

## Observations of Avocado Production in Florida

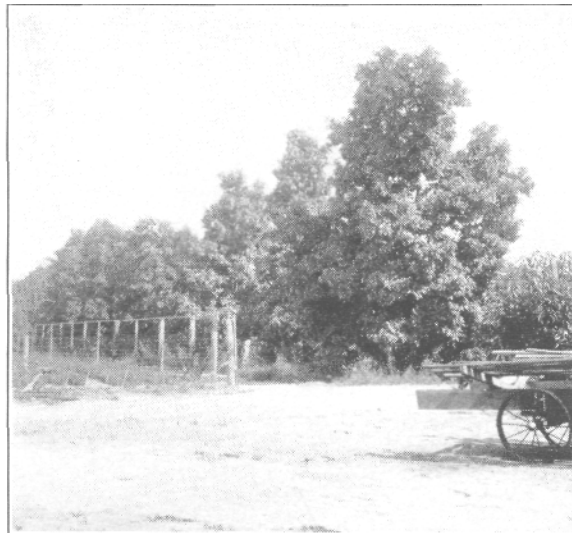
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In comparing the climate of Florida with that of California, maximum temperatures are not so great in Florida, although the humidity, especially during the growing period of the year, is much greater. The climate throughout Florida varies to a certain extent, both in temperature and rainfall. In the northern portion the average rainfall is approximately fifty inches a year, while in the southern portion it is nearly sixty inches a year. The southern part of Florida is more likely to be in the paths of hurricanes.

Florida differs from California greatly in topography, the highest elevation stated to be three hundred twenty feet. On this highest point the Bok Memorial Tower is located. The Californian is impressed by the numerous lakes in which the state abounds, especially throughout the central and north-central portion. There is said to be 36,000 of these lakes, both large and small.

The two types of soils in which avocados are grown commercially are mostly the very sandy soils of the ridge section in central Florida and the lime rock soils of Dade County, the largest avocado county in the state. Avocados have been tried in other sections of the state in soils which are very close to the water table, under which conditions they have not proved so satisfactory.



Row of "Taylor" Avocado Trees, Ward Grove,  
Avon Park, Florida.

A very interesting comparison of the soils of Florida with those of California is the chemical reaction of the soil. The surface soils of central and northern Florida have a very acid reaction because of the effect of the climate (a long period of rainfall combined with high humidity) in combination with a deficiency of calcium carbonate or other bases. However, in the lime rock section of Dade County the soil is slightly alkaline as indicated by the P H value.

## FLORIDA VARIETIES

The varieties grown in Florida are chiefly West Indian, Guatemalan, or hybrids of West Indian and Guatemalan. The Mexican variety has not proved so satisfactory as in California. The larger proportion of the commercial varieties at the present time are of the West Indian race. The West Indian varieties are principally as follows:

Variety	Color	Weight	Maturity
Fuschia	light green	10 to 18 ozs.	June 15 to August 15
Peterson	“ “	14 to 20 ozs.	Sept. 15 to November 15
Pollock	“ “	20 to 40 ozs.	July 15 to September 1
Simmonds	“ “	18 to 34 ozs.	July 15 to September 15
Trapp	“ “	12 to 24 ozs.	September and October
Waldin	“ “	14 to 28 ozs.	October and November

Of the above varieties the Trapp and the Waldin have furnished nearly 50% of the total production in the principal avocado county. These two varieties are still popular, especially in Southern Florida, because of their production and shipping qualities.

The most important Guatemalan variety is the Taylor, which originated from the Royal. It is dark green in color, weighs 12 to 18 ounces, and matures December 15 to February 15. This is probably the most popular variety for both southern and Central Florida. It is not, however, planted in large acreages at the present time. Other Guatemalan varieties which are being tried are the Wagner, Eagle Rock (called Galloupe in California), Itzamna, Linda and Schmidt.

The most important Guatemalan and West Indian hybrid is the Collinson which is dark green, weighs 18 to 30 ounces, and matures November 15 to February 1.

Probably the most important Guatemalan and Mexican hybrid is the Lula. It is light green in color, weighs 14 to 24 ounces, and matures in December and January.

