

NEW OBSERVATIONS ON AVOCADO GROWING IN MOROCCO

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Fifteen years ago there were only a few avocado orchards in Morocco, nearly all located on the Experimental Farm in Rabat: five Fuerte, one Mayapan, one Mexicole, one Panchoy, two Anaheim, and various seedlings.

In 1950, an arboriculturist in Skirat, near Rabat, imported from California a dozen commercial varieties suitable to this climate, which has many similarities with that of California.

The two Moroccan coastlines on the Atlantic Ocean and the Mediterranean have higher average and minimum temperatures by one to three degrees centigrade than those of San Diego. Humidity remains at a fairly constant level as required for avocados.

In the climate zone of Skirat, it is interesting to note that the three species, West Indian, Guatemalan, and Mexican and their hybrids, with rare exceptions, have extremely good production.

Since 1950, the number of varieties has increased considerably to the point where there are now more than one hundred.

These orchards now include three types:

- 1) One for study and experiment
- 2) One for commercial sale in Europe and Morocco
- 3) One nursery

Actually, because of the Moroccan decree forbidding acquisition of additional land by foreigners, this pilot-farm has not reached the hoped-for expansion. Furthermore, for the past ten years there have been no new orchards established, except for a government experiment, now five years old, (14 hectares) which seems to be unsuccessful because of the unfavorable climate and sub-soil in the area of this particular experiment.

At present, however, Moroccan growers are well aware of the future opportunity in planting avocado orchards, and in 1966 and 1967, fifteen hectares around Rabat and in the Gharb were planted to Fuerte, Zutano, Bacon and Hass, supplied from the nursery at Skirat. Probably this initial effort will be continued.

The Yearbook of 1965 published an article giving technical information on the orchard at Skirat as well as the results obtained from the different varieties. A table gave the average annual harvest by tree, calculated from the two seasons 1963-64 and 1964-65.

The two following seasons, 1965-66 and 1966-67, were excellent, and as a result, the average weight of the fruit harvested during these two seasons from a tree seven years

old, for example, is far superior to the weight of the fruit harvested from a seven-year old tree in 1963-64 and 1964-65.

For eight hundred trees of all varieties, between five and fourteen years old (420 Fuerte, 90 Zutano, 54 MacArthur, 38 Jalna, 35 Nabel, 21 Hass, 18 Ettinger, 10 Hellen, etc.) the weight of fruit sold is as follows:

1965-66—36,400 K (800 trees) . . . 12,500 K per hectare . . .
(11,200 lb. per acre)

1966-67—52,600 K . . . 18,760 K per hectare . . . (16,770 lb. per acre)

These trees, planted very close together, in so far as the Fuerte and the Hass are concerned, cover only 2.9 hectares (7 acres, 770 sq. yds.)

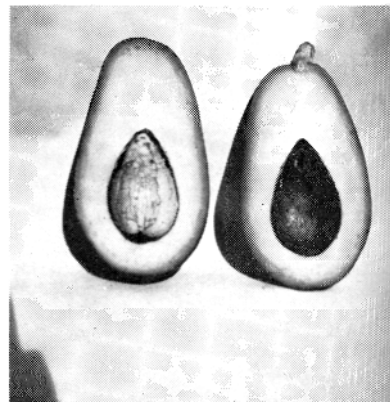
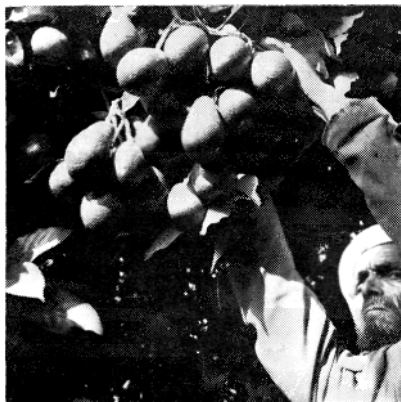
For the coming season, 1967-68, the outlook is not too good. The anticipated total yield is estimated at 30,000 K.

One fact, however, has unfortunately upset this estimate.

On July of this year, the *chergui*, the Southeast wind, although not strong, was hot and dry enough for a period three hours to break all maximum heat records for the past sixty years on the coast at Skirat, rising to 47.5 Centigrade. At Casablanca, the past record heat of 43.5 C. was broken by a temperature of 46.1 C.

The south and east sides of the trees looked as if they had been destroyed by a torch. At present, we estimate a crop loss of at least 50%. On the subject of the wind damage, we have made the following observations:

1. Most damaged were the Jalna, Hass, Fuerte.
2. In decreasing order of damage were Zutano, MacArthur, Mexicola, Bacon, Ettinger.
3. Scarcely damaged were the Taylor and Lulu.
4. Most resistant to damage were the Choquette and ChavanierNo. 2.



Chavanier #2—a 1949 seedling. Season—November to April. In 1966-'67, the tree produced 730 kilos. Average weight of fruit—330 grams.

The orchards which had been irrigated within three days of the wind suffered less. The unprotected one to four-year old trees were the most burned, some totally, while the trees more than ten years old, in closely planted orchards, protected each other.

In the nursery, the trees less than two months old died. Twenty percent of the grafts were destroyed or seriously damaged.

As for other types of vegetation, most were very resistant, except for the macadamias and the eugenia (*myrciaria edulis*).

There was light damage to the persimmons, the cherimoyas, the pecans, the passion fruit, the mangoes, the Natal plum, and the white sapote.

There was no damage to the guavas, the litchis, the papayas, the feijoas, the bananas, the eugenia (*musa sinensis*) nor in the nursery of seven thousand two year-old mandarin orange trees (clementine variety).

Avocado consumption is low in Morocco: about twelve tons are marketed in the cities — Casahlanca, Rabat. Tanger. Fruit is exported to France, to England and to Germany.

From September, 1966 to the present time, France has received and sold 2500 tons of avocados, coming especially from Israel, South Africa, and the Antilles (300 tons). Although this figure is higher by sixty percent than that of the preceding year, the price has remained fairly constant, except for the fruit from the Antilles, whose value has not been calculated. Morocco accounts for 1.2% of France's imports of avocados.

The English market has been very uncertain and generally poor because of the irregularity of shipment arrivals, difficulty of transportation, and storage problems.

The German market is fairly good but not as yet very important.

In any case, at the present time, the avocados from Morocco are rated of prime quality in European markets.