

## CENTRAL CALIFORNIA TRIES FOR THE FALL MARKET

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The success of growers of a few hundred acres of avocados in Central California seems to be surpassed only by the problems facing them. In some years there seem to be few problems standing in the way of this small industry, and avocado production is both highly successful and profitable. However, it is difficult to put together a winning combination every year.

This past year was no exception to the rule that occasionally everything goes wrong. The cold weather of December 1967, advertised in no uncertain terms that this was not going to be a good year for avocados in the San Joaquin Valley. Both low temperatures and long durations below about 22 or 23 degrees F. (8 to 10 hours in some locations) caused widespread damage in the citrus and avocado districts. Few, if any, orchards did not receive some injury. A very few orchards were protected by heaters and came through without much damage. Since there was a high ceiling, or no ceiling at all, wind machines were not effective.

Some orchards were severely damaged and others received little injury to foliage or branches. Damage was severest in the tops of trees.

One difficulty in protecting avocado trees from frost injury, particularly in areas where there are apt to be many nights of low temperatures during winter, is to protect flower buds. These buds are situated on the ends of shoots resulting from last season's growth, and are the first part of the tree to be injured. This occurred extensively this past winter. Many trees appeared to have received no injury, but close examination revealed most flower buds were dead.

The avocado has the remarkable ability to recovery rapidly following severe damage by frost. About all trees, except those badly frozen one or two-year-old trees, came through the winter in good shape. Most of the crop was gone, due to the fact that flower buds were killed.

In spite of the cold weather, growers were not too downhearted as long as their trees were not severely injured. They experienced a very cold winter with severe tree injury in 1962 and recovered to see good production and prices for several years following.

Consequently, there did not seem to be a slowdown in planting new orchards in 1968, as there was following the 1962 freeze. In fact, there were several new large plantings of 10 to 20 acres set out this year, not only in Tulare County but also in southeastern Fresno County and northeastern Kern County. Growers are optimistic the avocado can be grown in Central California. The general skepticism concerning the future of this crop in the San Joaquin Valley that prevailed in 1962 is not nearly as prevalent in 1968.

The variety situation has yet to be resolved. Increasing evidence points out each year that the most widely planted avocado varieties in Central California, the Bacon and Zutano, are far from ideal. The Zutano bears well but the quality of the fruit leaves something to be desired. The fruit quality and frost resistance of the Bacon is better than the Zutano, but the trees are light producers. Some large, 8 to 10-year-old Bacon trees may yield 100 to 150 pounds of fruit one year and nothing the next. Some orchards yield very light to satisfactory crops every year. Most Bacon orchards, however, are full of trees that consistently fail to yield or bear only 5 to 10 pounds of fruit per year.

The disappointing yields exhibited by Bacon trees appear to be somewhat related to both orchard location and soil type. Observations over a number of years show that Bacon trees do not yield well on heavy or shallow soils. Unfortunately, these two soil types are generally found in the warmer foothill locations. Rather than setting an initial crop, which is reduced during the June drop period. Bacon trees do not stick fruit on at bloom time. In Tulare County there are two Bacon orchards that have consistently borne satisfactory crops for a number of years. Both are planted on light, gravelly soil that are easily irrigated deeply and frequently.

Where Bacons and Zutanos are interplanted, or seedlings are inter-planted with Bacons, there is no apparent indication of increased production from cross pollination. Fertilizer, zinc sprays, pruning, and other cultural practices do not seem to influence one orchard to bear better than another. The direction of the slope does not affect yields. The one common denominator of the two satisfactorily producing Bacon orchards in Tulare County is deep gravelly soil with an abundance of water during the growing season.

In spite of the adversities in the avocado business in Central California, few growers have given up. This is partly due to the uncertain future of citrus at the present time. The avocado looks like the only alternative crop for citrus on land suited to both crops. Consequently, the gamble may seem worthwhile to growers having land capable of raising both citrus and avocados.

The whole picture of growing avocados in Central California, therefore, boils down to one major problem—variety. A good quality, frost resistant, fall-maturing variety would certainly get the red carpet treatment in the San Joaquin Valley. Maybe we have been overly optimistic in thinking such an ideal variety could be brought from Southern California and adapted to our climatic and soil conditions. Perhaps that variety will yet appear.

An avocado variety plot was established at the University of California Lindcove Field Station near Exeter this year. The primary purpose of this experiment is to establish all promising fall maturing varieties for evaluation and their adaptability to Central California. For those growers who are bound and determined to make this industry a success in spite of adversity, we hope that a suitable variety will be found to justify their pioneering.