

CITRUS GREY MITE

Calacarus citrifolii Keifer

1 PEST PROFILE

1.1 Distribution and status

Grey mite has been recorded in all citrus production areas, but infestations of economic importance are usually restricted to altitudes above 1000 m, with the exception of the lower Orange River region. Western Mpumalanga, the south-western part of Limpopo Province, North-West Province and central Zimbabwe are the areas where it is most likely to be prevalent. *Minneola tangelo* appears to be relatively resistant to this pest whereas Lane Late navels are extremely susceptible. Apart from citrus the mite has been recorded on alternative host plants from 15 different plant families and these include granadilla, Poinsettia, bananas, papaya and arum lilies.

1.2 Description

The adult female mite has a purple colour. It is about 0.15 mm long and can only be seen with strong magnification. The body is banana shaped with three waxy white stripes along its length. There are two appendages at the rear end of the body which enable the mite to grip the plant surface on which it feeds. Males do not occur and the females reproduce parthenogenically. The females live for about 10 days and during that time can produce up to 30 eggs. The eggs are hemispherical and have an incubation period of four to six days. There are two nymphal stages.

1.3 Infestation sites on tree

The mites favour young, actively growing citrus tissue and will infest foliage, shoots and fruit that conform to this criterion.

1.4 Damage

1.4.1 Symptoms

1.4.1.1 Leaves

Damage is caused by the feeding activity of the grey mite and may take 2-3 weeks to appear. On foliage this usually results in the formation of yellow blotches of variable size. A typical

characteristic of the larger foliage blotches is the presence of fine concentric rings of discoloured tissue within the damaged area. This is the source of the popular term "concentric ring blotch" used to describe the foliage symptoms. Single blotches on leaves can have a diameter in excess of 35 mm but may start as yellow spots of 1-2 mm diameter. The yellow discolouration within the blotched area is often visible on both sides of the leaf. The blotch symptoms may vary in different cultivars and severely damaged leaves may fall off.

Occasionally necrotic spot symptoms may appear on leaves and fruit. It is not known why this symptom sometimes occurs when other years the same orchard may have concentric ring blotch symptoms. It may be associated with water stress. The spot is dark brown and is surrounded by a halo of chlorotic tissue. On leaves the spot is flat and there is no raised surface on the opposite side of the leaf.

1.4.1.2 Succulent shoots

Mites feeding on succulent shoots can result in the exudation of gum and eventual splitting of the shoot tissue. Heavy infestations in this area can lead to leaf drop and die-back of twigs.

1.4.1.3 Fruit

Fruit infestations and damage usually coincide with those on foliage. Fruit damage can vary in appearance and ranges from necrotic blotches with a concentric or circular appearance to variably circular areas with a cracked scab-like texture. Necrotic spot symptoms on fruit start as small, reddish-brown spots and develop into sunken, dark brown lesions. Symptoms are more severe on fruit exposed to the sun. Fruit drop may occur with both types of symptoms.

1.4.2 Seasonal occurrence

Grey mite can infest young succulent growth during any time of the year.

2 MANAGEMENT ASPECTS

2.1 Infestation/damage assessment

2.1.1 Inspection

In areas where grey mite occurs, trees of all ages must be inspected once a week during periods of active growth. Inspection must include fully-expanded young leaves, shoots and fruit.

Due to the difficulty in conducting trials with grey mite, few acaricides have been registered. However, trials by CRI have shown that Envidor at 15 ml/hl, Mitigate at 150 ml/hl and Torque at 20 ml/hl, will also control grey mite, as does Agrimec at 15 ml/hl plus oil and mancozeb at 200 g/hl.

2.1.2 Treatment threshold

There are no defined infestation thresholds on which to base the application of treatments. Treatment must be applied when a significant mite increase is noted or at the first signs of damage symptoms. A washing technique using a solution of bleach and soap was developed by Grout and Stephen to monitor these mites but it requires the use of a microscope.

2.2 Control options

2.2.1 Biological

Predatory phytoseiid mites and tydeid mites are associated with grey mite but they do not seem to be able to control the pest.

2.2.2 Cultural

There are no cultural options that can be used to limit grey mite infestations. Although observations indicate that citrus closest to indigenous bush is more likely to be infested.

2.2.3 Plant protection products

The following acaricides are registered as light cover film sprays for the control of grey mite:

Product	Dosage/100 ℓ water
Sulphur ¹ WG or WP	200 g
Lime sulphur ¹	1.25 ℓ
Kelthane	200 g

¹ Do not apply within six weeks of an oil-containing spray. Do not apply to heat- or water-stressed trees.