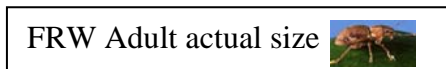
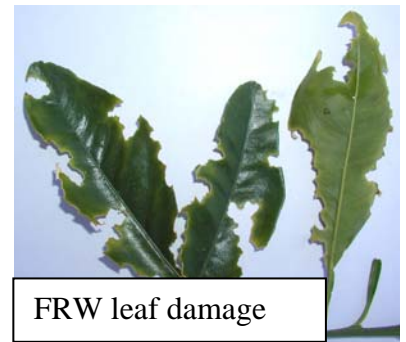


Descriptive Guide of Pest & Diseases of China Export Quarantine Concern

by Steven Falivene, Nerida Donovan & Dr Jianhua Mo (NSW DPI) & David Madge (DPI Victoria),
January 2006 (V1)

1) FRW Eggs & Adults -

FRW are about 8mm in size, it has two pale markings on the side of its body (arrowed), and a short snout. Eggs are yellow in colour and glued together in yellowish 'papery' masses of 20-30. Eggs can be laid under the calyx and in the navel end. Leaf damage is generally occurs on older leaves and on the lower parts of the canopy (skirt line). Leaf damage results in leaves with a serrated edge.



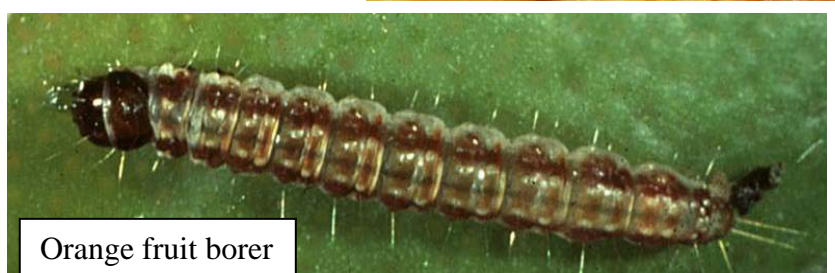
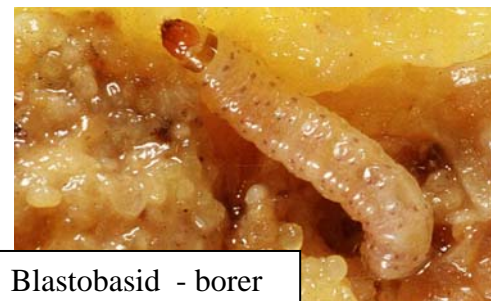
2) LBAM Eggs & larvae -

LBAM larvae can vary in size from 2-20mm. Larvae are often found in sheltered areas such as under the calyx, at the 'navel' end, or self-made web structures or rolled up leaves. LBAM larvae can also bore into fruit. Eggs are pale green to yellow in flat overlapping masses that look like fish scales. Eggs can be found on leaves, fruits and young stems.



3) Borers Eggs & Larvae -

All listed borers have similar life cycles and bore into fruit. Bore holes can be small (3mm) and can sometimes be seen as a prematurely coloured spot on green fruit. Eggs can appear as overlapping clusters. Damage can appear as signs of webbing or gouging of fruit, especially between touching fruit.



4) Diseases

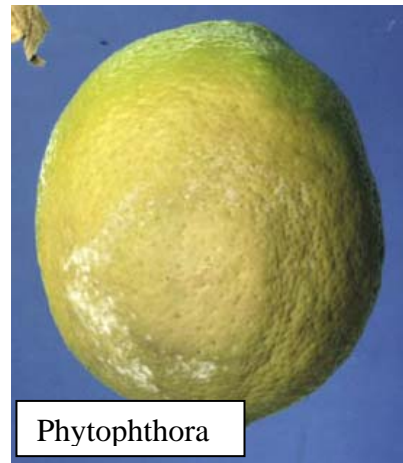
- a. **Septoria:** Fruit damage appears as small, round pits / depressions 1-2 mm in diameter that extend no deeper than the rind surface (flavedo). Pits are light tan with a narrow greenish margin, becoming reddish-brown as the fruit matures. Leaf damage appear as small raised, blister-like black spots with a yellow halo
- b. **Phytophthora:** Fruit damage first appears as a slight surface discolouration and then extends rapidly. Fruit rind turns light to olive brown. The fruit remains firm with a leathery texture, and has a distinctive smell. In damp weather, a white fungal growth often develops on the fruit surface and common blue mould may follow. leaf infections appear on the edges or leaf tips as dark brown, watery, roughly circular, spreading blotches.



