2 What is brown rot?

Brown rot is a fungal disease of tree fruit, caused by the fungi *Monilinia laxa* and *M. fructigena*. The two fungi are very closely related and indistinguishable to the naked eye. *M. laxa* more commonly causes **blossom wilt** on pears and stone fruit, and a specific form, *M. laxa* f. sp. *mali* is restricted to apples. *M. fructigena* can cause brown rot in most fruit trees.

Many fruit trees and their ornamental cultivars are affected, including apples, pears, plums, cherries, nectarines, peaches, quinces and apricots.

Rotting fruit are found from mid-summer onwards.

3 Symptoms

You may see the following symptoms:

- Brown rot in the fruit, spreading out from wounds, especially those made by birds, **codling moth** and **apple scab** infection
- Infection can spread between touching fruit in a cluster
- Affected fruit either fall, or remain hanging on the tree in a mummified state
- Buff-coloured pustules of the causal fungi on the fruit surface, often in concentric rings. Usually seen under wet conditions
- At flowering time the same fungi cause **blossom wilt,** where blossoms and leaves on fruiting spurs turn brown and shrivel
- Severity varies greatly from year to year, depending on weather conditions at flowering

Non chemical control

Minimise carry-over of the pathogens by removing and disposing of all brown rotted fruit promptly. To dispose of fruit, you can bury them at least 30cm (1ft) below the soil surface, or put them in the local council green waste (although check first as some councils will not accept large volumes of rotting fruit). Do not allow rotted fruit to remain on the tree

Brown rot infects through wounds, especially those caused by birds, so if possible, net to reduce bird damage

If practical, prune out and dispose of infected spurs and blossoms to reduce the amount of fungus available to infect fruit

The plums '**Czar**', '**Jefferson',** 'Ontario' and 'President' have some resistance

Effective control depends upon an integrated approach using risk assessment, cultural and chemical control measures.

1. In winter cut out cankers and remove mummified fruit to reduceinoculum.
2. In the growing season ensure good control of scab and pests to minimise entry points for brown rot.
3. In July /August, estimate the % fruit with brown rot on about 20 trees per orchard.
4. Orchards with <1% brown rot per tree are low risk.
5. Where the incidence of orchard brown rot exceeds 1% per tree, schedule fruit for medium to short-term storage.
6. At harvest, selectively pick fruit so only sound fruit is stored. This will reduce the risk of introducing symptomless infected fruit into the bin.
7. Pre-harvest fungicide sprays with captan, Switch (cyprodinil + fludioxonil) or Bellis (pyraclostrobin + boscalid) are only partially effective as the fungus invades fruit through damage.
8. There are no fungicides approved for use in organic systems which are effective against brown rot. Cultural methods of control are the only option at present.