

Agronomical practices to reduce the risk of Rosy apple aphid (*Dysaphis plantaginea*) occurrence in organic fruit production

Problem

Rosy apple aphid (Picture 1) causes leaf crumple, hinders shoot development, and leads to deformed, small, unmarketable fruits. Honeydew production also causes the development of saprophytic fungi.

Solution

Correct agronomical management such as optimal nitrogen (N) fertilisation, irrigation, pruning, and control of the secondary host of the aphid can reduce the incidence of the pest.

Benefits

Better growth of the tree and nutrients availability, resilience against other aphids and diseases, production of marketable fruits and higher profitability of the organic farm.

Applicability box

Theme

Crop production, Farm management

Keywords

Crop management, pest control, horticulture, farm management

Context

No climatic limitations

Application time

Throughout the growing season

Best in

All practices should be combined to achieve the best result

Practical recommendations

To include in the overall orchard management system:

- **Fertilisation:** Apply organic N fertilisers based on soil and leaves analysis, nutritional needs of the trees and expected rate of mineralisation of the organic fertiliser (OF). Use leguminous cover crops to stabilise nitrogen availability and reduce the need of OF. If applying different OFs, split the dose in two stages (i.e., first application before flowering, and the second after flowering).
- **Irrigation:** Base irrigations regime on the soil water measures using sensors or models to keep the optimum soil moisture (between field capacity and allowable depletion).
- **Pruning:** Ensure proper crown development, reduce the presence of dense areas (they received little light and air circulation) (Picture 2). Prune root suckers which grow out of the rootstock.
- Control *Plantago lanceolata* (secondary host) with cover cropping, weed control methods, etc.
- If infestation is high (Picture 3), remove the infested shoots and destroy them outside the orchard.
- Establish hedgerows or flower strips to favour natural predators (e.g., coccinellids, green lacewings, syrphid flies, etc.) or parasites (e.g., Hymenoptera) and reduce the population in the late spring-summer².



Picture 1. Apple tree leaf with a rosy apple aphid colony. (Photo C. Casera, Laimburg)



Picture 2. Heavily infested tree by aphids due to excessive shoot growth and lack of pruning. (Photo W. Piotrowski, InHort)



Picture 3. Heavily infested shoots, which have to be removed and destroyed. (Photo W. Piotrowski, InHort)

Further information

Further reading

- Dib, H., Simon, S., Sauphanor, B., Capowiez, Y. 2010. The role of natural enemies on the population dynamics of the rosy apple aphid, *Dysaphis plantaginea* Passerini (Hemiptera: Aphididae) in organic apple orchards in south-eastern France. ScienceDirect.

Weblinks

1. Website [HortiOchrona](https://hortiochrona.pl)
2. Pedersen, H., Bojesen, M. 2022. Practice abstract: Prevention of infestation using flower strips. [Hortiadvise](https://hortiadvise.org). BIOFRUITNET.
3. Check the [Organic Farm Knowledge platform](https://organicfarmknowledge.org) for more practical recommendations.

About this practice abstract

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ul. Konstytucji 3 Maja 1/3
96-100 Skierniewice, Poland
www.inhort.pl

Author: Wojciech Piotrowski, Małgorzata Tartanus

Contact: Wojciech.piotrowski@inhort.pl



Review: Ambra De Simone (IFOAM Organics Europe), Lauren Diemann (FiBL)

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