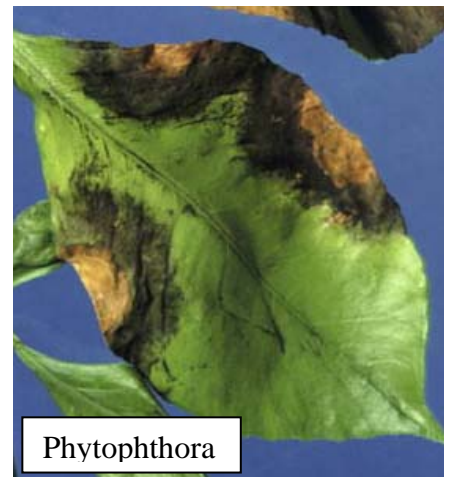
Septoria spot



Septoria



Phytophthora



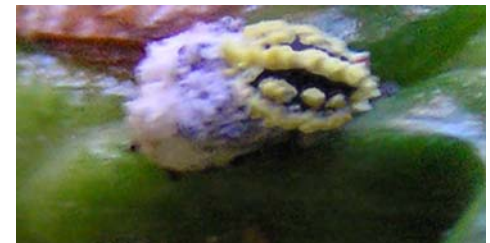
Phytophthora

Controlled Pests

- 5) **Fruit Flies:** All species of fruit fly have similar features. Larvae found in fruit up to 8mm in length. Large rounded abdomen tapering to a small back coloured head. When disturbed curl into a C shape and hop/jump.
- 6) **Golden Mealybug:** Seen on various Araucaria tree species (i.e. Hoop pine, Norfolk Island pine) in Australia. Rarely seen in citrus. Generally under leaves with white egg masses. Adults 4-5mm with distinct yellow and black colours
- 7) **Pacific Mealybug:** Very similar to Citrus mealybug. When squashed exuded yellow/clear fluid. Citrus mealy bug more common in QLD. Do not confuse with Long Tailed mealybug or Citrophilous mealybug. Citrophilous mealybug. Exude a claret
- 8) **Flat/Bunch Mite:** 0.3mm long, red, moving. Seen on fruit. Look for evidence of mite scarring.
- 9) **Long Thread Scale:** Long slender black to dark brown armoured scale to 3.5 mm long. Do not confuse with round shaped black scale.



Fruit Fly Larvae



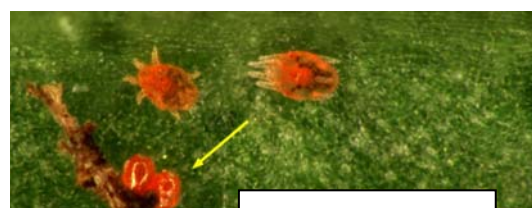
Golden mealybug adult and egg mass



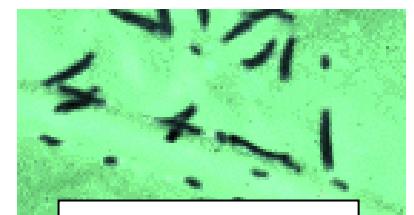
Pacific mealybug adult and egg mass



Aleurocanthus White fly: nymph (left), nymph and adults (right)



Flat/Bunch Mite



Long Thread Scale