



FACTSHEET 5: Orchard Care in Winter

Pests and diseases have strategies to survive winter in an orchard. They live in trees and branches, on infected fruit and leaves, in debris or weeds or underground. With good orchard management and by avoiding highly toxic chemicals, winter offers the chance to significantly reduce the threat of pests and diseases. It also ensures any chemicals used during the coming season are more effective.

HOW SOME PESTS SPEND THE WINTER

Disease/Pest	Over-Wintering Strategy
Brown Rot (Blossom Rot)	Spores on mummified fruit, gum-oozing branches and diseased fruit lying beneath trees
Rust	Spores on dead, infected leaves on the ground, and in the tree framework
Stone Fruit Slab (Freckle)	Spores on twig lesions and infected leaves on the ground
Peach Leaf Curl	Spores in bud-scales and on twigs (affects mainly peaches and nectarines)
Carpophilus Beetle	Lays eggs in damaged and rotting fruit on trees, orchard floor and around packing sheds
Queensland Fruit Fly & Lesser Queensland Fruit Fly	Adults in sheltered locations, pupae in mummified fruit or ground, eggs and maggots in fallen fruit
Spider Mites	Eggs under bark or fallen leaf matter. Adult females in shelters on ground and in cracks in bark trees
Green Peach Aphids	Egg stage on the bark of fruit trees
Black Peach Aphids	Wingless form on the roots of peach and closely related trees
Light Brown Apple Moths (LBAM)	Larvae in remnants of old fruit clusters, on broadleaf weeds or neighbouring vegetation
Western Flower Thrips	Adults in weeds, grasses, alfalfa, and other hosts, either in the orchard floor or nearby

ORCHARD HYGIENE

Good hygiene management can reduce or even eliminate many winter diseases and pests in a summerfruit orchard. Removing and disposing of the following from dormant trees is a good start.



Dead Leaves



Cankers & Lesions



Bark & Infected Branches

Mummies



Fruit & Leaf Litter

You can also control winter diseases and pests by:

- using herbicides on broad-leaf weeds around trees and orchard floor
- spraying trees with dormant oils, sulphur or copper-based fungicides
- disinfecting pruning tools, especially when cutting infected materials
- burning or mulching collected plant materials like fruit, leaves, branches and prunings.

COVER CROPS

Cover crops can help with managing your orchard floor. Grasses are the most common with lots of different available mixes. Avoid using broad-leaf host plants like clover as cover crops because they can harbour pests and diseases.

You can also control winter diseases and pests by:

- better soil organic matter and soil structure
- better water infiltration
- reduced soil compaction and erosion
- firmer driving surface for machinery
- reduced broad-leaf weed populations
- fewer issues with mud and dust, which harbour mites

Cover crops support integrated pest management by providing food, shelter and habitat insects that benefit your orchard.



Dormant fruit trees (Courtesy: Dr Rebecca Darbyshire, CSIRO)

DORMANT OIL SPRAYS

Dormant oil sprays on trees in late winter cover and suffocate insects and their eggs nesting in branches and under bark. Regular winter inspections allow growers to work out the nature and extent of their pest problem and the best way to apply dormant oils.

Dormant oils significantly reduce pest numbers by targeting:

- aphids
- red spider mite
- scale insects.

TRAPPING AND MONITORING

Fruit fly

Place your traps in late winter but before leaves appear and fruit flies move in. Check and monitor your traps weekly and record how many you catch. You will need at least one trap per block or one every 300m around the orchard's border plus 2-3 on the inside. Males are attracted with a para-pheromone called "cue-lure".



Fruit fly trap (© Gov't of Western Australia)

Carpophilus beetle

Mass trapping ("Attract and Kill") involves attracting beetles into a funnel trap using a pheromone lure mixed with a synthetic blend of fruit odours that beetles find very hard to resist. The funnel traps the beetles and the insecticide strip kills them. Traps can also be used for monitoring.



Carpophilus beetle trap (Courtesy: Bugs for Bugs)

Light brown apple moths (LBAM)

Pheromone traps with a lure in delta traps and a sticky base is the best way to assess the presence and abundance of LBAMs



Trichogramma wasps parasitise caterpillar species including Light Brown Apple Moth.
(Courtesy: Bugs for Bugs)

The website www.goodbugs.org.au has information on suppliers of beneficial insects, mites or nematodes, traps, lures and monitoring services.

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