

FRUIT SUCKING BUGS

-Derek Donkin

*This is an updated version of the article
that appeared in the June 1999 issue of 'Avoinfo'.*

Introduction

Two broad groups of sucking bugs are known to cause damage to fruits in avocado orchards, viz. Sucking bugs and stinkbugs. The fruit sucking bug complex is made up of at least seven species, which appear in four Hemiptera families. Four stinkbug species (Pentatomidae) are known to cause fruit malformation, of which the brown stinkbug (*Coenomorpha nervosa*) is the dominant species. The coconut bug (*Psuedotheraptus wayii*) causes premature fruit drop and large necrotic lesions. The citrus leaf hopper (*Penthimiola bella*) and the avocado bug (*Taylorilygus* sp) both cause protrusions on the fruit skin known in the industry as >Vosknoppe=.

Problem bugs are:

- Avo bug
- Citrus leaf hopper
- Green vegetable stinkbug (*Nezara viridula*)
- Brown stinkbug (*Coenomorpha nervosa*)
- Powdery stinkbug

Areas where sucking bugs are a problem

In decreasing order of severity: Kiepersol, Levubu, Tzaneen, Natal. Hass is the most susceptible to bug damage. The bug moves from Fuerte to Hass as the Hass starts flowering.

When does damage occur?

Damage occurs during flowering and fruit set. During feeding, white exudate can be seen on the fruit. The symptoms e.g. >Vosknoppe= are usually only visible one month after the bug has fed on the fruit.

Avocado bug population peaks at full flower

On Hass, the population remains high for a longer period after flowering than on Fuerte. This possibly explains the greater degree of damage experienced on Hass.

Which orchards are likely to have highest levels of infestation?

Avocado bug is most problematic in Pinkerton and Hass orchards. Fuerte fruit is far less susceptible to attack. Dense orchards (especially Hass) are likely to have higher levels of infestation because of the lack of alternative hosts in the orchard.

Damage caused by sucking bugs and stinkbugs

The avocado bug and leaf hopper have very short mouthparts and can only feed on the developing seed of very small fruit. If the developing seed is damaged in this way, the fruit will drop. Stinkbugs have much longer mouthparts than sucking bugs and are able to penetrate the seed of much larger fruit.

Stage at which fruits are most susceptible

Danger period: Fruit diameter less than 30 mm.

Safe period: Fruit diameter greater than 30 mm

Monitoring

Weekly or fortnightly blossom surveys to determine levels. Monitor 10 inflorescences on each of ten trees per block to calculate percentage infestation.

Economic threshold: 'On' year: 20% flower infestation (correlated to a 5% packhouse cull)

'Off' year: 10% flower infestation (correlated to a 3% packhouse cull)

Control measures

Orchard sanitation

Open up dense orchards to allow for better light penetration.

Allow weeds to grow in orchards. Flowers of weeds are often more attractive to sucking bugs, thus reducing the level of infestation on the avocado inflorescence.

Chemical control

NB DO NOT USE INSECTICIDES AS A MATTER OF COURSE! THE DECISION TO SPRAY MUST BE BASED ON SCOUTING RECORDS AND CULL FACTORS FROM PREVIOUS SEASONS. INSECTICIDES SPRAYED WHEN THEY ARE NOT NECESSARY, OR AT THE WRONG TIME, ARE A WASTE OF MONEY AND CAN RESULT IN INCREASED POPULATIONS OF OTHER INSECT PESTS. Avocado orchards are relatively free of insect pests at present. Let's keep it that way.

Spray a single Bulldock (Beta Cyfluthrin) spray (15 ml / 100 L) if infestation exceeds 5%. This should give 5-6 weeks= protection.

Timing of spray is very important. Sucking bugs are present whilst there are still flowers on the tree (nymph stage feeds on the flower). Damage only occurs when fruits are less than 30 mm in diameter.

Spray when you have 80% fruit set on the Southern side of the tree (i.e. only 20% of flowers left on Southern side). Monitor for this point daily.

Bulldock was only registered by Bayer as described above because residues of Beta Cyfluthrin were not detected on the fruit at harvest. If residues of this chemical had been found at harvest, Bayer would not have registered it for use on avocado trees.

Ecological impact of Bulldock sprays

It appears that the ecological impact of Bulldock is low, but only if sprays are done during flowering. After 6 seasons of spraying Bulldock in some areas, there are no repercussions with mealybug etc. If you spray Bulldock in November, you will have problems with mealybug and scale in the following season, because natural enemies of these pests are at their peak at this time. (Predator populations peak just after their prey's population peaks.)