

Studies on Hemiptera

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UITTREKSEL

Die verlies van avokadovrugte as gevolg van stinkbesies in die Nelspruit/Hazyview omgewings is bereken as R1,37 miljoen vir die jaar 1991.

Tydens die huidige werk is daar meer as 20 Hemipteras pesies op avokadobome versamel. Hiervan was die belangrikste spesies die wollen ge stinkbesie, *Atelocera raptaria* Germar (Pentatomidae), en die kokosneutstinkbesie, *Pseudolheraptus wayi* Brown (Coreidae), Meer Hemiptera het voorgekom op Hass as op Fuerte bome. Aangesien groot hoeveelhede Hemiptera op avokadobome gedurende die winter voorkom, is cherniese beheer moontlik nodig voordat die bome blom. Met verdere studies sal meer aandag aan hierdie aspek gegee word,

ABSTRACT

The loss of avocado fruit as a result of stinkbugs was calculated for the 1991 season to be R1,37 million for the Nelspruit/Hazyview area.

During the present work, more than 20 Hemiptera species (sucking bugs) were found on avocado trees. The woolly stinkbug, *Atelocera raptoria* Germar (Pentatomidae), and the coconut stinkbug, *Pseudotheraptus wayi* Brown (Coreidae) are amongst the most important. More Hemiptera occurred on Hass than on Fuerte trees. Since large numbers of Hemiptera occur on avocado trees during winter, chemical control may be necessary before flowering takes place. With further studies greater emphasis will be placed on this aspect.

INTRODUCTION

Various species of Hemiptera (sucking bugs) damage avocado fruit, leaves and branches resulting in the degradation of fruit and in a reduction of growth of the trees. The loss of avocado fruit as a result of stinkbugs was calculated to be R1,37 million per year for the Nelspruit/Hazyview area (Erichsen & Schoeman, 1992).

Despite the enormous loss caused by Hemiptera the relationship of injury to the different species has not yet been determined. Furthermore, threshold levels where intervention is necessary and the life cycle of species in relation to the avocado growth cycle and damage have not yet been determined. The aim of this study is to address these unanswered questions.

MATERIALS AND METHODS

Monitoring of stinkbugs

The following was carried out fortnightly in two Hass orchards and two Fuerte orchards from July 1997. One Hass and one Fuerte orchard is in the Nelspruit and the others in the Brondal area.

Sheets were placed underneath 10 trees per orchard. The trees were then sprayed with dichlorvos and an hour later all Hemiptera on the sheets were collected. The numbers of each species were recorded.

Lesion causing pests

Nymphs and adults of the most important Hemiptera will be placed in gauze cages around developing avocado trees. The development of lesions will be noted.

Survey of lesions on fruit

Avocado fruit will be inspected in the above mentioned four orchards and also in a number of others.

Release of stinkbug parasitoid

The stinkbug parasitoid, *Trichopoda giacomellii* is being released near avocado orchards for the possible control of certain stinkbug species.

RESULTS AND DISCUSSION

Monitoring of stinkbugs

More than 20 Hemiptera species have been found to be present in avocado trees. Of the 602 Hemiptera, the woolly stinkbug, *Atelocera raptoria* Germar (Pentatomidae), represents the most namely 42.0% with *Decipha viridis* (Synave) (Flatidae) 23.3%; *Parapioxys* sp. (Cercopidae) 9.6%; the coconut stinkbug, *Pseudotheraptus wayi* Brown (Coreidae) 7.6% and *Dysdercus nigrofasciatus* Stal (Pyrrhocoridae) 3.0% (table 1). Many of the species mentioned have also been recorded earlier (*vide* Joubert & Claassens, 1994; Bruwer, 1997).

Table 1: The 20 most important species of Hemiptera after spraying avocado trees (July 1997 - January 1998)

Species	Family	%
<i>Artelocera raptoria</i> Germar	Pentatomidae	42.0
<i>Decipha viridis</i> (Synave)	Flatidae	23.3
? <i>Parapioxys</i> sp.	Eurybrachidae	9.6
<i>Pseudothoraptus wayi</i> Brown	Coreidae	7.6
<i>Dysdercus nigrofasciatus</i> Stal	Pyrrhocoridae	3.0
<i>Poophilus</i> sp.	Cercopidae	1.9
<i>Leptoglossus australis</i> (F.)	Coreidae	1.8
Unidentified species	Acaraloniidae	1.7
<i>Stenocoris maculosa</i> (Blötte)	Alydidae	1.3
<i>Nezara prunasis</i> Dallas	Pentatomidae	1.3
<i>Penthimia</i> sp.	Cicadellidae	0.8
? <i>Pendulinus</i> sp.	Coreidae	0.8
<i>Loeris transversa</i> Thunberg	Cercopidae	0.7
<i>Nezara</i> sp.	Pentatomidae	0.7
<i>Nezara pallidoconspersa</i> Stal	Pentatomidae	0.5
<i>Nezara viridula</i> (L.)	Pentatomidae	0.3
<i>Bathycoelia natalicola</i> Distant	Pentatomidae	0.3
<i>Bathycoelia rodhaini</i> Schouteden	Pentatomidae	0.3
<i>Anoplocnemis curvipes</i> F.	Coreidae	0.2
<i>Solenostethium liligerum</i> (Thunberg)	Scutelleridae	0.2

More Hemiptera were collected from Hass (369) than from Fuerte trees (233) (figure 1). It has also been shown that large numbers of the Hemiptera overwinter in avocado trees. This suggests that chemical control should be applied before flowering takes place. Greater emphasis will be placed on this aspect in further studies.

Lesion causing pests

This work will commence early in the next season.

Surveys of lesions on fruit

Surveys of lesions on fruit will commence as soon as picking takes place. This will be repeated the following year.

Release of stinkbug parasitoids

Since July 1997 a total of 236 adult *T. giacomellii* and 123 parasitized stinkbugs have been released near avocado trees to try and establish the parasitoid. This work will continue.

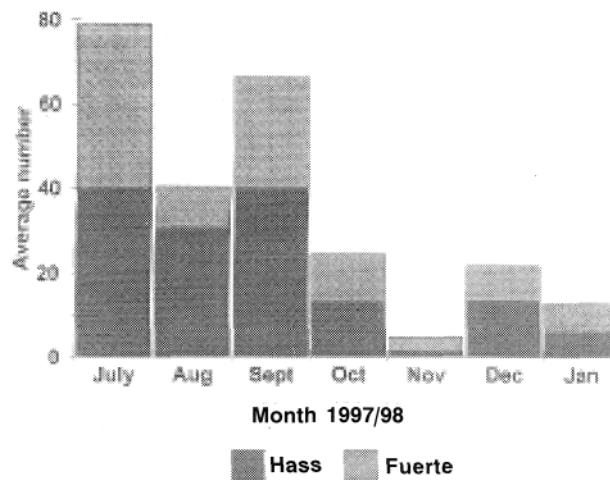


Figure 1 - Average number of Hemiptera per spray application per month on 10 avocado trees

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