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Identifying Mealybugs on Inland Australian Citrus

THE PROBLEM

Mealybugs are important pests of citrus in inland southeast Australia. They feed on sap and excrete honeydew, which encourages the growth of sooty mould and other fungi. Sooty mould spoils the appearance of fruit and decreases fruit quality mortality.

The detection of live mealybugs on exported citrus can be a quarantine concern for the overseas markets and may result costly delays us and fumigation treatments at the port of entry. Quarantine concerns are heightened when mealybug specimens are difficult to identify. This fact sheet is intended to assist growers, packers and quarantine staff to identify the mealybugs.



IDENTIFYING MEALYBUGS

The juvenile and female mealybugs cause economic damage to fruit by feeding and exuding honeydew. They are slow moving soft bodied insects. Adult females are 3-6 mm long and covered in a layer of white mealy wax with waxy filaments extruding from their bodies. On citrus fruit, mealybugs are most often found sheltering under the calyx of in the navel end. The presence of mealybugs is often indicated by black sooty mould which encrusts the surface of the orange especially around the calyx. Male mealybugs are small, winged insects with prominent tail filaments. They are incapable of feeding as they lack functional mouthparts.

MEALYBUG SPECIES FOUND ON INLAND AUSTRALIAN CITRUS

Three species are documented on commercial citrus in the inland Riverland, Sunraysia, Riverina (R-S R) region. They are *Pseudococcus calceolariae* (citrophilous mealybug), *P. longispinus* (longtailed mealybug) and *P. viburni* (tuber mealybug). These three species are not restricted to Australia but have a worldwide distribution on a wide range of plant hosts.

In a survey of 60 citrus orchards in the R-S-R region during 1999-00, the mealybug populations were usually dominated by either *P. longispinus* or *P. calceolariae*.

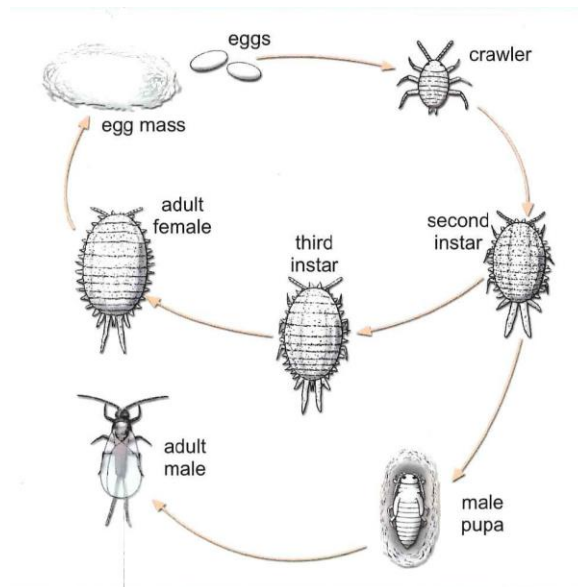
P. longispinus was found to be widely distributed throughout all three of the surveyed regions.

P. calceolariae was found only in the Riverland and Sunraysia regions, and in the latter with a limited and patchy distribution.

The location of *P. viburni* was restricted to two of the surveyed properties in the Riverland.

MEALYBUG LIFE CYCLE

Female mealybugs develop through three nymphal stages before becoming reproductive adults. They lay eggs in a waxy cocoon or, in the case of *P. longispinus*, the live young are deposited under the body of the adult female. Males develop through two additional stages (pupal) and emerge as winged adults which bear little resemblance to the juveniles. The larger adult females are very similar to juveniles in appearance.



The length of the life cycle from egg to reproductive adult differs for each species and is influenced by environmental conditions, particularly temperature.

In inland Australia, citrus mealybugs have 3-4 generations per year. On navel oranges, the peak number of individuals generally occurs during December-January as the fruit starts to grow.

LONGTAILED MEALYBUG

Pseudococcus longispinus (Targioni Tozzetti)

Australian distribution: A pest in all states and territories.

Hosts: Infests many types of plant and is often a pest in greenhouses.

Description: Distinguished by white colouration and long anal filaments which are fine and often longer than the total length of the body. Body contents are pale yellow and the body surface is thinly covered by a coating of white mealy wax.



CITROPHILOUS MEALYBUG

Pseudococcus calceolarie (Maskell)

Australian distribution: Thought to be native to eastern Australia, but found in all states and territories.

Host: Infests a wide range of hosts including various fruit trees, ornamentals, weeds and all varieties of citrus.

Description: Dark claret-coloured body covered by white mealy wax. The claret colour shows through the longitudinal folds on the dorsal surface. Anal filaments stout and approximately one-third of the total length of the body.



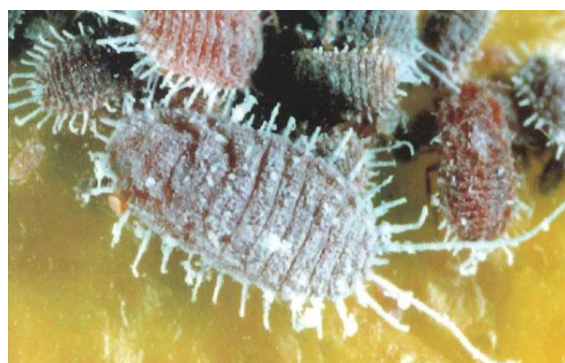
TUBER MEALYBUG

Pseudococcus viburni (Signoret)

Australian distribution: Found in all states and territories.

Hosts: Important subterranean pest of lawns, grapes and other crops in warmer regions of Australia, but occurring on all parts of a wide range of hosts

Description: The mealy wax coating is thin over the surface of the body, barely covering the body colour which is light grey. Wax filaments along the body margin are slender and become progressively longer towards the tail end of the body.



Acknowledgements: The lifecycle illustration, a modification of drawing by Susan Phillips, has been provided by the Queensland Department of Primary Industries from Citrus Pests and Their Natural Enemies: integrated pest management in Australia, 1997.

FACTSHEET

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