

fruit far exceeds the production, and all fruit are sold at very high prices. It can be safely said that in the present circumstances, the per tree profit on bearing lychee trees is the highest of any fruit tree grown in America.

Among the less important tropical fruit trees bearing in Pinellas County, are the Akee (*Blighia sapida*), Carambola (*Averrhoa carambola*), Cherimoyo (*Annona cherimoya*), egg fruit (*Lucuma nervosa*), sapodilla, sapota, white sapota, Surinam Cherry, *Eugenia Dombeyi*, Sugar Apple (*Annona squamosa*), Ilama (*Annona diversifolia*), and the papaya.

During the past several years, Mr. Ed S. Whitson of Clearwater has done considerable experimenting with several species of the annonas. By the use of

various related root-stocks he has been able, by grafting, to succeed with several species that have heretofore failed. In the past, the limiting factor with many species of annona seems to have been the root-knot nematode.

Commercial production of the papaya in Pinellas County is becoming an important item, but again the limiting factor is the root-knot nematode.

It would be safe to say that Pinellas County will always be studded with many private gardens and a few commercial plantings that will feature the more tropical of fruits above mentioned. The lychee, avocado, mango and papaya are now of economic importance and in the future will be more so.

THE FUTURE OF TROPICAL AND SUB-TROPICAL FRUITS IN FLORIDA

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This paper is not intended to create the excitement as the one Dr. Fairchild read in Winter Haven some ten years ago about the Bael Fruit. As I remember, some of us were going to plant 40 acres each and put the marmalade processors out of business. That is until we found out that we had to plant a sugar palm grove so a package of palm sugar could go with each fruit.

Neither do I wish to excite one to the extent of planting a hundred-acre arbor of chayotes, only to discover later that squash is better and can be grown for much less per bushel. This is not necessarily a one-man opinion, but rather a cross section from county agents, nurserymen and growers.

It is not intended that this paper should be too much on the cautious side either. Our crystal ball does not carry

us far enough in the future but that we remember the past occasionally. The most successful growers at present seem to be the ones who started small and grew with it. On the other hand, the ones who become most discouraged are the large planters who are going to do it quick and in a big way before they or their land are ready to cope with some disaster that seems to come our way—not too often, but often enough.

Many a moon has passed and much water has gone over the dam since the first mulgoba mango, the brewster lychee, jaboticabo, and many other tropical fruits were sent to South Florida to make their home. Some were not happy; others tried for a time, while many grew and bore fruit, some good, some fair; while some of it, to people who claim to like Bael Fruit and Rose Apples, was not eatable. However, I have heard some say they thought these to be wonderful.

Now that we have a good collection of

tropical fruit that we know to be good and liked by most people, what is the future of not only the fruit but of the people who will try to grow it for a livelihood?

With the methods now employed by propagators, the grower finds that he can acquire planting stock and have bearing trees on a larger scale, cutting the time element by several years and the cost for trees manifold. But the best part is that the trees of most good fruits are available.

Yes, we have many good fruits yet to come. As long as trees bloom and bees hum, we can expect at least a different fruit.

South Florida is blessed with a year-round equable climate which has permitted many of these introductions to become well established, and are today accepted as a part of the daily diet of not only Florida, but the entire United States.

Now that we have the planting stock available, a ready market for the fresh

fruit, with freezing, canning and preserving methods worked out for most of the over-ripe or fruit that will not bring top price; the big question is, where will we find land to plant a grove of tropical fruit?

There are thousands of acres in South Florida that are still not subdivided suited for growing tropical fruit. But let's go out into the rural area, leaving room between our grove and town for two pre-fab subdivisions. It is the opinion of the writer that the part-time grower with a small acreage who is using this for a supplement or hobby is now finding himself in a very profitable and interesting business.

With the enthusiasm that has been shown from coast to coast in South Florida, and many of the problems already worked out for the growers who now have many hundreds of acres planted in tropical fruits, it is the opinion of many who are interested that we are beginning to see a great industry unfold in South Florida.

THE PROPAGATION OF SUB-TROPICAL FRUIT PLANTS BY CUTTINGS, A PROGRESS REPORT

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Citrus and other commercial sub-tropical fruit plants are usually propagated by budding or grafting a scion of a desired clone onto a seedling rootstock. Since seedlings may vary, these rootstocks are not uniform with respect to scion-rootstock union, vigor, disease resistance, and other factors (1, 7, 17). Uniform rootstocks, having known qualities of scion compatibilities, disease resistance, effect on scion, vigor, etc., can only be produced asexually; that is, by cuttings, marcottage, stooling, or other

method. It is also possible to grow varieties as own-rooted plants produced asexually by the same methods.

Much work has been done at East Malling and other research stations toward the development of clonal rootstocks for the apple and other deciduous fruits (7, 18). The citron was propagated by cuttings in Italy as early as the seventeenth century, and the lemon in California over sixty years ago (2). Recently, Halma (5), Swingle and his associates (15), and others (3, 4, 8, 16) have propagated citrus and other sub-tropical fruits by cuttings, with good to partial success.

The present investigation of the root-