

BLOSSOM WILT OF CHERRIES (*Monilia laxa*)

Glynn Percival, PhD, Plant Physiology

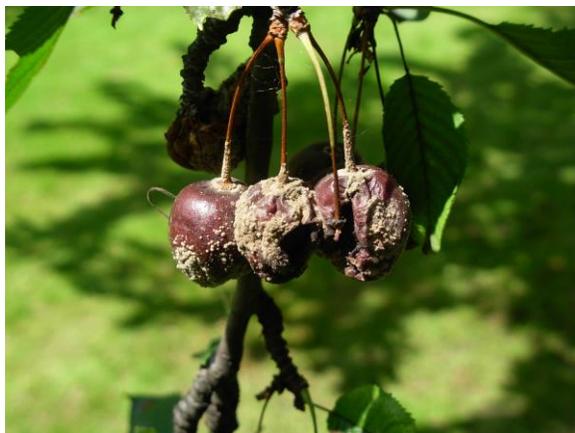
Identification, Biology & Management

Blossom wilt occurs throughout the world where stone fruits are grown and where there is adequate rainfall during the blossoming and fruit ripening period. Blossom wilt affects peaches, cherries (Figure 1), plums, apricots and almonds with equal severity. Losses result primarily by rotting of the fruit in the orchard (up to 50-75%) and during transit and marketing (rest of the crop). Yields may also be reduced by destruction of the flowers during the blossom blight stage of the disease.

Symptoms

First symptoms appear on the blossoms as brown spots on petals, stamens and pistils which spread rapidly covering the entire flower and stem. In humid weather the infected organs are covered with a greyish brown conidia which later shrivel and dry up. Gum and grey tufts of conidia may also appear on the bark surface. Twigs bearing infected flowers develop small, elliptical, sunken, brown cankers around the flower stem.

Figure 1: Symptoms of *Monilia laxa* on cherry



One large or several small rotten areas may be present on the fruit. Fruit become completely rotten and dry up before remaining on the tree or falling onto the ground. Sometimes small cankers develop on twigs or branches bearing infected fruit.

Casual Agents

In addition to *M.laxa*, two other species, *M. fructicola* and *M.fructigena* cause brown rot of fruit stones. With slight differences, the development and control of the disease caused by each species is essentially the same.

The pathogen overwinters as mycelium in mummified fruit and cankers of affected twigs or as pseudosclerotia in mummified fruit on the ground. In the spring the mycelium in mummified fruit or twig cankers produces new conidia while the pseudosclerotia in mummified fruit buried in the ground produce ascospores.

Both conidia and ascospores can cause blossom infections. The conidia are carried to the flowers by wind, rain splash or insects while ascospores are forcibly discharged and windblown onto the

flowers. Both germinate and cause infection within hours (Figure 2).

Figure 2: Blossom wilt symptoms on cherry



The susceptibility of the fruit to infection increases with maturity. Conidia usually penetrate fruit through wounds made by insects, twig punctures or hail and through stomata or the cuticle. Invasion of the fruit is rapid with fruit becoming completely rotten within a few days. Infected fruit will continue to rot after harvest and the mycelium attack healthy fruit in contact with infected ones.

Fruit symptoms appear when the fruit approaches maturity. Small circular, brown spots appear which spread rapidly in all directions. Depending on the humidity, they are sooner or later covered with ash-coloured tufts of conidia, which break through the skin which are either scattered or arranged in concentric rings on the fruit surface.

Control

Control is achieved by spraying the blossom 2-4 times with an effective fungicide from the time the blossom buds show pink until the petals fall. Several broad based, contact and systemic, fungicides applied singly and in combination are available for control.

To control rot in ripening fruit, fungicides are applied to the trees a few weeks before harvest and subsequent 7-14 day intervals until just before harvest. Because infections of immature and mature fruit originate in wounds made by insect punctures, insect control will also result in lower disease severity.

Twigs bearing infected blossoms or cankers should be pruned out.

Fertilise ideally in autumn to promote plant vitality in spring.

To prevent infections at harvest and during storage and transit, fruit should be picked and handled carefully to avoid punctures and skin abrasions. All fruit with brown rot spots should be discarded.



Established in 1994, The Bartlett Tree Research Laboratories at the University of Reading is the research wing of Bartlett Tree Experts in the UK. Scientists here develop guidelines for all of the Company's services. The Lab also houses a state-of-the-art plant diagnostic clinic and provides vital technical support to Bartlett arborists and field staff for the benefit of our clients.