

AVOCADOS IN THE SAN JOAQUIN VALLEY

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The last general article on avocados in Central California was written for the California Avocado Society Yearbook in 1964. The title was "Report from the North — Tulare County Keeps Trying."

At last, it is beginning to appear as if Tulare County has succeeded, if only in a small way. The avocado industry seems to be successfully established along the foothills of the citrus growing areas of the Central Valley.

Visitors to Tulare County are surprised to see a few avocado plantings near the foothills. Commercial avocado growing in Central California actually dates back to the turn of the century. Old-timers in Success Valley east of Porterville report that fruit from Mexican seedlings was shipped from Porterville to San Francisco, where they were served as "alligator pears" in some of the finer hotels, as early as the 1890's.

The Case and Case Ranch, near Orange Cove in Southern Fresno County, grew and marketed Fuerte avocados from a one-acre planting for about 40 years. But expansion of these limited plantings for many years was considered out of the question because of frequent poor crops resulting from adverse weather and alternate bearing habits.

Many seedlings grow as dooryard trees, and both the Duke and Mexicola have long thrived and produced good crops in Central California.

Limited commercial growing of avocados has been tried by many growers in Tulare and Fresno County citrus districts for the past ten years. The usually good prices that prevail in the fall months after the summer crop has been completed in Southern California, and before the Fuerte crop begins, were responsible for the plantings.

Many fall-maturing varieties were brought to Central California to see if they might be suitable for the commercial market. Varieties such as Emerald, Jalna, Covocado, Bacon and Zutano were chosen for trial because of their time of maturity as well as hardiness.

It was quickly discovered that these varieties do not react the same in Central California as in the southern part of the state. The severe summer climate has a profound effect on many varieties. Oil tests show that Tulare County avocados mature about one month earlier than the same varieties in the earliest maturing districts in Southern California. In addition, fruit from the north tend to be elongated as well as having better external appearance, i.e., less spotting and blossom-end breakdown and cracking.

The Bacon and Zutano are now, perhaps, the best of nearly 30 varieties which have been closely checked for maturity, quality and climatic adaptability. Several plantings were developed around 1960, and by 1962 there was a total of 100 acres in Central

California. The citrus growing areas adjacent to the foothills were well suited to avocado production. Good soil conditions, adequate water supply and minimum winter temperatures, higher than those on the valley floor, provide good growing conditions.

Adverse weather conditions occasionally cause tree damage. The winter of 1962-63 was cold enough to cause tree injury in most orchards, but normal winter low temperatures do not cause damage to foliage or bloom. Young trees require frequent irrigation and shade or whitewashing in the summer to protect them from the sun. Excessive "June drop" will occur if adequate water is not available to the trees during the early summer months.

Container grown tip grafts, as well as field grown budded trees, have been widely planted in Central California. In addition, Mexican seedlings grown in the field and planted as balled trees to be grafted after a year or two is a satisfactory method of starting an orchard. Trees must be planted early so they will be well established by the time the high sustained summer temperatures arrive, usually in early June. Frequent irrigation is a must to insure adequate growth (or even survival) during the first summer.

Varieties recommended for planting in Central California are about as resistant to frost as the lemon. Frost protection for fall maturing varieties is not as important as it is for varieties maturing fruit during the winter or later. For the fall maturing (Mexican race) varieties, frost protection is provided only for the protection of the trees and dormant flower buds.



Young avocado seedlings emerging from beneath paper drinking cups. Shingles provide protection from direct sun.



Field grown avocados in the McEwen Nursery near Exeter. These Zutanos were tip-grafted to seedlings grown in place.

Several factors govern frost protection for mature trees: Age, crowding, tree health and variety. The frost hazard for a given location cannot be predicted accurately, and during a "freeze year" few, if any, areas are immune from damaging temperatures.

Each orchard site is different and must be studied in relation to any economic advantage or disadvantage before a decision on frost protection is reached. For example, providing and maintaining wind machines and heaters for an orchard which is rarely subjected to damage by radiational frosts may cost more than the occasional "freeze year" tree injury and flower bud loss. On the other hand, trees planted in areas where radiational frosts are more frequent and severe may require protection from wind machines or heaters, or both, every year during the winter months.

