PRACTICE ABSTRACT

Breeding natural enemies – successful farmers´ experiences

Problem

Mealybugs are a major problem in Valencian citriculture, aggravated by the appearance of two new invasive species.

Solution

Release of the predator *Cryptolaemus montrouzieri* bred by farmers with the help and advice of the local governmental advisors, as it happens in Comunidad Valenciana, Spain.

Benefits

The combination of several measures[1] with those enhancing the predator can effectively reduce the population year after year.

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 May to October

Required time

From 3 to 12 months

Period of impact

From 6 months to various years

Practical recommendation

- Farmers requested to participate as "collaborating insectaries" while the public administration provided the insects and advice.
- A breeding cycle has a total duration of 3-4 months. Farmers can breed 1 to 4 cycles per year. The process consists of the following:
    - Germinating potatoes on the substrate (sand or peat) in the dark, at 22°C, with air renewal and regular watering for one month (Picture 1).
    - The pest (*Planococcus citri)* is provided to them on fake pepper leaves, and they are released into the brood, which is then kept at 26°C for one month (Picture 2).
    - The adults of the predator are introduced (35 days). The predator is collected for three weeks. They are attracted to the point of light, and with food (a mixture of water, agar, honey and sugar), and collected manually (Picture 3)
- They are released in the plots at inoculative doses (2,000 adults/ha). Release time: for *Planococus citri* (June), for *Delottococcus aberiae* (June to September), for *Pulvinaria polygonata* (May to October). They are also released in other crops, such as persimmon and pomegranate (from June to September).

Picture 1: Breeding room with potato sprouts. Photo: Deval, *I.*

Picture 2: Release of *Panococcus citri* in the breeding chambers. Photo: Deval, *I.*

Picture 3: From left to right. Food substrate and light source to attract predator adults, adult capture, and release in the field. Photo: Deval, *I.*

Further information

Further Reading

- Mass culture of *Cryptolaemus* and *Leptomastix*. Natural Enemies of citrus mealybug. T.W. Fisher

Weblinks

1. Vercher, R. 2022. Practice abstract Control methods in organic citrus against the new invasive Mealybug *Delottococcus aberiae*. ECOVALIA. BIOFRUITNET.
- Check the Organic Farm Knowledge platform for more practical recommendations
- Characteristics of the public insectaries of the Valencian region (ES)

About this practice abstract

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www.ecovalia.org

Author: Rosa Vercher

Contact: rvercher@eaf.upv.es

Review: Ambra de Simone (IFOAM Organics Europe), Lauren Dietemann (FiBL)

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