CHEMICAL CONTROL OF POST-HARVEST DISEASES OF AVOCADOS
BY PRE-HARVEST FUNGICIDE APPLICATION

N LABUSCHAGNE
DEPARTMENT OF MICROBIOLOGY AND PLANTPATHOLOGY, UNIVERSITY OF PRETORIA

AWG ROWELL
HL HALLS & SON (PTY) LTD

PROGRESS REPORT:

SUMMARY
Post-harvest anthracnose complex (caused by Colletotrichum gloeosporioides and Dothiorella aromatica) was effectively controlled by pre-harvest applications with several fungicides. Copper oxychloride flowable fungicide (2 applications) copper oxychloride WP (3 times), Difolatan (2 times) and Benomyl (2 times) gave good control.

INTRODUCTION
Avocados are subjected to a complex of post harvest diseases causing serious losses on the overseas markets. The purpose of this field trial was to evaluate pre-harvest fungicidal sprays for control of the anthracnose complex (caused by Colletotrichum gloeosporioides and Dothiorella aromatica).

PROCEDURE
The field trial was conducted in an orchard of 6 year old avocado trees (cultivar Fuerte) at HL Hall & Sons. Mataffin.

Experimental design:
Randomized (blockless) design with 4 replications of 2 tree plots. At harvest a total of
32 fruits were picked per replication and used for further assessment.

**Harvest date:**
19.04.82

**Method of evaluation and disease assessment:**
After picking, the fruit was stored for 37 days at 5.5°C and subsequently ripened at room temperature before disease assessment commenced. Anthracnose complex was assessed by rating individual fruit according to the following Key:

- Class 0 = No lesions
- 1 = 1 to 10 lesions
- 2 = More than 10 lesions

After analysis it was found that differences between treatments were more reliable when the percentage fruit in class 0 (i.e. clean fruit) was used as criterium.

**Treatments and dates of application:**

<table>
<thead>
<tr>
<th>Fungicide Treatments</th>
<th>Rate (grams product/100 l water)</th>
<th>Dates of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Virokop WP (50% Cu)</td>
<td>150 g a.i.</td>
<td>x</td>
</tr>
<tr>
<td>Virokop WP (50% Cu)</td>
<td>150 g a.i.</td>
<td>x</td>
</tr>
<tr>
<td>Difolatan WP</td>
<td>100 g a.i.</td>
<td>x x x</td>
</tr>
<tr>
<td>Kocide WP (50% Cu)</td>
<td>150 g a.i.</td>
<td>x</td>
</tr>
<tr>
<td>Benlate WP</td>
<td>25 g a.i.</td>
<td>x</td>
</tr>
<tr>
<td>Virokop Flow (50% Cu)</td>
<td>150 g a.i.</td>
<td>x</td>
</tr>
</tbody>
</table>

No additives were applied.

**Method of application:** Fungicides were applied by means of a high pressure sprayer with hand lances (high volume).
RESULTS:

![Table 1: Effect of fungicide treatments on the anthracnose complex (Colletotrichum & Dothiorella) expressed as the percentage clean (healthy) fruit.]

**DISCUSSION:**

The best results were obtained with Copper Flow. The treatments with copper oxychloride WP (3 times), Difolatan (applied 2 times) and Benlate (applied 2 times) were all significantly better than the control, but did not differ significantly (p = 0.05) from treatment with Copper flow.

Copper oxychloride (applied twice) and Kocide (applied twice) did not differ significantly from the control treatment.

Earlier reports showed that copper oxychloride WP has an effect against all the avocado fruit diseases, viz Cercospora spot, sooty blotch, stem-end rot and the anthracnose complex (Kotzé et al 1982). At this stage in time copper oxychloride WP seems to be the best all round fungicide for avocados. The copper oxychloride flow should be further evaluated as it shows considerable promise.

**REFERENCES:**