

Biological control against the new invasive Mealybug *Delottococcus aberiae*

Problem

Delottococcus aberiae is an invasive South African mealybug that affects fruits and leads to substantial crop losses. There are no effective natural enemies in the native fauna, so controlling this pest in organic farming is difficult.

Solution

Solutions are mainly cultural practices to enhance soil predators, such as *Gaeolaelaps (Hypoaspis) aculeifer* and the release of the predator *Cryptolaemus montrouzieri*. This predator can be bred by the farmers with the help and advice of local advisory services.

Benefits

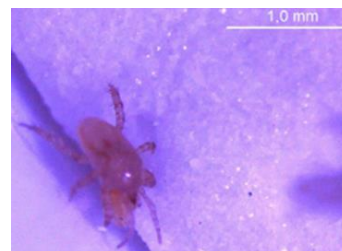
Combining several measures¹ with those enhancing natural predators can effectively reduce the population year after year.

Practical recommendation

- The pest is present all year round, but the most critical time to control is from the fruit set until it reaches two centimetres (April to June), when the fruit is no longer susceptible to deformation.
- *D. aberiae* adult females lay eggs on the ground and on trunks in spring, after which the newly emerged nymphs return to the tree canopy. Males and females of a soil-dwelling mite, *Gaeolaelaps (Hypoaspis) aculeifer* (Picture 2), prey on the first instar nymphs of *D. aberiae* mealybugs. Therefore, enhance the presence of this soil predatory mite by adding compost or mulching. The presence of ground cover can also enhance the presence of these predatory mites.
- Release *Cryptolaemus montrouzieri* on the citrus canopy of the predator (Picture 1) from March onwards and at the larval stage (dose of 3/10 per tree, representing 1200-4000 adults/ha), to reduce pest levels at the time of maximum fruit sensitivity. Releasing adults in summer (Picture 3) at a dose of 3/10 per tree reduces the wintering population and, therefore, the levels of the following year.
- On-farm rearing of *C. montrouzieri* is carried out on potato sprouts filled with *Planococcus citri* (Picture 4).



Picture 1: Adults and larvae of *Cryptolaemus montrouzieri* (Photo: Deval, I, UPV)



Picture 2: Soil predatory mite *Gaeolaelaps aculeifer* (Photo: Pérez-Rodríguez, J, UPV).

Applicability box

Theme

Crop production, Citrus fruits, Disease and pest control

Keywords

Citrus, Plant protection, Pest control, Biological control, Natural enemies

Context

Mediterranean basin

Application time

From March to September

Required time

From two to eight months

Period of impact

From six months to one year



Picture 3: Releases in field of *C. montrouzieri* adults (Photo: Deval, I, UPV)



Picture 4: Farm mas rearing of *C. montrouzieri* on *S. tuberosum* and *Planococcus citri* as substrate (Photo: Deval, I, UPV).

Further information

Video

- [Incidence and control of South African Cottonet in citrus production](#)
- [Classical Biological control against *D. aberiae*](#)

Further Reading

- Pérez-Rodríguez, J., Calvo, J., Urbaneja, A., Tena, A. 2018. [The soil mite *Gaeolaelaps \(Hypoaspis\) aculeifer* \(Canestrini\) \(Acari: Laelapidae\) as a predator of the invasive citrus mealybug *Delottococcus aberiae* \(De Lotto\) \(Hemiptera: Pseudococcidae\): Implications for biological control.](#)
- Pérez-Rodríguez, J., Miksanek, J. R., Selfa, J., Martínez-Blay, V., Soto, A., Urbaneja, A., Tena, A. 2019. [Field evaluation of *Cryptolaemus montrouzieri* \(Mulsant\) \(Coleoptera: Coccinellidae\) as biological control agent of the mealybug *Delottococcus aberiae* De Lotto \(Hemiptera: Pseudococcidae\).](#) Biological Control, Volume 138

Weblinks

1. Vercher Aznar, R. 2022. [Practice abstract Cover crops for pest control in Mediterranean citrus orchards.](#) ECOVALIA. BIOFRUITNET
- Check the [Organic Farm Knowledge platform](#) for more practical recommendations.
 - [Delottococcus aberiae](#) (in Spanish)

About this practice abstract

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