The avocado in the San Joaquin Valley is relatively free of insect pests. Aphids can be a problem in the nursery, particularly under hothouse conditions. The amorbia moth occasionally causes some fruit damage. Diabrotica beetles are sometimes found chewing on the foliage of young trees, especially those planted next to fields where grasses and weeds dry up in the late spring. Occasional damage to trees by deer is noted in some foothill areas.

Not only because of the frost hazard, hut also because of the unique marketing situation, San Joaquin Valley avocado varieties are restricted to the Mexican or hybrid groups. Only by observing trial plantings can growers determine which variety seems to be best for his particular location.

Maturity date is an important consideration. Selected varieties may give good returns if they mature when the market supply from other areas is limited. If varieties used for planting mature at a time of low market demand, returns are apt to be low. Both the summer and winter fruit from Southern California depress market demand. Because of the earlier maturity of Central California avocados, they are marketed at a time when

fruit from other areas is either past the peak of the season (as in the case of Hass) or before the season begins (as with the Fuerte).

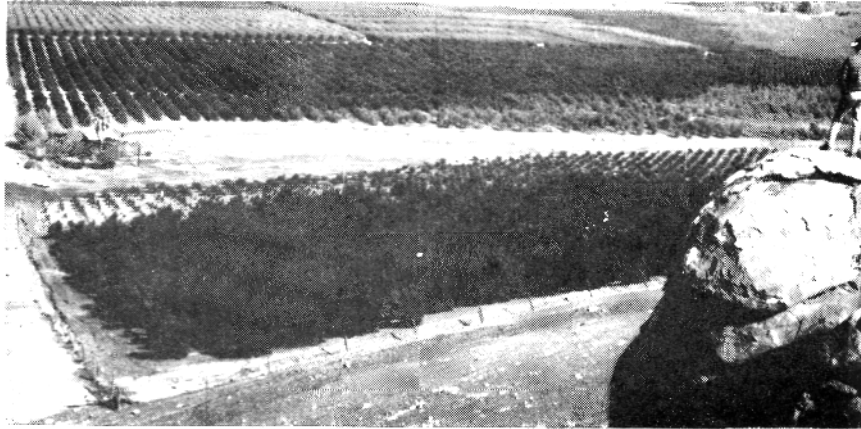
At present, the Bacon and Zutano are planted almost exclusively as commercial varieties in Central California. They both mature by the middle of October and the fruit can remain on the tree in good condition until about the first of December.

The Bacon is slightly more frost resistant, being able to withstand temperatures in the low 20's, if fully dormant. The fruit is of excellent quality. It is slower to come into bearing, however, and does not bear as heavily as the Zutano. The Bacon exhibits an alternate bearing habit, as well as a tendency to bear heavier in some areas than in others.

The Zutano cannot withstand temperatures below the middle 20's without receiving considerable flower bud damage. It comes into bearing early, beginning two to three years after planting and does not appear to alternate bear. The fruit has only fair internal quality. It has an attractive, shiny external appearance, and does not blossom end check as does fruit of this variety grown in some sections of Southern California.



Newly planted Susan trees growing next to a Zutano orchard at the R. J. Owen Ranch near Porterville. Note the shade, rabbit wire and large basin necessary for tree protection for the first two years.



Avocado Orchard (foreground) near Lindsay. Peach, plum, olive, orange, mandarin and pomegranate orchards are shown in the background.

Many other varieties such as Susan are now being examined for commercial possibilities. Variety trials of most fall maturing named varieties from Southern California have proved unsatisfactory commercial possibilities. However, current variety trials are being expanded to include controlled cross pollinated hybrids from the Citrus Research Center at Riverside, as well as other selected seedlings and named varieties.

The present variety situation is far from ideal. A continued search may turn up a variety well suited to the area, i.e, good production, fruit quality and resistance to both frost and high summer temperatures—all necessary for a successful avocado industry in the San Joaquin Valley.

The 300 acres now planted, and there are plans for additional plantings in the near future, should assure the industry of a good supply of avocados available during the fall months. If further plantings are limited, good weather prevails and Southern California does not saturate the October and November market, the future of the avocado industry in the San Joaquin Valley looks promising.