PRACTICE ABSTRACT

Beneficial nematodes against codling moth in organic apple production

Problem

The codling moth (*Cydia pomonella*) is the most important and most frequent pest in organic apple growing. The larvae of the codling moth damage apples and can cause considerable crop losses (picture 1).

Solution

If infestation pressure is high, the use of nematodes (*Steinernema feltiae*) in autumn can be considered as one component of the codling moth control strategy.

Benefits

For sustainable, long-term control, regulation can be accomplished via a combined strategy of monitoring, Pheromone confusion, beneficial nematodes, plant hygiene, and the use of granuloviruses.

Practical recommendation

Codling moth larvae are a natural host of *S. feltiae* nematodes.

Applicability box

Theme

Crop production, Horticulture, Temperate fruits

Keywords

Plant protection; Pest control, Biological pest control

Context

Central Europe

Application time

Autumn after harvest

Period of impact

Autumn

Equipment

Nematodes *(Steinernema feltiae), nozzles*

Best in

Pome fruits

Application period:

- Use nematodes (*S. feltiae*) in orchards with more than 1% active fruit infestation at harvest.
  → Measure the fruit infestation by screening at least 1000 fruits from the affected plot
- Apply in autumn when larvae are seeking shelter behind the bark, in bark cracks, etc., to overwinter.

Weather conditions:

- Temperatures should be more than 10°C for at least 3-4 hours after application.
- Protect from UV light during application.
- Humidity: trees should be damp at the beginning of the application, with continuous high humidity for at least 12 hours, preferably 24 hours after the application. Rain, drizzle, fog or dew after application increases the effect (use night moisture).

Technique and application rate:

Use nozzles with a width of 0.8 mm diameter and a maximum pressure of 5 bar.

- Recommendation: 1.5 billion nematodes/ha with a minimum of 1000 L of water per hectare.
- The addition of a wetting agent for better distribution across the tree stems is crucial.

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Picture 1: Tunneling codling moth larva (Photo: C. Adolphi, FÖKO). Picture 2: Application of nematodes (Photo: ÖON).

Further information

Weblinks

- The codling moth, a climate winner (German)
- Development of a combination strategy with different biological methods to reduce the use of insecticides against codling moth. (German)

About this practice abstract

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