruning) to favor ventilation, predator accessibility and remove a part of the pest population.

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Pheromone Trap :
The vine mealybug

The vine mealybug (*Planococcus ficus*)

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

The vine mealybug has a strong sexual dimorphism. The female is wingless, with a flattened thick body,short, waxy filaments along the margins and brown legs. 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 1 mm long. Moreover, unlike females which live up to 46 days, males don't feed on plants and live only 1-3 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 is able to inhibit the normal ripening process of grapes, causing poor taste and color and leading to the eventual withering of grape bunches.

Planococcus ficus can generate between 3 and 8 generations per year (e.g. 7 generations in California; only 3 in Italia). This species is highly dependent on temperatures.

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 vine mealybug is a polyphagous species mostly found on vine but also on other host plants in close proximity to vineyards such as apple tree, common fig, willow, etc.

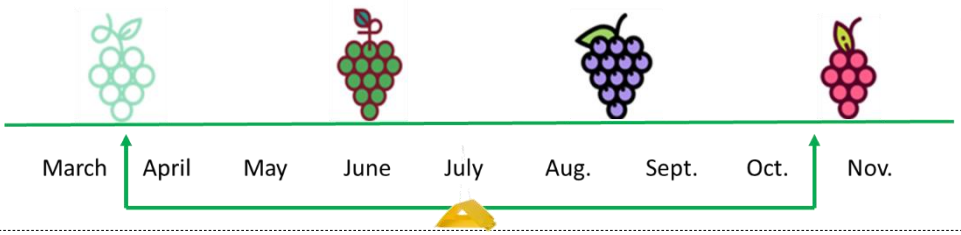
Detection strategy: pheromone monitoring

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. ficus*



Indicative period for Europe

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