

Novel pheromone delivery system to reduce codling moth (*Cydia pomonella* L.) damage in organic pome fruit orchards

Problem

Codling moth (CM) represents one of the most damaging pests in pome fruit organic orchards. Economic losses due to CM depend on the number of generations per year but can account for up to 30% of the yield loss.

Solution

Pheromone mating disruption plays a key role in CM control. However, the best control strategy is using two products in an orchard: one of the classic dispensers, e.g., Iso-mate CTT¹, RAK 3², Cydia Pro Press (Pictures 3 and 4), and aerosol dispenser, e.g., Puffer Aerosol Cabinets³ (Picture 5).

Benefits

New pheromone delivery system can increase the control effectiveness, reduce labour costs and plastic waste from dispensers.

Practical recommendation

- To achieve a high efficacy, the orchard size should be more than 3 ha. Puffer can be a good solution to reduce labour costs and the burden due to plastic waste from dispensers, but in sites with not too much wind exposition.
- Two kinds of dispensers should be introduced into the orchard before the beginning of CM flight.
- Hang the plastic **dispensers** (Picture 3) on every third tree or apply the “dots” (Picture 4) every 3-4 m on the border rows of orchard trees and at the beginning and end of each row (at two thirds of the tree height) (Picture 2).
- Place 2 **aerosol** dispensers per ha inside the orchard. These “puffer” (Picture 5) units should be hung on poles above trees, at about 3.5-4.0 m height.
- Install **delta traps**, 3 per orchard (Picture 1), for monitoring the presence of adult CMs during the season. They should be placed halfway between consecutive “puffer” units. If the strategy of mating disruption works well, no moths should be found in the monitoring traps during the entire season.

Applicability box

Theme

Crop protection, Farm management

Keywords

Pest control, Horticulture, Farm management

Context

All European countries

Application time

Just before the first codling moth flight

Period of impact

Growth season from April to September – BBCH 56/57–87/89.

Equipment

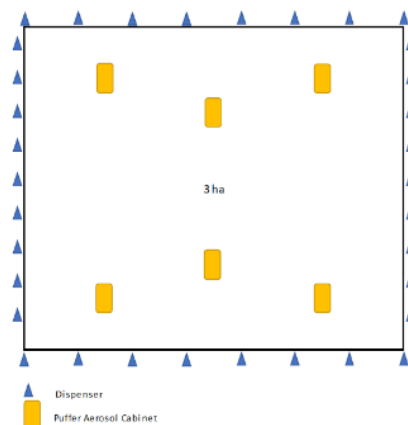
Traps with sticky floor and pheromone, aerosol cabinets, dots applicator

Best in

Orchard size of at least 3 ha



Picture 1: Delta trap for monitoring codling moth. Photo: W. Piotrowski.



Picture 2: Scheme of hanging two kinds dispensers for CM mating disruption. Photo: W. Piotrowski.



Picture 3: Different kinds of pheromone dispensers. Photo: W. Piotrowski.



Picture 4: Dot of "Cydia Pro Press". Photo: W. Piotrowski.



Picture 5: Aerosol dispenser ("Puffer") positioned on top of a trellising pole. Photo: W. Piotrowski.

Further information

Further reading

1. [Isomate CTT application guide](#) (PL)
2. [RAK 3 application guide](#) (PL)
3. [CheckMate Puffer CM](#) (PL)

Weblinks

- Warlop, F., Kienzie J. 2022. [Practice abstract Codling moth prevention: Preserve antagonists in organic apple and pear orchards](#). GRAB. BIOFRUITNET.
- Check the [Organic Farm Knowledge](#) platform for more practical recommendations.

About this practice abstract

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