

THE AVOCADO INDUSTRY OF SOUTHERN AFRICA, 1956

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"Have class, will travel." That's pretty much the story of the FUERTE avocado for it has gone a long way from its Central American home to become the foundation of the world's avocado industry. In 1956 I learned how far it has gone.

For the past eight years I have been traveling in foreign citrus producing areas making studies for the Foreign Agricultural Service of the U.S. Department of Agriculture. In my travels I have kept an eye open for avocados.

I have seen some domestic production in the Caribbean and Mexico. There is an experimental planting at Rabat in Morocco at the botanical gardens. I have seen a very old Mexican seedling tree in the botanical gardens in Algiers. The experiment station at Acireale on Sicily did have a planting until a few years ago when the trees were removed. I was told that the fruit did not suit the Italian taste. It was too oily! I have never seen any commercial avocado production in either Spain or Italy.

The Fuerte had found its way to Palermo, Sicily, before the war and the one tree I know of was doing well; however, it was a casualty. American soldiers camped nearby emptied their soapy wash water around it. Such is the penalty of furnishing shade for the cult of the clean!

In all of the areas I have seen avocados they are either a wild crop for domestic use, or an experiment by a government with no commercial production.

In recent years I have been seeing some very good Fuerte avocados on the London market. Where did they come from? On making an inquiry, I have been told they were from the Canary Islands and Israel.

I found the primary source in the Union of South Africa. So the Fuerte has traveled a long way from home.

In May, 1956, I arrived in Salisbury, Southern Rhodesia. Near Salisbury I saw vigorous avocado trees in garden plantings. The trees had heavy sets of excellent quality fruit. Southern Rhodesia is too isolated for an avocado export industry but it is evident that the fruit may be produced for domestic consumption.

The commercial export industry is located farther south in the northern Transvaal of the Union of South Africa near Tzaneen and in Swaziland, a British protectorate, adjoining the Transvaal.

The northern Transvaal was the first area I visited as it is the earliest citrus producing district. I drove into Tzaneen and found large plantings of avocados on hillsides near citrus, eucalyptus trees, passion fruit, and mangoes. Passion fruit is widely used in

South Africa in jams and soft drinks. Eucalyptus trees are grown here for posts to be used in South Africa's extensive mining industry. The trees grow rapidly and it is said to be a very profitable crop.

The first impression of the avocado industry is that it is much like the hillside plantings in California. On closer inspection there are many differences.

The climate at Tzaneen is tropical. The average rainfall is 39.3 inches per year, but it is as high as 60 inches per year in some high areas. The heaviest rainfall occurs in the summer, October through March, when temperatures are the highest, averaging over 80°F, with an average humidity of over 70%. Five months, May through September, are the dry season with less than an inch of rain per month, on the average. In spite of the high rainfall, most groves are irrigated a part of each year.



Left, picking Fuerte Avocados at Tzaneen in May 1956. Right, an on-farm avocado packing shed, Tzaneen.

The southern hemisphere season is very different from ours. Spring is September through October; summer, November through March; fall, April through May; and winter is June to September.

With this seasonal influence, Fuertes bloom in July, August and September. Fuertes are picked from May to August, Ryans, September to December, and Nabals from August to October.

This is a going commercial industry which, according to the Year Book of the Union of South Africa, contained 244,150 trees in 1950 of which 143,473 were of bearing age. According to Mr. E. F. Malan and Dr. A. Vander Meulen¹, of the 244,150 trees planted in 1950, 217,413 were in the Transvaal, 20,195 in the Province of Natal, and 6,542 in the Province of the Cape of Good Hope. While no data are available, there are also commercial plantings in Swaziland.

Considering an average planting density of about 40 trees per acre, there were about 6,000 acres of avocados in the Union of South Africa in 1950. Planting has continued

since 1950 so the total planted area in 1957 is probably at least 7,500 acres in the Union of South Africa, plus an undetermined acreage in Swaziland.

California varieties are predominant. Over 50% of planted acreage consists of Fuertes, the balance is devoted to many varieties, including Itzamna, Ryan, Edranol, Carlsbad, Nabal, Carton, Dickey, Collinson, and others.

Cultural practices followed are interesting. Mexican rootstock is used and many nurseries use "Tip budding" as a means of propagation. A nursery visited raised all trees in wooden boxes about the size of a five-gallon oil can. The seed is planted in these boxes, and the trees are kept there through budding until they are planted in the grove.

In 1956, commercial nurseries were charging 12 shillings (\$1.68) each for budded avocado trees. When purchased in quantity, a lower price was paid.

I also visited the "Belvedere Nurseries" which is run by Mr. E. J. Reineke who is a member of the California Avocado Society.

Mr. Reineke operates a general nursery business selling ornamental plants, commercial citrus, avocado, deciduous fruit and nut producing trees, as well as subtropicals. Like California, South Africa produces a wide range of fruit and nut crops.

