

# Avocado Propagation in Trinidad

R. J. HILTON<sup>1</sup> AND G. F. MASON<sup>2</sup>

Diversification in diet and in catering to flavour buds is one result of the affluent society. With increased buying power and a companion increase in storage and in long distance transport of perishable commodities, semi-tropical fruits are appearing in new outlets, and in larger quantities than ever before. Thus, guava-jellies, mango and passion fruit nectars, Barbados cherry jam and essences for soursop ice cream are no longer rarities, even though they still may be novelties for many people.

Among the more or less exotic fruits the avocado is now almost commonplace in northern markets. Used as an appetizer, or as a salad component, or as the chief ingredient for tasty and "different" spreads, avocados seem destined to become an increasingly important food product. For this reason, attention is being accorded all phases of their culture in areas where they are climatically adapted.

Recently, the authors had occasion to initiate a series of tests to determine methods for improving the production in Trinidad of the West Indian race of avocados. Cultivars of this race are generally of lower oil content than those of Guatemalan and West Indian races, but often are of excellent flavour. They may vary in size from 8 ounces to 3 or more pounds, in shape from globular to elaborately pyriform, and in colour from rich green to liver colour, cinnamon red and dark purple.

In frameworking avocado trees, the tissue rejection effect of sloughing grafted branches has occasionally been reported. Our trials included

working several cultivars of Mexican and Mexican-hybrid races, and of West Indian race, on mature tree of Collison, Pollock, and Winslowson avocado at the University of the West Indies, Field Station, St. Joseph, Trinidad. Conventional "side" and "stub" methods of framework grafting were generally unsuccessful when done early in the dry season in late January, but somewhat more successful (20% take) when the scions were inserted during the wet season, in July. Even at the latter dates, and with all scions protected with paper bag covers, many branches were sloughed off, showing a clean ball-and-socket type of cleavage.

When budding (inverted-T, chip and patch) was done, the branch rejection was less, but a number of relatively young branches responded even to the minor budding wounds by the same sloughing reaction as did those on which multiple-bud scions were placed. In both grafting and budding, percent takes recorded after one month had to be revised downward very considerably when a recount was taken two months after the work was done. This was due to two main factors: one the branch rejection already discussed, and the other was the sloughing of the donor buds themselves. In the latter cases, the bud shield or patch would make a satisfactory union with the stock, but the bud itself unaccountably desiccated and fell away. We assume this to be another case of tissue rejection, and to be like the branch rejection, an expression of an

<sup>1</sup>Department of Horticultural Science, University of Guelph, Guelph Ontario.

<sup>2</sup>Department of Crop Science, The University of the West Indies, St. Augustine, Trinidad.

unusual kind of stock/scion incompatibility.

Workers with cacao in East Africa have found that notching or ringing the stock above an inserted bud has the effect of interrupting phloem transport on a temporary basis, and of speeding up the scion bud-break. We tried this very carefully on the framework-budded avocado trees, but with negative results. Notching affected neither the take or buds; nor the percentage of branches rejected, regardless of the budding technique employed. Ringing the scion branches three weeks before the budding and grafting gave similarly negative results.

We did find differences in cultivars and in stock/scion effects, and these are still being evaluated. Generally speaking, patch and chip budding proved superior to the inverted-T

for frameworking; and budding gave a better take than multiple-bud grafting. We think also that cultivars of the West Indian race, or of hybrids involving that race, stand a better chance of being compatible than do those of Guatemalan and Mexican races, although the Collinson stock tree proved a reluctant partner for almost all scion cultivars tested.

Research still under way includes own-root propagation by cuttings, and by deep planting of budded seedlings to encourage induction of scion roots. A rhizotron has been constructed and several representative Trinidad soils have been "reconstituted" beside the glass panes in large bottomless "boxes," and a detailed study of root growth in relation to season, tree juvenility and susceptibility to *Phytophthora* root rot is now in progress.

## Bluegem Blueberry

R. H. SHARPE AND W. B. SHERMAN\*

Rabbiteye blueberries, *Vaccinium ashei* Reade, are being commercially grown on approximately 50 acres in northern Florida. The varieties, 'Tifblue,' 'Homebelle,' and 'Woodward,' from Georgia, are most important.

Breeding work was started at Gainesville, Florida with rabbiteye in 1950 and approximately 4000 seedlings of this species have since been fruited and evaluated. One of these, 'Bluegem,' tested as Fla. 6-164, is being released in 1970.

'Bluegem' blooms at about the same time as 'Woodward,' and in greenhouse tests, pollination with 'Woodward' has resulted in better fruiting than from 'Bluegem' selfed. In the Gainesville area both of these varieties bloom in early March before 'Tifblue.' 'Bluegem' appears to be adapted to

the same areas where 'Woodard' is successful, and is suggested for interplanting with this variety.

An outstanding character of 'Bluegem' fruit is the long retention on the bush in firm condition. In 1969, 90% of the fruit could have been harvested in a single picking between June 20 and 25. This is a very valuable characteristic for mechanical harvesting. For best quality, it is recommended that 'Bluegem' be picked one to two weeks after blue color first develops. The picking scar is dry and very small, thus reducing chances of decay, and enhancing shelf life of the fresh fruit. Crop production has been heavy in the Gainesville area. Yields of three-year old bushes of 'Bluegem' in 1969 ranged from 2½ to 5 lbs. per plant. Fruit size is average for the rabbiteye

\*Fruit Crops Department, University of Florida.