Those varieties which are recommended for planting in both southern Florida and the ridge section are the Taylor, Lula, Simmonds and the Collinson. The Nabal is being tried both in southern and central Florida and is proving to be a good grower but has not had a sufficient trial to determine its reaction to the climate of Florida. A number of varieties which are grown in California are not satisfactory in Florida. The Fuerte, our principal commercial variety, reacts very poorly to the climate of Florida. A special effort is being made to develop varieties which will mature in the late fall and early winter. Among some of the newer varieties being observed by the Subtropical Experiment Station at Homestead are the so-called Booth varieties, which indicate a maturity of either

November, December, or January; they are hybrids of Guatemalan and West Indian races.

According to Bulletin No. 272 of the Agricultural Experiment Station of the University of Florida, there were 175,000 trees in 1934, which roughly estimated, comprised about two thousand acres. About two-thirds of the acreage or approximately 110,000 trees are to be found in Dade County in the vicinity of Homestead. Small plantings of avocados have been made in many parts of Florida.

## **PROPAGATION AND PLANTING DIFFER**

Methods of propagation vary with those of California. West Indian seed is planted instead of Mexican. The seed is usually planted in the fall, and the seedlings are ready for grafting during the winter. The young grafted tree can then be set in orchard form during the spring prior to the rainy or growing season. Florida planting of avocados in orchard form is markedly different from the methods used in California. There is considerable difference also in preparing the land for planting, as leveling is not advisable in the sandy soils of central Florida. However, considerable preparation is required in the lime rock area of Dade County. In this area, which is usually in pine forest, the trees are cut, the stumps removed, and a scarifier used to prepare the surface soil. Thus the surface is an intermixture of porous lime rock, soil, and organic matter. Holes for the trees are then blasted in the lime rock which is removed from the land and loose material from the surface is then shoveled into the hole where the tree is to be planted. The planting distances will vary according to the variety, but twenty feet apart is the average.

As the roots develop, they spread out from the loose material in which the young trees were planted, to the surface of the lime rock, making a very shallow root zone. In sections where hurricanes are prevalent, many trees have been uprooted, but because the trunks have not been torn from the roots and because of the nature of the climate, it is possible to put the trees back in place and growth continues satisfactorily.

Irrigation has been found advisable in Florida only as an emergency operation when dry periods have occurred during the winter and spring months. Water is found at a very shallow depth in the lime rock in the districts of Dade County, but in central Florida the most economical source of water for irrigation is from a nearby lake.

Because of the nature of the soils of Florida, fertilization is a regular practice, groves being fertilized usually in February, June and October. It is not only necessary to supply a nitrogenous fertilizer but also to add some form of potash and phosphorus. Limestone or dolomitic limestone is occasionally applied to groves in the ridge section primarily to reduce acidity.

Cover cropping is practiced and occasionally legumes are grown to supply organic matter. Two species of crotalaria are grown as a cover crop. Natal grass, which is native, supplies the organic matter in both central and southern Florida.

In central Florida discing is usually the practice in the early fall, with clean culture during the winter and spring. In the lime rock soils of Dade County it is precarious to disturb the roots by discing, therefore the weeds or cover crops are mowed occasionally throughout

the year.

### **WOOD USED FOR "FIRING"**

In protecting groves from frost wherever necessary, wood is the source of heat. Windbreaks which are planted largely in southern Florida, consist of Australian pine, Brazilian oak, and "Women's Tongue." Australian silk oak is used in central Florida.

Avocado growers in Florida have a number of pests to fight: (1) Avocado red spider, controlled by means of sulphur dust, (2) dictiospermum scale, requiring the treatment with oil, usually at least two sprayings, and (3) the white fly, controlled by means of oil. The diseases are the avocado scab and black spot, both of which are controlled by means of Bordeaux spray.

In packing and marketing avocados of Florida, a number of packing houses are available. The fruit packed at the plant of the Florida Avocado Exchange and sold under the name of "Flavos" is marketed by the Calavo Growers of California.

A most difficult situation involved with the distribution of Florida avocados is the importation of Cuban avocados duty free. Not only has the Cuban fruit come into the United States and the eastern markets to the amount of about eight or more million pounds per year, but it has also invaded the local markets of Florida, especially Miami, affecting local sales. In order to offset this competition with local production, an attempt is being made to develop varieties which will mature at a later season than the Cuban fruit, which, incidentally, will come into competition with the Fuerte and other varieties produced in California during the late fall and winter.