

Coconut bug on Avocados (*Pseudotheraptus wayi* Brown)



Introduction

The coconut bug is an indigenous polyphagous pest that infests several commercial subtropical hosts and is present in the eastern parts of the Mpumalanga and Limpopo Provinces as well as the Stanger area in KwaZulu Natal Province in South Africa. Commercially important plant hosts infested include avocado, mango, litchi, citrus, macadamia, guava, pecan, coconut, cashew, cinnamon, cacao, and various leguminous crops. The pest can complete its life-cycle in 31-48 days, depending on temperature. Multiple generations (9 or more) can occur (Van den Berg *et al.*, 2001).

Life-cycle



Source: Egonyu *et al.*, 2013



Source: Egonyu *et al.*, 2013



Source: Joubert, 2011

Individual eggs randomly laid around fruit, twigs, and blossom stems, creamy white to light brown becoming a darker reddish-brown prior to hatching, oval, 1.5 mm long, lasts 7 days (Van den Berg *et al.*, 2001).

Five nymphal stages, each morphologically similar. Nymphs are light brown with long and thick antennae, 5 mm long, 1.5 mm wide (Van den Berg *et al.*, 2001).

Adults red-brown on the back and lighter on the underside, wing tips darker, reddish eyes, 15 mm long, 4 mm wide, males slightly smaller than females, strong fliers (Van den Berg *et al.*, 2001).

Damage

Mature fruit: feeding by nymphs and adults of the sap results in lesions darker than the surrounding peel and resembling a bruise. While ageing, lesions become indented like hail marks and darken to black. Lesions may also become tumescent and wart-like.

Immature fruit: feeding results in a malformed, asymmetrical fruitlet. Beneath a lesion is a brown stain. A hard clot develops that is easily removed when peeling.

Multiple lesions can occur on a fruit (Van den Berg *et al.*, 2001).



Source: De Villiers & van den Berg, 1987



Source: Joubert, 2011

Scouting

Scout for insects or damage (threshold of 13 individuals/block in an on-year, 7 individuals/block in an off-year).



Control

Biological: One insecticide: *Beauveria bassiana* (trade name Eco-Bb).

Two egg wasp parasitoids; *Anastatus* sp. and *Trissolcus* sp.

Trissolcus basal is commercially available but is not registered for use on avocados.

Orchard practices: Canopy management and pruning to increase light penetration. Both practices will ensure chemicals have greater access to target the pest (Schoeman, 2017).

Chemical: Five pesticides: Acephate (trade names Ace 750 SP, and Acephate 750 SP), Beta-cyfluthrin (trade name Bulldock Beta 125 SC), Bifenthrin (trade names Ramba 100 EC, and Tempes 100 EC), Pymetrozine (trade names Chess, and Trivia 500 WDG), and Spirotetramat (Tivoli 240 SC).

- There is resistance in the EU market to Acephate, as the chemical is metabolized by insects into Methamidophos (classified by the World Health Organisation as Toxicity Class 1b, Highly Hazardous) and is a hard chemical i.e. also kills predatory insects.
- Beta-cyfluthrin should only be sprayed during flowering and up to fruit set and is not intended to be sprayed on fruit.

Suggested control programme: Pymetrozine (Pre-Harvest Interval (PHI): 21 days) → Acephate (PHI: 35 days) → Bifenthrin (PHI: 28 days) → Spirotetramat (PHI: 14 days)

References

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