

Avocado Varieties

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In the past two years there has been a steady increase in avocado planting in South Florida and there is no longer any doubt but that avocado culture will be of considerable commercial importance in this State.

One of the most important questions to be settled in starting a new fruit industry of this sort is that of selecting the best standard varieties to plant. This is particularly true in the case of the avocado, of which there are nearly two hundred varieties growing in this country. It is very essential that as soon as possible this large list be narrowed down to a few of the best sorts and all inferior varieties eliminated.

It is not yet possible to suggest such a definite list of standard varieties for Florida as many of the most promising sorts are only fruiting here this year for the first time. These include some, twenty or more varieties secured by Mr. Wilson Popenoe, and others, of the United States Department of Agriculture after a thorough search through the mountains and lowlands of Guatemala and other regions. In the next three or four years, therefore, it appears probable that we may learn more about avocado varieties and their culture than in all the past years during which they have been grown in this State. No new variety of avocados can with safety be planted extensively until it has been carefully tried out for each locality, and prospective, growers of limited capital should keep this fact in mind. On the other hand small test plantings of the most promising varieties are highly desirable. The avocado nurserymen of Florida as a class are encouraging the development of the industry along conservative lines, and several of them are conducting, at considerable expense, experiments of greatest value to the growing industry. A number of individuals, aside from the, nurserymen, are conducting valuable experiments with avocados. Among these may be mentioned Mr. H. P. Johnson of Fort Myers, who is carrying on a very large test with avocado varieties which promises to be of immense value to South Florida.

While, our knowledge of avocado varieties is still far from complete, there are some varieties which have been sufficiently tested to show that they are valuable for commercial planting. It is my purpose, to sum up briefly our experience with these varieties here in South Florida.

As most growers are aware, the many avocado varieties grown in this country may be conveniently grouped into three great classes or types, namely: the West Indian type, the Guatemalan type, and the Mexican type. Almost all of the avocados seen in Florida are of the West Indian type or race. The Guatemalan sorts were, first introduced here in 1912 and except for a few seedlings none of the Mexicans were grown here prior to five years ago.

WEST INDIAN TYPE.

Varieties of the West Indian type have fruits which vary greatly in size, shape, color, and season, but all have a thin skin. This type seems to have originated in the lowlands of Central America. All of the West Indian varieties are quite tender, withstanding even less cold than the common guava or the Key lime. On account of their tender nature the commercial planting of avocados of this type should be restricted to the most tropical parts of South Florida, such as the coastal regions of Dade, Lee and Palm Beach counties. Small home plantings may be made with reasonable safety somewhat farther north, and occasional trees have fruited well for many years in sheltered dooryards as far north as Orlando. In these colder sections, however, the hardier Guatemalan sorts will doubtless prove more suitable.

Trapp.—The chief West Indian variety so far developed is the Trapp, which constitutes more than 75% of all the Florida plantings. The season of the Trapp is September to December. The tree usually produces good crops, although these years there are very few Trapp in most sections, owing to a heavy rain at blossoming time. Although Trapp is only fair in quality, and the tree is often a weak grower, it is generally considered a profitable variety.

Walden.—A West Indian variety of considerable interest, which originated in Dade County. The fruits appear to mature somewhat later than Trapp and are considered higher in quality. No fruit of this variety has matured to date, except on the parent tree, but the young budded trees are very vigorous and apparently somewhat hardier to cold than Trapp.

The Baker, originating at Ojus, and the McKean, originating at Fort Myers, are other very late fall varieties of promise.

Pollock.—A summer fruit of high quality, maturing in August and September. On account of its quality it is considered an excellent home garden sort, but is too shy a bearer to be valuable for commercial planting.

Butler.—A summer fruit of fine quality which has been propagated to a limited extent. Its season is August and September, and the trees have so far been vigorous and productive.

So far in the avocado game but little attention has been paid to the selection and planting of summer varieties. Most growers have paid all their attention to the fall and winter sorts. Doubtless these late varieties will bring higher prices for some time, but as the avocado industry develops, more and more demand will result for the summer sorts as well. The avocado grower who has good varieties maturing in summer will be able to distribute his labor to better advantage, and will also be better able to secure and hold his customers than the grower who has only the late sorts. For these reasons I believe that every planting of avocados should contain at least a few trees of some good early variety.

GUATEMALAN VARIETIES.

The avocado varieties of the Guatemalan type have been recently introduced into this State and are now the center of interest among growers. In California the West Indian varieties are too tender and the Guatemalan varieties are grown instead. Here in Florida the Guatemalan varieties, on account of their late season of maturity, as well as their relative hardiness, are both interesting and promising. Guatemalan fruits in contrast with the thin-skinned West Indian fruits have a rough, leathery, or shell-like skin. They vary greatly in quality, the best sorts being equal or superior to the West Indian varieties.

