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THE AVOCADO SITUATION IN LOS ANGELES COUNTY

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The bearing acreage of avocados in Los Angeles County has remained fairly stable over the past few years. The 1958 acreage is approximately 2400 which represents about 10 per cent of the total in the state.

The majority of the avocado groves have been unaffected by the urbanization movement in this area. A large percentage of the acreage is located in the La Habra Heights - Whittier area where zoning regulations and the hilly nature of the terrain have thus far prevented any loss of grove acreage to concentrated housing. Slightly more than 400 acres are located in the north San Gabriel Valley from Monrovia eastward through San Dimas. A portion of this latter acreage is in a rather vulnerable position for subdivision in the near future in that it is planted on flat ground and generally adjacent to recently urbanized areas.

The general stability of the county avocado acreage can be attributed to the very high percentage of estate-size plantings. These will generally vary in size from one to ten acres. A great many of these estate-size plantings are maintained as a supplementary income source or as part-time farming operations. The additional income from avocado production plus the esthetic beauty of the trees themselves have been a great factor in maintaining the avocado acreage in Los Angeles County.

VARIETIES

The most common variety in the county is still the Fuerte. Inconsistent production has been plaguing this variety, except in certain isolated locations, and it is gradually being topworked to more satisfactory varieties. Most of the miscellaneous varieties are also being topworked to the more productive Hass, Zutano, or Bacon depending on location. Bacon is the most desirable variety for the colder locations and also offers some resistance to lime-induced iron chlorosis problems, which are quite prevalent in the La Habra Heights area. The Zutano has generally proved to be the most productive variety for the San Dimas - Glendora region. The Hass variety has proved to be a very consistent producer suited to all warm, frost-free areas of the county such as the La Habra Heights area.

ROOT ROT

Without doubt the biggest cultural problem of avocado growers in this county is that of avocado root rot. At least 20 per cent of the groves in the La Habra Heights-Whittier

area have root rot infections. Most growers thoroughly understand the nature of the disease and are taking measures to isolate infected areas and prevent further spread. The best general practice, where infection exists, is that of maintaining the soil moisture at the lowest possible level short of tree wilt. This practice has a tendency to reduce the activity of the water-mold type fungus involved, thereby preserving as much of the root system as long as possible. Undoubtedly this practice will cause a great loss in fruit production but the loss is the price of reducing the rate of spread of the disease.

In trying to contain root rot infections and maintain some production on diseased trees, the question arises as to how to maintain the best compromise in soil moisture for the best fruit production together with low fungus activity. To obtain some information on this problem a plot was set up in a known root rot location on the Loren Mead property in La Habra Heights. In cooperation with Dr. Albert Marsh, Extension Irrigation Specialist, Riverside, and Mr. Robert Burns, Extension Field Technologist, Riverside, the Los Angeles County Farm Advisors Office installed 12 tensiometers at four tree locations. The instruments were installed at 1', 2', and 3' depths at each tree. Three of the trees were infected with root rot as determined by culture technique in 1957 and 1958 and were to receive no irrigation. The fourth tree was not infected, also determined by culture, and was to be irrigated as required. This plot was established in October 1958. Soil suction values, as determined by the tensiometer readings, have remained in the dry range (70-80) on the dry trees at both the 2' and 3' depths for the past six months. Except for short periods of time following rainfall the 1' depth readings have also been at or near this dry range. Visual observation of the tree tops from time to time had not indicated stressed conditions until about the first of April, 1959. At this time the dry trees showed only slight stress symptoms not obvious until compared with the irrigated tree. Fruit production and sizes on the dry trees appear to be less than on the irrigated tree. Harvest records will be obtained from all trees involved for a comparison of fruit size and production.

Possible root rot resistance in Duke seedlings is also being checked in Los Angeles County. With the cooperation of the Experiment Station at Riverside five known root rot trees have been inarched with Duke seedling trees. This procedure, if successful, will produce a new root system from the Duke trees to support the old top. The actual resistance in the Duke trees is unknown at this time. The method used on the last three trees involved was the Serr method, which leaves the top on the seedling inarch tree. Better grafts have been obtained from this latter method because the top has been left on which tends to maintain live wood on the seedling tree at the graft junction. Results from this type of treatment will not be evident for several years and should be considered strictly experimental at this time.

The possibility of replacing root rot trees with some other productive plant is rather narrow. Citrus probably offers the best chance of paying some return for the cost involved in its care. Lemons have been used to some extent as a replacement crop and generally have produced excellent crops of high quality fruit. There has been some interest in the mandarins, or tangerines. The small tree size of this citrus species will allow them to replace large avocado trees on a two for one basis. The main problem with the tangerine is that little is known regarding the proper varietal choice for the avocado growing locations. An effort is being made by the Farm Advisors Office to

obtain several varieties on different rootstocks for trial plantings within the county. An overall problem in using any form of citrus as a replacement crop in the hilly, terraced areas is the difficulty of handling the necessary pest control operations. Terraces are narrow and little if any turning space is allowed. A hose and hand gun application will prove to be the only solution but more costly and less efficient.

In summation, the avocado industry in Los Angeles County has a rather stable acreage which is plagued by root rot and its accompanying problems. The producing varieties are gradually being limited to those that are the most consistently productive through a continued topworking program.