Nearly all avocado plantings are on sloping ground which has been terraced. Nearly all orchards are operated under a turf culture. The weed and grass growth is cut several times a year. Some growers fertilize with nitrates twice a year in September and in April.

Fuertes are usually planted 30 to 40 to the acre. Some upright growing trees are more closely planted.

In the Transvaal, Fuerte avocados begin to bear at 14 months of age and will average 120 lbs. to 200 lbs. of fruit per tree per year. A good tree will produce an average of 250 lbs. of fruit per year. The Collinson variety is a heavy producer and some trees have been known to bear 700 to 800 pounds of fruit. Unfortunately, the Collinson variety has a disease called Trunk Canker which has destroyed many trees at an early age.

Studies made in South Africa² indicate that Fuertes have a highly alternate pattern of production. Mr. E. F. Malan and Dr. A. Vander Meulen studied the yields on 477 trees and found that the average was 11.7 flats per tree per year. This average does not illustrate the production pattern. These 477 trees produced an average of 17.7 flats per tree in 1949, 1.2 in 1950, 21.2 in 1951, 2.9 in 1952, and 15.6 in 1953.

The South Africa avocado grower has many disease problems. The high humidity and rainfall create ideal conditions for fungus. Dead trees in groves were evidence of problems with root fungus. The Collinson variety which has "trunk canker" is treated by some growers by injecting Methylene blue into the tree trunk each year. This treatment is said to retard the disease.

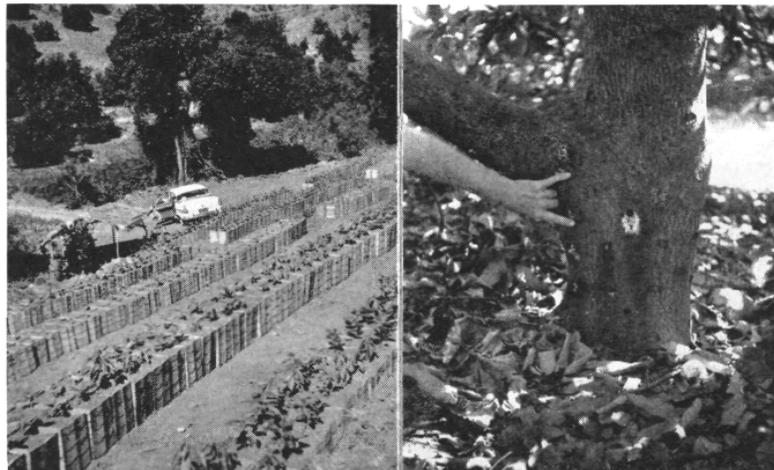
Insect pests also attack the fruits and growers have been known to tie paper bags around each fruit on the tree.



Left, Mr. L. F. Leon, Tzaneen avocado grower holds a packed flat of avocados for the inspection of Mr. D. F. Marais, Northern Transvaal field officer for the South African Cooperative Citrus Exchange, Ltd. Right, flats of avocados in an unrefrigerated rail car at Politsi near Tzaneen ready for shipment to domestic market or for export.



Left, a view of the Tzaneen area in the Northern Transvaal of the Union of South Africa. Right, a grove of Fuerte Avocados near Tzaneen.



Left, an avocado nursery. The trees are grown from seed to budded trees in individual boxes. Right, the trunk of a Collinson Avocado tree treated with methylene blue which has been injected into borer holes.

In the Transvaal, cash wages to native field labor are low, averaging about 28 to 35 U.S. cents per day. In addition to wages, the native labor is furnished housing and usually given a food and blanket allowance in addition to other services. Women packers in citrus houses may make \$12.00 to \$15.00 per month. While wages are low, individual output is also low.

There are no official data on production, but trade sources estimate that in 1956 the Tzaneen area produced about 250,000 flats or 1,500 tons. Considering that there is some production in Natal, Cape Province, and Swaziland, it would be fair to assume that total 1956 avocado production in southern Africa was about 350,000 flats or about 2,000 tons. Since at least a third of present acreage is young trees, higher production can be expected in the future.

I was driven through the area by Mr. D. F. Marais, northern Transvaal field officer of the South African Cooperative Citrus Exchange. Mr. Marais drove to the Evenrond Estate of Mr. L. F. Leon. Mr. Leon is also a member of the California Avocado Society. At Evenrond, Fuerte avocados were being prepared for export. The fruit is packed in flats similar to those used in California.

These "flats" are 12" x 18" and 3" or 4" deep, depending on the size of fruit being packed. The average weight of a packed flat is about 12 pounds. The size counts used are 14, 12, 10, 9, and 8 fruits to the flat.

The fruit is brought from the grove in field boxes. At the "on farm" packing shed, it is sight sized and graded and packed in excelsior filled flats. The fruit seen was of excellent appearance and the packing was good.

The packed fruit is shipped by rail in un-refrigerated cars to the domestic market and by refrigerated cars, when available, to Durban, 788 miles, or Cape Town, over 1200 miles, for export to England. At export ports, the fruit is held in cold storage pending export. All sea shipment is under refrigeration.

