

Notes on Avocados in Florida

Dr. E. R. Parker

University of California Citrus Experiment Station, Riverside, Calif.

An informal talk presented to the Avocado Section of the Farm Bureau at Whittier, April 1, 1938

A visit to Florida during January, 1938, afforded an opportunity to see at first-hand some parts of the avocado industry of that state, particularly in regard to the conditions under which avocados are grown and the cultural methods which are employed. Through the hospitality of several research workers and growers, it was possible to see many interesting things in the short time available. Although the observations are inadequate for a critical report, they may be of interest.

There are three geographical regions in which avocados are produced in Florida. The district of least commercial importance is along the east coast between Fort Pierce and Miami. There, avocados are produced in small plantings for home or local consumption. The trees generally are not over fifteen years old and their planting has followed the development of coastal resort cities. The soil is typically sandy close to the coast, but not far inland it is underlaid by impervious clay, which limits the growth of trees. Damage from hurricanes has occurred in recent years but the trees have recovered rapidly from such breakage as occurred. There is now considerable interest in windbreaks in that area.

DADE COUNTY—FLORIDA'S AVOCADO CENTER

The principal commercial avocado area is south of Miami in the south coastal area around Homestead. In this area about 3,000 acres are planted in Dade County. The soil there is of particular interest. In general, it consists of about eight inches of loam over an oolitic limestone. The surface soil may be neutral to quite acid, and the limestone alkaline. Trees in general develop shallow root systems on top of the limestone. Although most avocado plantings are less than twenty-five years old, it appears that the trees do not obtain great size. They are usually planted 25 x 25 feet, sometimes with an extra tree set in the center of each square. Like the east coast, this region has been swept by hurricanes, resulting in tree breakage and also in upsetting of trees on the shallow soil. When upset, most of the root system remains intact and carries the surface soil with it. When the trees are righted by means of a derrick and cable, they seem to recover rapidly. Little or no artificial pruning has been done. Satisfactory yields of fruit are apparently dependent upon the choice of varieties and attention to cultural details, including adequate fertilization.

The third avocado region lies along the southern part of the central Ridge of Florida. In this area there are several commercial avocado orchards. Like the citrus industry in that

part of the state, the plantings are young. Few trees are more than fifteen years of age. Many conditions appear favorable for fruit production. The soil is very sandy, and is comparatively deep on the higher elevations. The topography is rolling and relatively warm locations exist. Well-cared-for avocado trees seem to grow rapidly to a large size. Although some are planted 25 x 25 feet, others are planted 36 x 40 feet.

CULTURAL PRACTICES IN FLORIDA

The cultural practices in use vary somewhat in the three areas. In the coastal and southern areas there is a good deal of interest in windbreaks. The tree most frequently planted for that purpose is *Casuarina equisetifolia*, which is a very rapid grower and makes a dense hedge of moderate height. Although very shallow cultivation is employed in all areas, there is a tendency to eliminate entirely the working of the very shallow soils of Bade County. In some orchards there the weeds or covercrop are merely mowed or broken down with a drag. Since the surface soils of all districts are light, very light tractors and tools are used. Fertilization usually follows the methods used with citrus trees, but some growers apply a larger quantity to avocados than to citrus. Fertilizers containing nitrogen, phosphoric acid, and potash are used. Usually two or more applications are made each year. Certain of the minor elements are commonly applied in the fertilizer program. Summer covercrops are almost universally grown. These are usually of *Crotalaria* or of volunteer growth. Other sources of organic matter are not available in quantity.

Propagation methods differ from those used in California. Seeds are ordinarily planted in wooden boxes 4x4 inches by 12 inches deep, standing with open bottom end on sandy soil. When the seedling is about 10 inches high, it is grafted, using a side graft of the desired scion wood. Either rubber bands or Parafilm is used for tying. After the scion is well established, the tree is removed from the box and set in the orchard. In topworking, one method involves the cutting off of the main branches in November. Since the trees grow all winter the new shoots may be ready for budding in January. Another method involves cutting back in January and the immediate insertion of a graft into a sawed cleft. After the stump has been painted with wax-paper, a collar is placed around it, which is partly filled with a mixture of sand and moss. Very soft terminal shoots are used for scion wood.

COMPLEX VARIETY SITUATION

The variety situation is complex in Florida. In choosing varieties for mixed planting some attention is paid to their blooming behavior, but there appears to be doubt as to the necessity of doing so with all varieties. The Collinson variety, however, has no normal pollen. Its yield is erratic. The San Sebastian also is deficient in pollen. In choosing varieties, the susceptibility to disease is also very important. Of great importance also in this connection is scab (*Sphaceloma persia*). This fungus disease does not occur in California, but in Florida may be so severe on fruit and the appearance becomes so unattractive that the fruit is unmarketable. The disease sometimes occurs on tender shoots. Since trees which are very susceptible to scab may require 4 or 5 annual

bordeaux sprays, their resistance to this disease is very important. Another factor in the choice of varieties is the time of ripening of the fruit. Cuban fruit is allowed entry into the United States June 1 to October 1 by trade agreement, and varieties are desired which do not mature until after that time, or preferably until a month after importations have ceased. This consideration places a handicap on many of the West Indian types of avocados. The thin-skinned Mexican types are apparently not at all satisfactory, since the fruit is prone to fall about August, before it is mature. Varieties in favor, therefore, are the West Indians and Guatemalan thick-skinned, and a few varieties believed to be hybrids which ripen well after October 1. Among the varieties which are most popular in some commercial plantings are Taylor and Wagner (both seedlings of Royal and upright growers), Nabal, Lula, and Tonnage. The Lula, a very fine hybrid of Guatemalan and West Indian avocados, is liked except for its marked susceptibility to scab. Parenthetically, it is interesting to note that Doctor H. J. Webber is growing a Lula tree at Riverside, California. He tells me that the tree is growing well and bearing heavy crops of excellent fruit at his home in Riverside. Near the resort cities of Florida the larger fruits, and fruits of earlier maturity, are apparently marketable. Among these are Eagle Rock (or Galloupe), Collinson, Pollock, and Trapp. Curiously, the Fuerte is not satisfactory in Florida since it has a tendency to shed its fruit about August before maturity, and to shed its leaves about blooming time. Hence, it produces a small crop which is said to be of poor quality.