

How to deal with European canker (*Neonectria ditissima*) in organic orchards

Problem

The *Neonectria ditissima* fungus attacks trees in orchards, causing cankers and dieback of stems and young shoots, resulting in loss of fruiting wood and increased pruning costs. Fruit infections cause rot during the growing season or in storage. European canker is mainly a problem in north-western Europe's mild and humid climate (Netherlands, Belgium, northern Germany, Denmark and Scandinavian countries).

Solution

Combining preventive measures and sanitation with decision support systems and direct measures can greatly reduce infestation. Breeders should look for more resistant cultivars.

Benefits

Less infected parts of the tree give a healthier tree and a better yield with improved quality.

Applicability box

Theme

Crop production, Temperate fruits, Pest and disease control

Keywords

Disease control, apple and pear, European canker

Context

Europe, northwest Europe

Application time

Autumn during leaf drop, during the growing season

Period of impact

Lifetime of the orchard

Equipment

Pruning saw and scissors, sprayer, lime water

Practical recommendation

Preventive measures

- Cultivar susceptibility differs. If fruit tree canker is known to be a problem in the orchard, choose less susceptible varieties.
- Do not plant a new plot downwind of an old plot with a lot of fruit tree canker.
- Start with healthy trees and inspect the trees in the nursery.
- The type of soil and soil conditions influence the susceptibility of the trees. Plant the trees in healthy soil with good soil life. Avoid plots that are regularly flooded.
- The growing circumstances influence the susceptibility. Avoid dense trees, limit the growth with root pruning, and use limited fertilisation. The aim is to achieve balanced tree growth.
- Young trees with stem infections should be removed.
- Cut away infected spots on the stem and prune away infected branches. Repeated canker-pruning is necessary: in autumn/winter, pre-flowering and after flowering, until the end of June.
- Avoid unnecessary wounds such as on stems along poles or caused by thread rubbing.

Direct measures

- Cover wounds in autumn with a wound sealer. This is only effective if the cankerous wounds have been cleanly excised/milled out.
- Copper sprays in autumn (when allowed in your country). Leaves treated with copper decompose worse. Therefore, apply other measures first. Use copper only when necessary.

- Lime water (calcium hydroxide) in autumn via spraying or via overhead irrigation. Calcium hydroxide is a basic substance in Europe.



Picture 1. Stem infection (apple), Picture 2. Shoot infection (apple), Picture 3. Infected branch (pear), Picture 4. Pruning infected shoots (pear), Picture 5a. Rottiness (infection during flowering), Picture 5b) Spreading infection in the apple, Picture 5c. Rotting in storage, Picture 5d. Steel rot during storage, and Picture 6. Rottiness on Conference pear. Photo 1: M. Wenneker, WUR-NL, Photos 2-4: G. Brouwer, Delphy-NL, Photo 5: R.W.S. Weber, OVR-GE. Photo 6: PCFruit-Belgium.

Further information

Further reading

- Brouwer, G. 2023. Practice abstract European canker (*Neonectria ditissima*): Direct control with lime water. Delphy. BIOFRUITNET
- Weber, R.W.S. 2015. Die Biologie des Obstbaumkrebsspilzes (German)
- Weber, R.W.S., Børve, J. 2021. Infection biology as the basis of integrated control of apple canker (*Neonectria ditissima*) in Northern Europe.

Weblinks

- Check the Organic Farm Knowledge platform for more practical recommendations

About this practice abstract

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