

Direct regulation of the black cherry aphid in organic table cherry production

Problem

The black cherry aphid (*Myzus cerasi*) is the main pest in modern organic table cherry production. In orchards with installed rain protection and insect nets, robust aphid populations can build up, leading to significant yield losses and tree damage (Picture 1, 2, 9).

Solution

The black cherry aphid can be indirectly¹ and directly regulated. This practice abstract gives recommendations for direct regulation using kaolin, paraffin oil and pyrethrum+soap or azadirachtin at different periods of the aphid cycle. If possible, avoid any plant protection application after bloom to preserve the natural enemies.

Applicability box

Theme

Crop production, Horticulture, Temperate fruits

Keywords

Temperate fruits, Cherry, Plant protection, Black cherry aphid, *Myzus cerasi*

Context

Table cherry orchards (covered)

Application time

Autumn (kaolin), spring (paraffin oil), spring and summer (pyrethrum+soap, azadirachtin)

Benefits

Minimisation of tree damage and fruit losses due to black sooty fungi growing on aphid honeydew (Picture 2).

Practical recommendations

Direct regulation

- Apply kaolin (Picture 4) in autumn to reduce the immigration of winged aphids from the secondary host back to the cherry tree (Picture 3).
- Apply paraffin oil in spring prior to bud break when fundatrices (or founding mothers) hatch from the winter eggs to further reduce the starting population in spring (Picture 5).
- Apply pyrethrum + soap or azadirachtin after bloom.

	Product	Application period and number of applications	Recommendations for application
Autumn	Kaolin (2% or 32 kg/ha*)	In the preceding <u>autumn</u> up to the end of leaf fall (BBCH 91-97) 2-3 applications	Spray as soon as the first winged aphids are found on the cherry leaves (mid to end of September) (Picture 3, 4). Apply under dry conditions, preferably in two runs, with the kaolin film drying between runs to ensure a good coating on the leaves. Renew the protective cover when the white residue on the leaves has faded due to rain (7-21 days) until all leaves are fallen.
Winter	Paraffin oil (3.5% or 56 l/ha*)	<u>Prior to bud break</u> (BBCH 51-53) 1-2 applications	Apply when fundatrices start to hatch (43-61 days, above a threshold of 3°C, usually end of February/March, Picture 5). Apply under dry and sunny conditions, preferably in two runs with half of the concentration (1.75%) to the point of dripping wet and let the paraffin oil film dry between both runs to ensure a good application on tree buds, shoots and stem, where the aphid eggs are hidden. The effect of the paraffin oil application takes a couple of days. It is best to check the efficacy five to seven days after the application.
Spring	Pyrethrum (0.05% or 0.8 l/ha*) + soap (2% or 20 l/ha*)	<u>Prior to and after flowering</u> 1-2 applications	It can be sprayed prior to flowering (BBCH 54-57, Picture 6) or after flowering (Picture 7) before the leaves curl up (direct contact of the fungicide with the aphids needed). Do not spray any insecticide during bloom to avoid killing pollinators and other beneficials.
	Azadirachtin (0.3% or 4.8 l/ha*)	<u>After flowering</u> 2-3 applications	Apply as soon as there is enough leaf biomass (Picture 7). Azadirachtin is taken up by the leaves and has, therefore, a slow effect but can be effective with good application and slow aphid development. Insufficient effect on young trees and trees with strong growth.

* Dosage for 10,000 m³ tree row volume (TRV) and 1600 l/ha spray broth volume. Check country specifications and authorisation.
Direct regulation of the black cherry aphid (*Myzus cerasi*) in organic table cherry production. FiBL. BIOFRUITNET practice abstract.

Indirect regulation

Indirect regulation of the black cherry aphid includes releasing natural enemies or promoting them by offering suitable habitat¹.



Picture 1. Black cherry infested shoot in an organic cherry orchard with rain protective covering. (Photo: C. Boutry, FiBL)



Picture 2. Black sooty fungi growing on honeydew secreted by the aphids on fruits. (Photo: A. Häseli, FiBL)



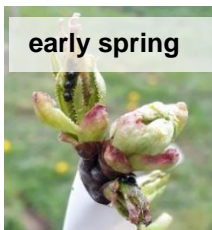
Picture 3. Winged aphids fly back from the secondary host onto the cherry tree and produce un-winged aphids, which lay the winter eggs. (Photo: C. Boutry, FiBL)



Picture 4. Cherry tree leaves sprayed with kaolin to prevent aphid immigration. (Photo: F. Cahenzli, FiBL)



Picture 5. Fundatrices hatched from the winter eggs. (Photo: C. Boutry, FiBL)



Picture 6. Fundatrices start to produce nymphs. (Photo: C. Boutry, FiBL)



Picture 7. Black cherry aphid colonies on cherry leaves prior to leaf curl. Photo: (C. Boutry, FiBL)



Picture 8. Strong black cherry aphid infestation. Photo: (C. Boutry, FiBL)



Picture 9. Severely curled leaves due to the aphids sucking sap from buds and foliage. (Photo: A. Häseli, FiBL)



Picture 10. Winged aphids appear in summer and further spread within the orchard. (Photo: C. Boutry, FiBL)

Further information

Video

- BIOFRUITNET cherry aphid video

Further reading

- F. Cahenzli, C. Boutry, 2022. [Autumn kaolin treatments and early spring oil treatments against Myzus cerasi in Sweet cherries.](#)
- M. Friedli, A. Häseli, P. Stefani, F. Baumgartner, C. Boutry, C. Daniel, F. Cahenzli. [Different approaches to regulate the black cherry aphid \(Myzus cerasi\) in organic table cherry production.](#)
- A. Häseli, P. Stefani, M. Friedli, 2020. Regulation of the black cherry aphid (Myzus cerasi) in organic table cherry production.
- A. Häseli, P. Stefani, 2020. Factsheet: [Plant protection in organic stone fruit production.](#) (available in DE, FR, RO, CZ, HU, RU)

Weblinks

1. Boutry, C. 2022. [Practice abstract Indirect regulation of aphids in organic stone fruit orchards with natural enemies.](#) FiBL. BIOFRUITNET.
- Check the [Organic Farm Knowledge](#) platform for more practical recommendations.

About this practice abstract

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