

LINDCOVE FIELD STATION AVOCADO VARIETY TRIALS

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Lindcove Field Station in Tulare County was established 13 years ago when it became evident that the central San Joaquin Valley was destined to become the major orange-producing area in California. The station is designed to help solve many of the problems facing the citrus industry in that area. Improved varieties, rootstock testing, tree spacing, insect control and disease investigation in addition to many other research projects are oriented to citrus growing in the San Joaquín Valley. In addition, "Mother Trees" are under a continuing testing program as budwood sources for the State of California Bureau of Nursery Service Budwood Certification Program.

Located on gentle hillsides at the western slopes of the Sierras the Lindcove Field Station covers a total of 196 acres. The University of California purchased 153 acres and 43 were donated by the citrus industry. It is located between Exeter and Lemon Cove near the community of Lindcove.

The soil at the station is mostly of the San Joaquin series in addition to areas of Hanford and Vista series. Minimum winter temperatures are warmer than most citrus groves in the San Joaquin Valley.

In 1967 an avocado variety project was initiated at the field station. It was then evident that, although still very small, avocado acreage and production in the San Joaquin Valley was growing. The Agricultural Extension Service in cooperation with the Department of Horticultural Science, University of California, Riverside, initiated the project for two purposes. The first is to evaluate old and new avocado varieties as to their growth habits and adaptability to Central California climatic conditions. The second involves a study of fruit characteristics, especially in relation to time of maturity, quality and production.

The avocado industry in Tulare County is still small but growing in 1972, with over 600 acres planted in Fresno, Tulare and Kern Counties. Two fall-maturing varieties, Zutano and Bacon, are most widely planted. These varieties are marketed at a time when short supplies of fruit are available from Southern California. The Hass season is at an end and the Fuerte season has not yet begun when the central San Joaquin Valley avocados are mature, about a month ahead of the Southland.

The San Joaquin Valley is considered to have a marginal and almost hostile climate to avocados. Both cold winter temperatures and long hot summers present difficulties to both trees and fruit.

Both the Zutano and Bacon are satisfactory varieties in some areas despite the fact that each has its faults. The Zutano is not as frost resistant as the Bacon and can be called only marginal in quality. The Bacon, on the other hand, is quite frost resistant and has

good quality fruit; however, it is only a light producer in almost all areas. Another variety, the Susan, is planted in a few locations and is still being evaluated. So far it is shown to be an alternate bearer and may mature a little too early to be picked at the ideal marketing time.

Finding the ideal variety is probably the biggest problem facing this young industry. Mexican race seedlings are seen in back yards throughout the area. However, the thin-skinned fruit produced on these trees is not of marketable quality. One must believe that somewhere there is a variety able to withstand the hostile climate of the San Joaquin Valley while at the same time producing good quality marketable fruit. Are there any old Southern California varieties still in existence that would qualify? Are there any new and as yet untried seedlings that would prove to be commercially acceptable? All possibilities must be tried. With the establishment of the avocado variety trial at Lindcove Field Station, all possible fall-maturing varieties from California and other avocado-producing areas in the world can be screened.

Experience to date has shown that fruit characteristics in the central San Joaquin Valley are different from the same varieties grown in other locations. Therefore, each variety, old and new, must be checked. Varieties discarded long ago because of undesirable characteristics in Southern California may prove to be entirely different in quality, appearance, time of maturity and fruiting habits when grown in the San Joaquin Valley.



Figure 1. Proping Zutano trees in the older test block to prevent fruit from breaking limbs.

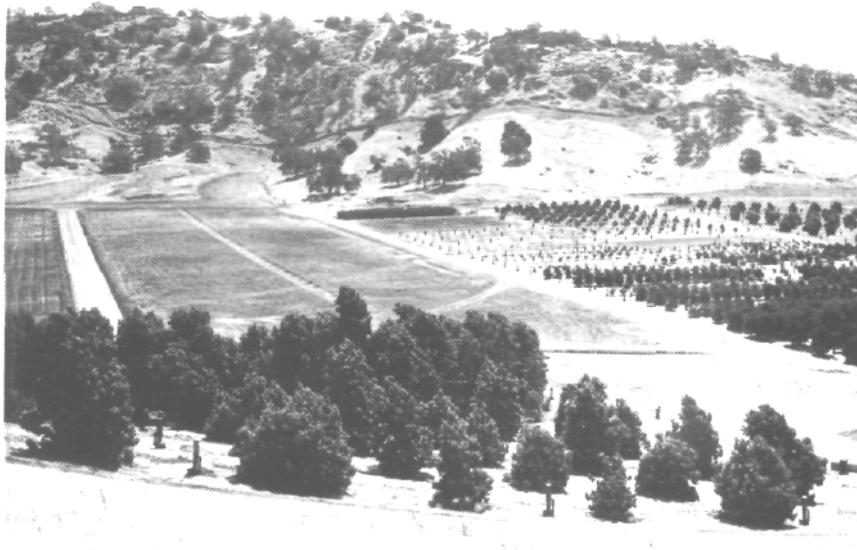


Figure 2. Part of avocado variety planting with long-term citrus virus indexing experimental trees in background.

Nearly 50 fall-maturing varieties and unnamed seedlings showing promise have been established at the Station. In addition to the variety block, acquisition of one and one-half acres of 10-year-old Bacon and Zutano trees two years ago now allows for additional trials to be performed with producing trees on the station grounds. These trials include pruning, topping, girdling and other management practices under San Joaquin Valley conditions.

Although avocado plantings will, in all likelihood, not expand on the station beyond their present scope, it is anticipated that these trials will continue for many years. Avocado variety trials will play an important parting the station operation because of the seemingly endless supply of old and new varieties and seedlings that can be observed and perhaps utilized by the slowly growing industry in the central San Joaquin Valley.