In Florida the season of the Guatemalan varieties extends from December to May. In hardiness they vary greatly, but as an average they will withstand 3 to 5 more degrees of frost than the West Indian sorts. The Guatemalan varieties so far tested, however, are in no sense frost-proof. Most sorts are nearly, or quite, as tender as the lemon. Several of the recent introductions of the United States Department of Agriculture, however, were brought from the mountain tops of Guatemala where freezing weather is not uncommon. Some of these may prove considerably hardier than those, so far tested. Until further evidence has been secured on the relative hardiness of these Guatemalan varieties commercial plantings should be restricted to localities as warm as the highlands of Polk and Pinellas counties. For home planting Guatemalan varieties appear promising for trial in the most protected sections of Orange and Lake Counties. Of the fifty or more Guatemalan varieties now being tested in this State only a few have fruited sufficiently to indicate their real merit. Among these the following varieties have shown considerable promise for commercial culture.

Taft.—This variety has fruited several crops in Florida and is one of the most promising so far tried. Its season is February to April and the fruit is of good size and excellent quality. In California Taft has been included in the list of standard varieties for that State.

Taylor.—This variety originated as a seedling at the Plant Introduction Garden at Miami, Florida. Its season is January to March, and several crops have been harvested from mature trees in Dade County where it is considered profitable and promising as a commercial sort.

Fuerte.—Another promising Guatemalan sorts. On young trees the fruit of this variety has had a disappointing tendency to drop before mature, but on older trees the fruit appears to hold much better, so that it may be harvested in February and March. The quality is high and the trees vigorous, hardy, and productive. In California Fuerte is the leading standard variety. Here in Florida Fuerte has a tendency to be afflicted with anthracnose and should be sprayed with Bordeaux at blossoming time.

Among other promising varieties which have fruited in Florida are *McDonald*, a late purple fruit of excellent quality; *Wagner*, a March fruit of fair quality; *Atlixco*, a purple-fruited March variety of excellent quality; and *Solano*, a vigorous growing variety with green fruits of fine quality. *Solano* has so far matured in November, a season somewhat early for the Guatemalan type, but it is thought that the season will be later as the trees become more mature. *Collins* is a very small fruited variety hanging on the tree until April and May. It is too small for commercial planting but is high in quality, and may be recommended therefore as a variety for home planting.

MEXICAN TYPE.

The varieties of the Mexican race are the hardiest of all of our avocados. Many of them are apparently as resistant to cold as the round orange and several seedling trees of the Mexican type have fruited for years as far north as Waldo and Gainesville. Unfortunately most Mexican varieties are too small fruited for commercial trade. Some of them, however, are of excellent quality and on this account, as well as by reason of their hardiness; they are well adapted for home planting, especially in the northern citrus sections of Florida, where the larger fruited varieties are too tender. Furthermore, some of the recently introduced Mexican sorts promise to bear much larger fruits than those hitherto grown. It is possible also that very valuable hybrids may be obtained by crossing some, of these hardy Mexican varieties with standard Guatemalan and West Indian sorts.

Puebla is one of the most promising of Mexican varieties. The tree is a vigorous grower and the fruit is excellent in quality. While somewhat small (12-14 oz.) the fruit is still large enough to be commercially valuable. San Sebastian is another Mexican variety of much interest and promise, which, like Puebla, is just bearing fruit this year in Florida for the first time.

Harmon is a variety which ripens at Miami in July and August. Though small in size Harman is rich in oil and excellent in quality.

Gottfried is a large fruited Mexican originating at the Plant Introduction Garden at Miami. It ripens in September and the fruits are large and of excellent quality.

STOCK.

One of the most important problems which must be worked out in connection with this study of avocado varieties is that of the relation of variety and type to stock. Most varieties planted in Florida have been budded on West Indian stock, although there are marked indications that some of the Guatemalan varieties at least will thrive much better when propagated on Guatemalan stock. Mr. Edward Simmonds, of the United States Seed and Plant Introduction Station of Miami, has noticed, for example, that some Guatemalan varieties when budded on Fuerte make a very much better growth than where they are propagated on ordinary West Indian seedling stock. It is also quite, probable that a hardy variety will not be equally as hardy when budded and planted on tender West Indian stock as when planted on a hardy stock such as Mexican or Guatemalan.

The whole question of relation of stock to type is of such great interest that several test plantings have been started by representative nurserymen in co-operation with the United States Department of Agriculture, and it is believed that valuable definite information will be available in a few years.

In planting avocados it must be remembered that regardless of the variety the young trees must have proper care and attention. Every year thousands of valuable budded trees are lost in this State through sheer neglect. Young trees cannot be expected to thrive when planted in hot dry soil and left to shift for themselves. I know of no fruit which responds more cheerfully to good care, or which slumps quicker when neglected,

than the avocado. It is an excellent plan to cover the ground well out as far as the roots extend with a thin mulch of hay, weeds, or other similar material, which will serve to keep the ground moist and cool, and eventually add humus to the soil. Many growers use this mulching system with excellent success.

The native home of most sorts of avocados is in regions with rich moist soil, and here in our dry Florida soils the trees usually need additional water and fertilizer, especially during the first season or two after they are planted.

In conclusion it might be well to emphasize the fact that the avocado as a home fruit has no equal in regions where it may be grown. I believe that every home in the Florida orange belt should have a few trees in the dooryard for the family supply. In the most tropical localities of South Florida it is now possible to select a list of fine varieties which will furnish fruit practically all the year round, beginning for example with Harman in June and ending with Collins the following May. Even in the North Florida counties a few of the hardy Mexican sorts might be grown in sheltered dooryards. In addition to supplying valuable food these small home plantings will serve as useful and interesting test plots for each locality.