Regulation of the black cherry aphid (*Myzus cerasi*) in organic table cherry production

Andreas Häseli, Patrick Stefani and Michael Friedli

ecofruit 2020 - 19th International Conference on Organic Fruit-Growing
Hohenheim, 19th February 2020
black cherry aphid (*Myzus cerasi*)

- Main pest in modern organic table cherry production with installed rain protection and insect nets
- Strong aphid populations can build up → large yield losses and tree damages:
  - Favourable microclimate
  - Less aphid antagonists (e.g. hover flies, lacewings or ladybirds)
- Control of stem mothers essential
black cherry aphid (*Myzus cerasi*)

- **Possible stages for successful regulation**
  - Oil products **before the hatching** of the fundatrices in spring at sprouting
  - Contact insecticides **after the hatching** of the aphids but before curling of the leaves caused by the sucking activity of the aphids
  - During **return flight** of the winged aphids from secondary hosts to the cherry trees but before laying of eggs

- **Current recommendation**
  - 1-2 treatments with paraffin oil at sprouting
  - Pyrethrum + Natural (soap) after flowering
  - NeemAzal T/S after flowering (slow effect)
    - Old trees: leaf damages possible, prevention of strong deformations of shoots and fruit contaminations
    - Young trees: strong aphid damages due to slow mode of action
    → **additional early treatment with fast effect important**
Experimental design trial 2017

- Trees of varieties Kordia (2013) and Merchant (2008)
- Treatments
  - «early»: paraffin oil 15.03.2017
  - «late»: paraffin oil 27.03.2017
  - «early + late»: paraffin oil 15. & 27.03.2017
  - control (untreated)
- Number of aphid colonies assessed on the 27.04.2017
Results trial 2017

- Number of aphid colonies significantly reduced in all treatments
- Better effect on younger trees
- Weakest effect with 80 % reduction on old trees in treatment «late»
Experimental design trial 2018

**Trial with paraffin oil**

- Trees of varieties Kordia (2017 and 2013) and Christiana (2017)
- Treatments
  - «early»: paraffin oil 02.04.2018
  - «early + late»: paraffin oil 02. & 06.04.2018
  - control (untreated)
- Number of aphid colonies assessed on the 13.04.2018

**Trial with pyrethrum + soap**

- Trees of varieties Kordia (2017 and 2013) and Christiana (2017)
- Treatments
  - Pyrethrum (Pyrethrum FS) + soap (Natural)
  - Control (untreated)
- Number of aphid colonies assessed on the 24.04.2018
For young trees very good effect with the two treatments «early» and «early + late»

For older, voluminous trees only good effect with two applications in the treatment «early + late»

Insufficient effect for older trees with only one application
Results trial 2018 - pyrethrum + soap

- Non-significant partial reduction of 82% on the young trees
- No effect on the older, voluminous trees
Conclusions and outlook

• Application technique (wetting) crucial for success!
• Paraffin oil at sprouting
  • Most important treatment → Reduction of the stem mothers
  • With 2 treatments or already with 1 treatment up to 100 % effect
  • Effect still present after hatching of aphids
• Pyrethrum + soap
  • Treatments end of flowering before the leaves curl up
  • Very good application necessary (in 2 passes with high water volume)
  • Only with very good wetting (young trees) certain, but insufficient effect
• Neem preparations
  • 2-3 treatments from leaf development after flowering
  • Good effect with good application and slow aphid development
  • Insufficient effect on young trees and strong growth
• Indirect regulation of aphids in cherry orchards with flower strips and or release of beneficial insects
Thank you for your attention