QUALITY AND OIL CONTENT OF EARLY SEASON FUERTE AVOCADO ORIGINATING FROM THE LEVUBU REGION

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SUMMARY
A significant difference in the percentage moisture between large and small fruit was found during the early part of the season, but this disappeared as the season progressed. Fruit picked at a 81.8% moisture ripened normally within 6 — 7 days at room temperature and did not appear to have an adverse effect on quality. Anthracnose and stem-end rot constituted the major postharvest problems. The incidence of physiological disorders was low.

INTRODUCTION
The Division of Inspection Services of the Department of Agriculture and Fisheries allowed a special dispensation where fruit from the Levubu region, with a minimum moisture content of 81.8% (8% oil) could be exported. A restriction was placed on the counts allowed viz. 10, 12, 14 and 16 only — and the dispensation was applicable only up to the 15th March 1981. Oil content and the influence this has on fruit quality at ripening was monitored for each consignment.

METHODS
Samples were drawn (one carton/count) from every producer packing fruit and exporting under the experimental consignments (EXLE). This constituted four shipments namely:

- Waterberg on 17th February 1981
- Winterberg on 25th February 1981
- Sederberg on 4th March 1981
- Ortelius on 11th March 1981
A sample was drawn for moisture content determination for each individual sample. Five fruit/carton/count was regarded as a representative sample for an oil determination and this sample was replicated six times, (three in a conventional draught oven and three in a microwave oven). The method used for moisture content determination was one advocated by CSFRI, Nelspruit (Swarts 1976).

The remaining fruit was stored at 5,5°C for ± 30 days, (simulated sea freight conditions), ripened at 21°C and evaluated for internal and external quality. Fruit was regarded as ripe when found to give under light pressure exerted by hand.

Symptoms caused by anthracnose, (Colletotrichum gloeosporioides) stem-end rot (Thyronectria pseudotrichia, C. gloeosporioides, Dothiorella aromatica and Phomopsis perseae) and the Dothiorella Colletotrichum complex, were the only postharvest diseases monitored (Darvas and Kotzé, 1981) pulp spot and lead discolouration (Swarts, 1979) were the only two physiological disorders monitored during the course of the investigation.

Condition of fruit was expressed in percentage surface area covered both internally and externally with lesions caused by pathogenic organisms and physiological disorders. A rating of 1 — 10 was used where 1 represents 10% and 10 a 100% of total surface area of fruit covered by the lesions. Ratings were converted to percentages by using the following formula:

\[
\text{\% Surface area} = \frac{\text{Total rating}}{\text{No. of fruit rated}} \times \frac{100}{10}
\]

A very subjective test for the determination of taste was done. A small sample from each fruit was tasted by a panel of three people. Taste was rated on a scale of 1 to 3 where

1 = mediocre
2 = good
3 = excellent

Prior to sampling fruit for oil etc. the mass of each carton was determined.

RESULTS AND DISCUSSION

Although difficult to generalize as the variability in results between different growers in the region is high, certain trends could be determined.

The majority of fruit exported during February (17/2/1981 and 25/2/1981) had an oil content below 10%. (Table 1). It is obvious that for these two early shipments, the larger fruit, i.e. counts 12 and 14 had a considerably higher oil content than the smaller fruit (counts 16 and 18). This trend appears to stop in fruit shipped subsequently, e.g. fruit shipped on the 4/3/1981 and 11/3/1981 does not show this marked differentiation in oil content between respective counts (Table 1 and 2). There is a definite tendency during the early part of the season for a marked differentiation in the percentage moisture (Table 3) between the short and long counts, which then disappear during the latter part of the season (Table 1 and 3). Thus to avoid
picking fruit with a low oil content, selective picking should be done during the early part of the season.
From moisture tests done during the course of the past season, it is indicated that Fuerte fruit in the Levubu Valley do not ripen earlier than fruit in the Letaba region, but they might be earlier than fruit in the Nelspruit region (Fig. 1).

It is, however, wrong to generalize, because fruit from individual farms in the Levubu Valley ripens much later than others. The time of maturity is also determined by climate conditions during flowering and fruit set. If fruit set is late due to a cold winter, fruit maturity will be delayed. More observations are needed before a region can be classified as "early". There are too many variations within a region.

All the fruit monitored irrespective of oil content or date of picking, took 6 — 7 days to ripen at 21 °C after approximately 30 days storage at 5,5°C (Tables 1 and 2). No correlation could be found between oil and incidence of postharvest diseases. With minor exceptions fruit ripened normally and texture of flesh was normal.

A high incidence of pathogenic problems were recorded for fruit exported on the 25th February (Water berg) and the 4th March (Seder berg) (Table 2). Anthracnose and stem end rot were the two most important postharvest problems monitored. This could possibly be due to the fact that during this period, high rainfall prevailed and the majority of the fruit shipped was packed under extremely wet conditions. Cold damage was generally low and no pulp spot monitored throughout the trial period (Table 2).

Cartons varied in mass from 3,8 to 4,2 kg.

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<tr>
<th>Date picked</th>
<th>Count</th>
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<tbody>
<tr>
<td></td>
<td>12</td>
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ACKNOWLEDGEMENTS

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REFERENCES