

## SILVER MITE

*Polyphagotarsonemus latus* (Banks)

### 1 PEST PROFILE

#### 1.1 Distribution and status

Silver mite is primarily a sporadic pest of lemon and lime fruit. Occasionally, high populations of silver mite may move from lemon orchards to adjacent Valencia orchards and cause some damage. In the nursery it damages foliage on a number of different cultivars. It occurs mainly in subtropical production areas but has also caused damage in temperate regions of the Eastern Cape. Outbreaks of this pest often occur as a repercussion after cypermethrin sprays. Internationally, silver mite is also known as broad mite.

#### 1.2 Description

The silver mite is microscopic in size and with the naked eye only heavy populations can be seen. These give the fruit surface a powdery appearance. Individual adult mites are straw-coloured and translucent. The general appearance is spider-like and somewhat similar to that of the red mite, but smaller. Females are about 0.2 mm long, pale in colour and have a characteristic white stripe along the upper surface of the body. Males are about half the size of females. Silver mite eggs are translucent white, oval and with many small protuberances arranged in rows. The immature phase comprises a larval and quiescent nymphal stage. During summer, the development time of a generation is about seven days.

#### 1.3 Infestation sites on tree

Silver mite feeds only on young, succulent foliage and fruit with a diameter less than that of a golf ball. Fruit inside the canopy, or the shady side of fruit, are preferred. This helps in distinguishing damage from that caused by thrips which prefer outside fruit in the sunshine.

### 1.4 Damage

#### 1.4.1 Symptoms

##### 1.4.1.1 Leaves

With heavy infestations leaves can become curled, thickened and malformed and may fall off. This type of damage occurs most frequently in the nursery. It is very unusual in orchards.

##### 1.4.1.2 Fruit

Damage of economic importance is usually restricted to fruit with a diameter of less than 40 mm. Mite feeding damages the external cell layer of fruitlets which results in the fruit having a silver, sharkskin appearance. This is the source of the mite's popular name. Silver mite prefers to feed in the shade so damage is more common on fruit inside the canopy or on the inward-facing side of fruit. This helps in distinguishing silver mite damage from thrips damage, which is more common on fruit exposed to the sun. As a result of the short developmental period, silver mite populations can increase rapidly and severe damage to fruit can be caused in a short period.

#### 1.4.2 Seasonal occurrence

The most serious silver mite infestations usually occur on lemons set during December and January. The mites are sensitive to both orchard and climatic conditions. As a result, infestations are variable and differ from season to season and orchard to orchard.

## 2 MANAGEMENT ASPECTS

### 2.1 Infestation/damage assessment

#### 2.1.1 Inspection

Weekly inspections of fruitlets must commence after petal fall and continue until fruit are the size of golf balls. The inspections must be conducted with a 10X hand lens. If a stereomicroscope is available, fruit samples can be carefully collected for microscopic examination.

### 2.1.2 Treatment threshold

Due to the speed with which silver mite populations can increase, the presence of mites on even isolated fruitlets in an orchard can be regarded as a threat that warrants treatment.

## 2.2 Control options

### 2.2.1 Biological

Some predatory mites are known to prey on silver mite but this has not been confirmed in southern Africa. Problems with silver mites often occur after the use of cypermethrin which may indicate that a natural enemy is being eliminated. Apart from this, biological control is not a practical consideration once a silver mite problem has been observed because of the speed with which populations can increase and cause damage to fruit.

### 2.2.2 Cultural

Blackjacks (*Bidens pilosa* L.) are also a host plant for silver mite. It is advisable to thoroughly control this weed in lemon orchards to eliminate a potential source of infestation.

### 2.2.3 Plant protection products

One of the following materials can be applied as a medium cover, film spray:

Product	Dosage/100 ℓ water
Sulphur <sup>1</sup> WG or WP	250 g
Dithane M45	200 g

<sup>1</sup> A six week safety period must be allowed between this treatment and any oil-containing treatment.

Abamectin at 20 ml/hl plus oil and Dicarzol bait, both used for thrips control, will also suppress silver mite.