Apple Canker: *Nectria galligena*

Apple canker is one of the most important diseases of apple in the UK and parts of Europe and on susceptible varieties can cause serious losses. As a result of cankers on trees fruit can rot, both in the orchard and in store.

**Disease status**

- The fungus attacks twigs and branches, causing cankers and dieback in mature trees, and often death of young trees.
- It also attacks fruit causing rots both in the orchard and in store.
- Losses due to canker are difficult to estimate, but those of 10% or more in young trees in newly planted orchards are typical and
- The fungus is not specific to apple and attacks pear and quince and several forest and hedgerow trees including beech (*Fagus*), poplar (*Populus*), hawthorn (*Crataegus*) and *Acer*.
- *N galligena* on ash (*Fraxinus*) is thought to be a separate strain *formae special*
These other susceptible species could therefore act as a source of *Nectria* inoculum. In practice only poplar has been implicated in canker outbreaks in apple orchards.

- Its prevalence as canker or fruit rot is dependent on seasonal rainfall patterns.

**Symptoms and recognition**

**Cankers**

- These initially appear as sunken areas of bark around buds, leaf scars, shoot bases or open wounds.
- As the canker develops the centre dies and bark flakes off.
- Old lesions show as flaky dark brown strips of bark surrounded by swollen wound tissue.
- Red or white fruiting bodies may be present.
- Young cankers, particularly those on young shoots, tend to have white fruiting bodies (conidial spore masses – asexual state).
- White fruiting bodies tend to be present in the summer and early autumn, whereas red fruiting bodies or perithecia (sexual state) are present in autumn, winter and spring.
- Shoot dieback due to canker is common in canker prone orchards in early summer.
- Cankers on wood may result in wilting and/or browning of leaves and blossoms on the branch above the canker, which may occur even before the branch is girdled.
Trees infected with canker show brown staining in the wood when cut which can usually be traced back to a canker.

Both the leaf symptoms and wood staining are thought to be due to the production of toxin by the *N. galligena* fungus.

Similarly, blossoms wilting as a result of *Nectria* canker located further down the branch can be confused with blossoms wilting or dying due to blossom wilt, fireblight or bud moth.

Canker control is difficult as the lifecycle and epidemiology allow the fungus to produce spores all year round and there are suitable entry points for infection on the apple tree all year round as well. Although the limiting factor is rain and wet seasons, particularly wet autumns, usually result in significant canker incidence in orchards and fruit, other factors may affect the susceptibility of the tree to canker, including variety, rootstock, soil type, soil water content, pruning and fertilizer regime.

**Control**

In problem orchards routine treatments are required every year. Effective control of canker requires an integrated approach with both cultural and chemical treatments:

- Only grow varieties resistant to canker.
- Try to grow trees in areas with good air movement.
- Use a pruning regime that maintains an open shape to the tree with good air movement.
• In winter, prune out cankers where possible or pare back cankers on scaffold branches to healthy tissue. Treat with suitable canker paint immediately after pruning.
• If possible remove prunings from orchard and burn.
• In summer prune out shoot dieback as soon as possible to reduce inoculum for fruit rot.
• On young trees ensure that wounds are painted.
• In orchards with low canker incidence at autumn leaf fall, apply a spray of a copper fungicide at 10% leaf fall and repeat at 50% leaf fall.
• Apply a pre-bud burst copper spray in the spring.
• Fungicide sprays at bud burst will help to protect bud scale scars against infection. Repeat at mouse ear.

Sources
http://apples.hdc.org.uk/apple-canker-additional%20information.asp
http://www.rhs.org.uk/advice/profile?PID=63

For further information visit www.horticulturewales.co.uk

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