

## HOST RANGE STUDIES ON AVOCADO SUNBLOTCH

**JV DA GRACA**

DEPT. OF MICROBIOLOGY AND PLANT PATHOLOGY, UNIVERSITY OF NATAL,  
PIETERMARITZBURG

**SP VAN VUUREN**

CSFRI, NELSPRUIT

### OPSOMMING

Die suksesvolle oordraging van avokadosonvleksierte aan *Persea Schiedeana*, *Ocotea bullata* en *Cinnamomun camphora* word gerapporteer.

### SUMMARY

The successful transmission of avocado sunblotch disease to *Persea Schiedeana*, *Ocotea bullata* and *Cinnamomum camphora* is reported.

### INTRODUCTION

Until recently no hosts of sunblotch other than the avocado (*Persea americana*) were reported, although attempts to transmit the disease to other plant species, especially herbaceous, have been made (Alper *et al.*, 1978). It seemed probable that the most likely additional hosts would be found amongst plants closely related to the avocado i.e. the family Lauraceae. The first member of the family to be tested was the cinnamon (*Cinnamomun zeylanicum*) and it was shown to develop typical sunblotch stem symptoms (da Graca, 1978; da Graca and van Vuuren, 1980). The following paper reports the successful transmission of sunblotch to three other lauraceous species.

### MATERIALS AND METHODS

Each of five camphor (*Cinnamomun camphora*), *Persea indica*, *Cryptocarya liebertiana* and white stinkwood (*Ocotea bullata*) seedlings, and five Coyo (*Persea Schiedeana*) grafted plants, were each inoculated with three bark strips from a sunblotch-infected Edranol avocado tree. The plants were observed for symptom development. After two years all the plants were tested for sunblotch by grafting bark strips onto Collinson avocado seedlings in a hot glasshouse (da Graca, 1979; da Graca and van Vuuren, in press). Subsequently, three more camphor seedlings were inoculated with sunblotch.

## RESULTS AND DISCUSSION

Two Coyo plants developed yellow depressed stem streaks 10 months after being inoculated (Fig. 1), and back inoculation to avocado indicators confirmed the presence of sunblotch.

One *Ocotea bullata* seedling developed curly leaves and twig dieback (Figs. 2 and 3), and indexed positive for sunblotch. None of the other plants developed any disease symptoms, but one camphor seedling was shown to be infected by indexing. In the subsequent experiment with camphor, one seedling developed a light pink depressed streak on its stem five months after inoculation. This plant has not yet been indexed.

The non-infection of *P. indica* and *C. liebertiana* does not necessarily mean that they are non-hosts. Transmission to the other species occurred at a fairly low rate, and successful transmission to these species may have occurred if more plants were available for experimentation.

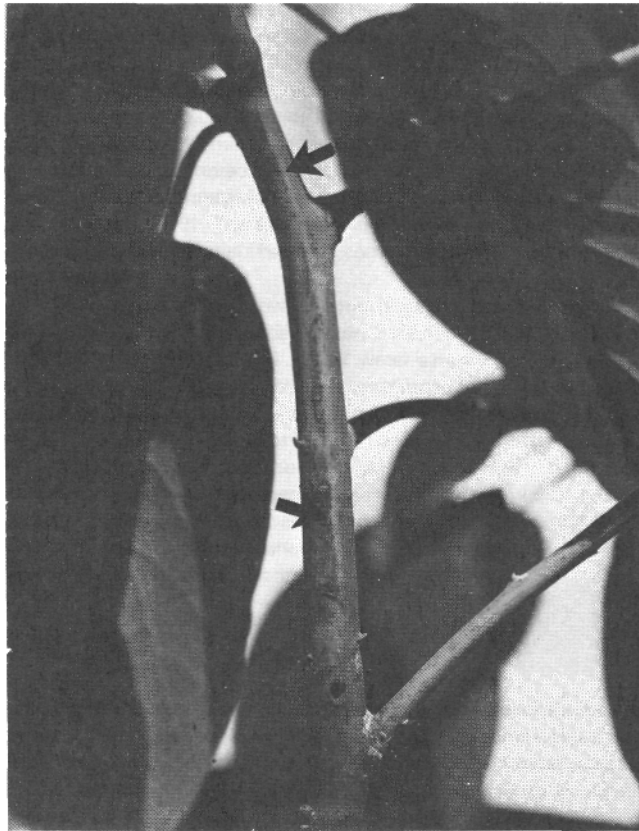


FIG. 1: *Persea Schiedeana* plant with stem symptoms of sunblotch disease



FIG. 2: Healthy *Ocotea bullata* leaf (left) and four curly leaves from an infected seedling



FIG. 3: Twig die-back and curly leaves on *O. bullata* seedling with sunblotch

## LITERATURE CITED

1. ALPER, M., M. BAR-JOSEPH, R. SALOMON & G. LOEBENSTEIN, 1978. Some characteristics of an avocado strain of tobacco mosaic virus. *Phytoparasitica* 6: 15 - 20.
2. DA GRACA, J.V. 1978. Avocado sunblotch research in South Africa (1978). *S. Afr. Avo. Growers' Assoc. Res, Rept. 2*: 53.
3. DA GRACA, J.V. 1979. Avocado sunblotch research report. *S. Afr. Avo. Growers' Assoc. Res. Rept. 3*: 65 - 66.
4. DA GRACA, J.V. & S.P. VAN VUUREN, 1980. Transmission of avocado sunblotch to cinnamon. *Plant Dis*, 64: 475.
5. DA GRACA, J.V. & S.P. VAN VUUREN. The use of high glasshouse temperature to increase the rate of symptom development in indicator seedlings. *Plant Dis*. (in press).