

POWDERY SCALE

Pseudocribrolecanium andersoni (Newst.)

1 PEST PROFILE

1.1 Distribution and status

This pest is indigenous to Africa but is only a citrus pest in subtropical production areas. It has also been found on granadilla, avocado and certain indigenous plants including figs. On citrus the pest status of *P. andersoni* has increased following the decline in organophosphate usage as a result of red scale resistance to these treatments. However, it remains only a sporadic pest.

1.2 Description

Immature females are reddish brown and darken to brown or black with age. The mature, settled female is oval, flat and about 3 mm long. It is covered with a powdery white, waxy secretion that has the appearance of flour. This secretion is found on the female and up to a 10 mm radius around it on the leaf surface. Males are unknown and therefore females reproduce parthenogenetically. Several light brown eggs are produced under the body of the female. The yellow to orange crawlers are about 0.5 mm long and are the only mobile stage. They leave the protection of the female and settle on leaves.

1.3 Infestation sites on tree

Powdery scale infests the upper and lower surfaces of leaves on both non-bearing and bearing trees.

1.4 Damage

1.4.1 Symptoms

The white powdery patches on and around the adult female scales are the most noticeable primary initial symptom of infestation. The patches are particularly noticeable on the upper surface of the leaf and can be seen from a distance. When several females are present the powdery areas can coalesce so that large areas of the leaf surface have a white appearance.

The feeding activity of the powdery scale is apparently not responsible for direct damage to

the tree or crop. However, copious amounts of honeydew are secreted which can result in heavy sooty mould deposits. The waxy secretions and thick deposits of sooty mould provide shelter for red scale and mealybug which are often found in association with powdery scale infestations. The mealybug presence and honeydew further enhances sooty mould growth. This together with other debris resulting from mealybug presence readily results in the formation of dense, woolly and sticky residues on foliage, in addition to sooty mould. Refer to the section on SOFT SCALES for more information on the hazards resulting from honeydew and sooty mould presence.

1.4.2 Seasonal occurrence

Powdery scale populations increase rapidly during summer months and can result in heavily infested trees by autumn. Population increase declines during winter.

2 MANAGEMENT ASPECTS

2.1 Infestation/Damage assessment

2.1.1 Inspection

The foliage of trees that have shown signs of powdery scale presence the previous season must be inspected at weekly intervals commencing in spring.

2.1.2 Treatment threshold

There is no fixed infestation threshold to indicate when a treatment needs to be applied against this pest. Regular inspections will reveal the prevailing status of infestations and whether treatment is desirable. It is important to prevent the development of sooty mould on a new crop, particularly cultivars, such as soft citrus, which cannot be cleaned by descalers in the packhouse.

2.2 Control options

2.2.1 Biological

The Aphelinid parasitoids *Coccophagus pulvinariae* Compere and *Euxanthellus philippiae* Silvestiri, as well as the two encyrtids *Neastymachus dispar* Prinsloo and a *Metaphycus* species, attack powdery scale. In

addition, lacewing larvae have been observed feeding on the scale. However, these natural enemies often do not achieve commercial control of infestations. In some cases this can be attributed to the detrimental effect of long-residual thrips control treatments.

2.2.2 Cultural

There are no cultural options that can contribute to the control of this pest. However, ant control is essential when powdery scale is present. This in turn will require skirting of tree canopies and weed control when trunk barriers are used against ants.

2.2.3 Plant protection products

There are no treatments specifically registered for the control of powdery scale as it is only a sporadic pest. However, methomyl 90%SP, profenofos and methidathion, which are registered for use against mealybug, will provide good control of powdery scale at the same time. A mineral oil spray after harvest, just before emergence of the spring flush will control scale as well as helping to loosen any thick deposits of sooty mould that may be present on infested trees.