

Regulation of black rot (*Diplodia seriata*) in organic apple production

Problem

Black rot (*Diplodia seriata*) occurs mainly in organically managed crops as fruit rot in the pre-harvest period.

Solution

The causal agent of black rot overwinters on the fruit mummies (unformed fruit) remaining on the tree. Picking out the mummies in winter reduces the infestation by *D. seriata* significantly.

Benefits

Removal of fruit mummies also has a preventive or infestation-reducing effect against the storage rot pathogens *Neofabraea alba* and *N. perennans*.

Practical recommendation

- Due to their tendency to form fruit mummies (Picture 4), some apple varieties are especially at risk of black rot infestation. These include *Gerlinde*, *Elstar*, *Dalinbel*, *Natyra*, *Ingrid Marie* and *Wellant*
- Infections are favoured by high temperatures (20-26°C) and prolonged rain events
- Heavy rainfall causes spores to be washed out of the fruit mummies, which then cause infection on the young fruit via the lenticels

Prevention:

- Choose robust varieties
- Look for infection hint on fruits and leaves:
 - First infections may become visible from the beginning of June
 - Leaf spots ("frog eyes") may appear on the leaves near infested shoots or fruit mummies (Picture 1), and black necrotic infestations form on the fruit (Picture 2), which later grow to the size of a pinhead and develop a red edge
 - From August onwards, the outbreak of brown rot can occur from these primary infections as shown in (Picture 3).
- Pick out fruit mummies consistently each year by hand before sprouting (February/March)

Applicability box

Theme

Crop production, Horticulture, Temperate fruits

Keywords

Prevention; Plant protection; Disease control

Context

Central Europe

Required time

Immediately

Period of impact

Summer

Equipment

Hygiene measures, manual removal of fruit mummies.

Best in

Organic apples



Picture 1: leaf symptoms ("frog eyes") (Photo: ÖON, 2013)



Picture 2: Fruit infection on lenticels (Photo: ÖON, 2013)



Picture 3: *Incipient brown rot* (Photo: ÖON, 2013)



Picture 4: Fruit mummies (Photo: ÖON, 2013)

Further reading

Weblinks

- Development of an environmentally friendly treatment strategy against the Black Rot (*Diplodia seriata*) in apple production (L. Brockamp, R.W.S. Weber) (DE)
- Black rot (*Diplodia seriata*) in organic apple production – infection biology and disease control strategies (L. Brockamp, R.W.S. Weber) (EN)

About this practice abstract

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