

**THE STATUS OF GREENHOUSE THRIPS, *HELIOTHRIPS HAEMORRHOIDALIS*, AND RED-BANDED THRIPS, *SELONOTHRIPS RUBROCINCTUS* (THRIPIDAE), ON AVOCADO FRUITS IN THE HAZYVIEW REGION OF THE EASTERN TRANSVAAL**

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*Heliothrips haemorrhoidalis* (Bouché) and *Selenothrips rubrocinctus* (Giard) (Thripidae) feed on the pericarp of avocados, superficially damaging the tissues and extracting chlorophyll with their piercing-sucking mouthparts (Annecke & Moran, 1982). Feeding causes bronzing of the fruit surface but heavy infestations can cause the pericarp to crack (Annecke & Moran, 1982, De Villiers & Van den Berg, 1987). Fruits damaged by these species are unsuitable for export (De Villiers, 1990, De Villiers & Van den Berg, 1987). Avocado fruits which develop from fertilized flowers on the same inflorescence often touch and, at low thrips populations, most of the thrips (c. 93%) occur between touching developing fruits (Dennill & Erasmus, 1992). Although Annecke and Moran (1982) did not regard these thrips species as important enough to warrant chemical control measures, outbreaks of these species during 1989 resulted in the culling of up to 80% of the fruits from some orchards in the Hazyview area (W. Vos & B.J. Durand, personal communication).

The aims of the present study were to:

1. monitor seasonal population fluctuations by using the monitoring technique developed by Dennill & Erasmus (1992) and,
2. determine the spatial distribution of the thrips damage within the study site and within the trees (some insects, e.g. citrus thrips *Scirtothrips aurantii* Faure (Thripidae), are more damaging on the warmer northern aspects of their host plants at higher southern African latitudes (Grout & Richards, 1990)),
3. to determine the geographical distribution of the two thrips species and,
4. Determine the attractiveness of sticky traps of various colours to the two thrips species when they peaked in abundance (citrus thrips, *S. aurantii* Faure are attracted to yellow cards (Grout & Richards, 1990, Samways, 1986, Samways *et al.*, 1986)).

Each month, from January to June 1992, 50 Hass trees were randomly selected within a study orchard on East Farm (25° 05'S, 30° 59'E) and in an orchard on the farm Lulu (25° 5'S, 30° 59'E). Both farms are located in the Hazyview region of the eastern Transvaal and Lulu was one of the farms on which thrips had caused an 80% cull in 1989. Each tree was divided into 4 aspects (North, South, East & West). On each aspect of each tree one pair of touching fruits and one single fruit were examined for the presence and damage caused by the two thrips species. A total of 200 pairs and 200

single avocado fruits were thus examined on each occasion. Thrips found on or between the fruits were identified, counted and the damage they had caused was ranked from 1-10 according to the percentage of the fruit surface damaged (1, 1-10% fruit surface damaged, 2, 11-20% fruit surface damaged etc.). The number of thrips found on avocado fruits during the study period was very low: maxima of 26 and 2 individuals were found in January on East farm and on the farm Lulu in May respectively (Table 1). The maximum score for damage was 1, and was found on only three fruits. Due to the low numbers of thrips encountered during the entire study (n=59), neither the spatial distribution of damage within the study sites and within trees, nor the attractiveness of the thrips to sticky traps of various colours could be determined. In addition, low numbers also prohibited determining their geographical distribution.

**TABLE 1** The total number of *Heliothrips haemorrhoidalis* and *Selenothrips rubrocinctus* and the number of both species per trap (single or touching fruits) found in two locations in the Hazyview region of the eastern Transvaal during 1992.

Month	East Farm		Vos (Lulu)	
	Total no Thrips	Thrips/trap	Total no. Thrips	Thrips/trap
Jan	26	0.06	0	0.00
Feb	6	0.02	1	0.01
Mar	0	0.00	0	0.00
Apr	8	0.04	0	0.00
May	8	0.02	2	0.00
Jun	8	0.04	0	0.00

While *H. haemorrhoidalis* and *S. rubrocinctus* had a high pest status in the eastern Transvaal during 1989, surveys to assess the relative importance of various insects attacking avocados in the Hazyview area during 1990 and 1991 showed that both thrips together were second and fourth most important but damaged only 2% and 1.5% of the fruits respectively (Dennill & Erasmus, 1992, Erichsen, 1992). It has been suggested that because the avocado industry is relatively young (Durand, 1990) and rapidly expanding (Kotzé, 1990) it is, in this early stage, recruiting polyphagous, mobile pests (Dennill & Erasmus, 1992, Dennill & Moran, 1990). Both *H. haemorrhoidalis* and *S. rubrocinctus* are polyphagous (Annecke & Moran, 1982) and highly mobile species, features which support this theory but complicate studying them and predicting their importance. From 1990 to 1992, however, these two thrips species were of minimal economic importance to the avocado industry.

## ACKNOWLEDGEMENT

I thank Mr Willem Vos and Mr Chukini for allowing me free access to their orchards and Dr. G.B. Dennill for comments on the manuscript.

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