

Pear blossom blast and dieback (*Pseudomonas syringae*)

Problem

Pear blossom blast and dieback (*Pseudomonas*) is a bacterium. It can infest blossoms, shoots, and leaves (Pictures 1-4). Rain and low temperatures during bloom increase blossom infection. Especially early flowering varieties are susceptible, like Xenia (Oksana/Novemberbirne), Beurré d'Anjou, Beurré Bosc and Beurré Alexander Lucas.

Solution

To handle the bacterium, preventive measures are used in combination with direct measures.

Benefits

Less dieback of blossoms and a better yield when the bacterium is controlled.

Practical recommendation

The bacterium *Pseudomonas* is present on many plants including woody and herbaceous plants. *Pseudomonas* are epiphytic (organism that grows on the surface of a plant/tree). Epiphytic overwintering in the buds of pear is possible. If weather conditions (i.e., rainy, cold) are favourable for the bacterium, it will grow fast and cause damage. In pear, rain and low temperatures, especially frost-inducing temperatures during bloom, increase the incidence of blossom infection. Blossom petals are very susceptible.

Preventive measures

- No over-crown irrigation when not necessary,
- Over-crown irrigation only in case of frost protection, and
- Prune away infected parts.

Direct control measures

- Protect blossoms during cold weather conditions,
- Copper products, two-three sprays in spring (when allowed),
- Alternative products could be Blossom Protect (*Aureobasidium pullulans*), *Bacillus subtilis* and *B. amyloliquefaciens*. Some growers use a laminarin product.

Diagnosis of *Pseudomonas* - confusion is possible with

- Fireblight (*Erwinia amylova*): There is a difference in the conditions for infection: fireblight needs warm temperatures and *Pseudomonas* prefers rainy, cold conditions. Moreover, the first symptoms of *Pseudomonas* are small, black spots on the flower petals.
- *Alternaria* spp. (dead flower buds): Symptoms are a partial or complete necrosis of flower buds during dormancy or bud break (Pictures 5 and 6).

Applicability box

Theme

Crop production, pest and disease control, temperate fruits

Keywords

Disease control, pear

Context

Temperate Europe

Application time

Mainly during the blossom period

Period of impact

Mostly in spring

Equipment

Frost over crown irrigation, crop protection sprayer



Pictures 1-4: Symptoms of blossom blast and dieback in pear caused by *Pseudomonas syringae*. Picture 1: Kaiser, Italy. Picture 3 and 4: Xenia, The Netherlands. Picture 5: *Alternaria*: typical symptoms of dead flower buds' disease. Cross section through a healthy flower bud (left) and a diseased flower bud with complete necrosis of the apical flower, this can lead to a total decay of a dormant flower bud. Picture 6.: *Alternaria*, symptoms of affected flower buds of pear, the number of flowers per cluster may be reduced, or buds may be completely inactive. Photo 1, 2: R. Bugiani, Plant Protection Service, Bologna, Italy. Photo 3, 4: G. Brouwer, Delphy. Photo 5, 6: M. Weneker, WUR, The Netherlands.

Further information

Further reading

- Weneker, M., Pham, K.T., Woudenberg, J.H., Thomma, B.P. 2019. Identification of *Alternaria* spp. as causal agent of dead flower buds disease of pear (*Pyrus communis*) in the Netherlands and methods for disease control. <https://doi.org/10.1007/s10658-019-01827-7>

Weblinks

- Check the Organic Farm Knowledge platform for more practical recommendations.

About this practice abstract

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