

## FLAT MITES

*Brevipalpus californicus* (Banks)  
*Brevipalpus phoenicis* (Geijskes)

### 1 PEST PROFILE

#### 1.1 Distribution and status

All citrus cultivars in the production areas of southern Africa are susceptible to attack by flat mites. The citrus flat mite, *Brevipalpus californicus*, is the most widespread species. The reddish-black flat mite, *B. phoenicis*, is much less common and usually occurs in the Lowveld. Both mites have a range of alternative hosts. In general flat mite infestations seem to occur most regularly in Mpumalanga, Swaziland and KwaZulu-Natal.

#### 1.2 Description

Adult mites are pear shaped, flat and dark red to brown in colour. They are very small and just visible with the naked eye. Eggs are laid on the fruit surface and fruit stalks. They are oval with a light red colour. Nymphs have the same general shape as the adults, but are much smaller and bright red.

#### 1.3 Infestation sites on tree

Flat mites infest leaves, green twigs and fruit of citrus trees where their feeding activities cause damage to surface tissues.

#### 1.4 Damage

##### 1.4.1 Symptoms

Damage to foliage is usually slight and not readily noted. On fruit the damage caused by mite feeding results in numerous small dark spots on the rind which have a diameter of less than a millimetre. Heavy mite infestation can result in the formation of larger patches of damaged tissue. The damage symptoms are subject to strict grading regulations and can readily lead to significant culling in the packhouse. The mites also feed on the edges of thrips, wind and other scars, causing them to darken and become more noticeable. In the subtropical production regions the mites often feed under dead red scale on fruit. When these scales are subsequently removed during

packhouse treatment the mite damage becomes noticeable.

##### 1.4.2 Seasonal occurrence

Flat mite infestations on new fruit usually commence during the period that stretches from soon after petal fall to autumn. After harvest the mites survive on foliage or out of season fruit from where fruit infestations commence again the following season.

### 2 MANAGEMENT ASPECTS

#### 2.1 Infestation/damage assessment

##### 2.1.1 Inspection

Commencing two weeks after petal fall, fruit and fruit stalks should be examined at fortnightly intervals with a hand lens able to magnify at least 10X. Fully expanded leaves can be included in the inspection programme to clarify the prospect of mite movement to new fruit.

##### 2.1.2 Treatment threshold

A treatment should be applied when an average of one mite is noted per fruit or stalk.

#### 2.2 Control options

##### 2.2.1 Biological

Predatory mites of the genus *Euseius* feed on flat mites but usually do not make a control contribution of commercial significance. Other less common predatory mites probably also feed on them. No insect natural enemies are known to parasitize or feed on flat mites.

##### 2.2.2 Cultural

There are no cultural options that contribute to flat mite control.

##### 2.2.3 Plant protection products

Populations of flat mites are presently being suppressed by abamectin plus oil sprays for citrus thrips, so the pest status is unnaturally low. One of the following acaricides can be applied as a medium cover film spray when flat mites are noted:

<b>Product</b>	<b>Dosage/100 ℓ water</b>
Envidor	10 ml
Torque	20 ml
Kelthane	200 g
Smite	30 ml
Lime sulphur <sup>1</sup>	1.25 ℓ
Sulphur <sup>1</sup>	150 g

<sup>1</sup> May not be used on young fruitlets or within six weeks of an oil-containing spray. Do not apply to heat- or water-stressed trees or when high temperatures are expected.