

Citrus mealybug pheromone

The citrus mealybug, *Planococcus citri*, has become a more frequent pest in northwest Europe in recent years. It is found in almost all propagation sites for ornamental plants and in tropical greenhouses like botanical gardens, zoos, etc. Increased import of potted plants and cut flowers and the decreased number of chemical pesticides available to control the citrus mealybug are factors involved in the increased occurrence of this pest.

CITRUS MEALYBUG

Of all the mealybug species, the citrus mealybug is the most commonly found. It can be distinguished from other mealybugs by the absence of tail parts that are characteristic of other species. The female mealybugs are the easiest to detect and observe because they occur on plants, whereas males are very tiny, mosquito-like insects almost always flying around. Males have a longevity of only 1-2 days and their only job in life is the fertilization of females.

Mealybugs belong to the order of the true bugs, like whitefly and aphids. The citrus mealybug is a member of the family of Pseudococcidea, to which the Glasshouse mealybug (*Pseudococcus affinis*) and the Longtailed mealybug (*Pseudococcus longispinus*) also belong.

The citrus mealybug is found in crops such as Cactus, Ficus, Schefflera, Passiflora, Codiaeum, and Oleander and in several palm species. An adult female is covered with a white waxy secretion. It can lay 300 to 500 eggs in a cotton-like pouch, made of wax threads, which protects the eggs against beneficial insects and pesticides.

After laying eggs over a period of 5 to 10 days, the female mealybug dies. The young mealybugs, which are most mobile, disperse to find suitable feeding sites, and then begin to feed on plant sap. There are three larval stages in a mealybug's lifecycle. The duration of this lifecycle depends on temperature; it varies from 90 days at a temperature of 18°C to 30 days at 30°C.

DAMAGE

The mealybug can, like an aphid, cause serious damage. By sucking plant sap, less sugars and nutrients remain for the plant to grow, which makes it more susceptible to other pests. Apart from reduced vigour, mealybugs also cause yellowing, defoliation and cosmetic damage.

CONTROL

Because the number of pesticides available has decreased, the citrus mealybug is more difficult to control with only pesticides. Moreover, adult females and eggs are protected by the wax coating. The eggs and young mealybugs often sit so close to each other that they form clumps in which the individual specimens are very hard to reach by spraying.

In recent years, we gained good experience with the introduction of beneficial insects against the citrus mealybug. The combined introduction of the parasitic wasp *Leptomastix dactylopii* (Leptomastix-System) and the predatory beetle *Cryptolaemus montrouzieri* (Cryptolaemus-System) offers the best chance for success. At first, the parasitic wasp *Leptomastix* is introduced when the level of damage caused by the citrus mealybug is still low. If there are more mealybugs in the crop, you can also introduce *Cryptolaemus*.

MONITORING & SCOUTING WITH PHEROMONES

To determine the right moment to start the introduction of beneficial insects, a very ingenious method of detection is used. For this purpose, Biobest has a pheromone lure, which attracts flying (male) citrus mealybugs.

This pheromone is packed in a lure, which can be easily fixed inside a delta trap or to a yellow sticky trap using a paperclip. During a period of at least six weeks, male citrus mealybugs will be attracted by the pheromone, and will be captured in the delta trap or on the yellow sticky trap.

The pheromone lures are offered per 10 pieces.

Because the pheromone is very specific and only attracts the citrus mealybug, it is very important to continue scouting the crop for other species of mealybug. Trials have shown that other mealybug species are not attracted to this lure.

ADVANTAGES

- **Accurate detection of the very first male mealybugs**
- **Quick detection allows for more efficiency and better targeted control**
- **Can be introduced in combination with other biological or integrated systems**
- **Can be easily put in the crop**
- **No risks for resistance**
- **Complete safe for humans, animals and plants**
- **Not necessary to wear protected clothing during the application**