The trip to Durban, even by express, may take two days. Refrigerated freight to Cape Town may take a week. The sea voyage to England requires about three weeks. Delivery of South African avocados in London requires about a month from the time the fruit is picked.

All of the South African railways are narrow gauge, and all are operated by the South African government. The government gives preferential freight rates to avocado shipments for export. In 1956 the freight from Politsi (Tzaneen) to Cape Town for a 12-pound flat of avocados was 9 pence (10¼ U.S. cents) for refrigerated transport of export fruit and 9 pence to 10 pence (10¼ to 11½ U.S. cents) per flat for non-refrigerated shipments for the domestic market.

At South African ports the average dock charge including cold storage is 7 pence (8¼ U.S. cents) per flat. The average cost of transport and handling from a Transvaal packing shed to Covent Garden market in London is about 6 shillings (84 U.S. cents) per flat.

In 1956 the trade estimated that avocados were selling at 21c to 25c per fruit wholesale in London. Wholesale quotations in London range from 7c to 42c per fruit. The average is about 21c per fruit.

Avocados are exported from South Africa from April until late August or over about an 18-week period. Since it requires about a month to reach market in London, South African fruit is on the London market in volume from about May 15 until about October 1. South African trade sources indicate that the only other avocados sold in England come from Madeira and Israel. Madeira avocados are sold in London October 15 to January 1.

There are no official data either on exports from South Africa or imports into England, but South African trade sources estimate exports at 3000 to 3500 flats per week during the export season. About 2500 flats per week come from Tzaneen in the Transvaal and 500 to 1000 flats per week from Swaziland.

Considering the period of exports is only about 18 weeks, we may estimate that total South African exports did not exceed 63,000 flats in 1956. Even a 50,000 flat export is sizable business in this type of fruit.

Using this pattern, we may estimate the utilization of the 1956 production of 350,000 flats as 150,000 flats for domestic consumption fresh, about 50,000 flats exported to England, and 150,000 flats used for products and other non-fresh market uses.

Poor transportation facilities in South Africa is one of the major marketing problems. The government railways are slow. Experience has shown that fruit having an oil content of 12% to 18% is best for export, and packed fruit shipped without refrigeration must reach cold storage at an export port not over 48 hours after leaving the packinghouse.

In order to help lengthen the market life of fruit, growers are using Polyethylene bags to wrap each fruit. These bags are imprinted as follows:

"South African Avocado

Some suggestions on eating this fruit.

Sliced into small cubes and use with tomatoes and lettuce in cold salad.

"Cubed or mashed with salt, pepper, lemon or vinegar, and served with lobster, shrimp and other sea foods.

"As an Hors D'oeuvre — mashed and seasoned with tomato sauce, chopped onion and seasoning.

"As a sandwich spread, mashed with seasoning.

"Handle Carefully —

Keep in a cool place."

These are different instructions for consumption than we would use but they indicate English consumption habits and South African thinking.

Looking ahead, South Africans believe there are market opportunities for avocados in continental Europe. They plan to explore these markets in the future.

In addition to fresh marketing, South Africans are interested in avocado products.

A canning plant at Politsi, near Tzaneen, is processing avocado oil. Trade sources indicate that about 750 tons of fruit are available for processing each year. The oil is

pasteurized and packed in sealed tin cans. In 1956 it was reported that raw oil was selling for 6 shillings (84 U.S. cents) per pound at the processing plant. Trade sources also indicate that there is a market in the United States and England for avocado oil and pulp.

What importance is this to the United States avocado industry? It is evident that southern Africa can grow and export an excellent quality avocado. They will be our competitors in European markets with fresh fruit. They will also be competitors in avocado oil and pulp. These products can probably be produced cheaply. But isn't it also true that avocados suitable for the production of oil are even more abundant in Mexico and Central America?

I believe that these competitive items are not the most important factor involved. South Africa has illustrated that avocados can be exported to distant markets. They have also illustrated that there is a market in western Europe for avocados.

Both the Florida and the California avocado industries have better transport facilities available than does South Africa. We may ship from California to Europe either by sea or by rail through New York.

Because of the southern season, South Africa has to market her fruit during the European summer when it meets competition from European deciduous fruits and berries. Our winter marketing season should be more suitable for European export marketing.

We cannot sell avocados in England because of currency restrictions, but the continental markets of Belgium, Netherlands, Germany, Switzerland, and Sweden are open to us and may offer a winter avocado market when we choose to develop it. The avocado is not known in these markets and would have to be introduced as a new fruit. Americans at our Consulates and Embassies would like to be able to buy avocados. Thus, we at least have a small market to start with.

The horizon of our avocado market can be as wide as we choose to make it.

¹Farming in South Africa, page 509, July 1954.

²Mr. E. F. Malan and Dr. A. Vander Meulen "Farming in South Africa, July, 1954."