

## AVOCADO GROWING IN THE OKEECHOBEE REGION

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The production of avocados on the muck lands around Lake Okeechobee continues to be an interesting subject to all growers who are familiar with the amazingly rapid growth which the avocado will make on good muck. Since this rapid growth is combined with the production of fruit which in eating and shipping quality compares favorably with that of the same variety grown on other types of soil there is always the possibility that the muck lands may some day become a factor in the avocado production of Florida. It must be admitted that this importance is potential rather than actual for at this time there is practically only one planting producing fruit in commercial quantities. This is the experimental grove which was planted at Port Mayaca about ten years ago by the Mayaca Company. Production for the 1938-39 seasons was 200,000 pounds, which was probably about 99% of the total muck-grown avocado crop, so it cannot be said that the muck avocado deal is of very much importance at this time. Probably the best way to estimate the future possibilities would be briefly to review the ups and downs of this venture.

At the time this planting was made, most growers were alarmed by the way in which wild Cuban avocados were being dumped on the Florida markets in constantly increasing volume. In planning an avocado planting, it was thought best to proceed on the assumption that the government of the United States would continue to think the welfare of Cuba more important than the financial good of the Florida fruit and vegetable growers. In the light of subsequent developments, each grower can form his own opinion as to whether or not this fear was justified.

To compete on the open market with the cheap Cuban fruit would require the production of large crops at a low production cost. Although practically all commercial avocado groves on muck up to this time had been destroyed by high water before coming into real production, it had been amply demonstrated that good muck land and the avocado were natural affinities and went together like ham and eggs. Therefore, the heaviest plantings were made on muck and semi-muck soils. A check planting was made on sand land, but it was soon seen that production costs were too high on this kind of land and it was abandoned.

As the greatest hazard was high water, a system of water control was installed by means of which the water table could be held at a reasonably high level during dry weather, thereby preventing the roots from going too deep in search of moisture in time of drouth and in turn making it possible to keep the water level in times of flood far enough below the root zone to avoid damage. While this theory has not worked out at all times according to schedule, at this time it seems the soundest method of providing a reasonable degree of flood protection.

The first real test occurred in November, 1932, when the record-breaking rainfall of twenty-three inches in twenty-four hours was recorded at Canal Point. The Port Mayaca rain gauge only showed 14.4 inches, practically all of which fell in eight hours, but for a while we had more water than we knew what to do with. There was a fairly heavy loss from drowning in some blocks, but the majority of the planting came through in very good condition. This was a freak rain, and occurring when it did, it was a puzzle to all who saw it. But time solves all mysteries, and from recent articles in the newspapers, it seems entirely reasonable to think that this rain was very probably the result of an unadvertised visit by Miss Lillie Stoot and a spell of sitting on the shore of Lake Okeechobee.

In 1933 a full-grown hurricane, or tropical disturbance as they sometimes are called, struck Port Mayaca, and after it was over the avocado grove was a mess. Unfortunately, most growers know only too well what a heavily fruited avocado looks like after a few rounds with a tropical disturbance. More because it is an old Florida custom to go around after a storm and set up the trees than because we thought the trees would live, we propped up as many blown-over trees as we could and let nature take its course. Probably mainly from contrariness, the trees staged a rapid comeback and in a year's time began to look like a grove again.

It had always been a question as to just what would happen to avocados on muck land, which is naturally cold, when the inevitable freeze finally got around to paying us a call. A partial answer was had during the cold spell in 1934. Defoliation ranged from about twenty per cent to 100 per cent, and some of the weaker trees were killed by the shock, but actual loss among healthy trees was negligible. Even the worst defoliated trees put out a normal growth and bloom that spring and a full crop for the amount of bearing wood was harvested. With the generally short crop in Florida that season, prices were entirely satisfactory.

But three major disasters in three successive years was rather discouraging, and it began to look like the avocado might be too delicate for this rough country. As practically no difference could be seen between trees which were regularly fertilized and those which were given none, a "Treat 'em rough" policy was adopted to see just how much care was really necessary. All fertilization was discontinued, no spraying done for years at a time, and cultivation reduced to mowing of the weeds and cover crops when they got too high. For several years the trees continued to thrive and produce regular crops. The quality of all scab-resistant varieties was excellent, generally bringing a premium in the markets, but the less said about the appearance of such varieties as Winslowson and Lula, the better.

For the past two years there has been an increasing loss of trees which sickened and finally died from no apparent cause. At first this was ascribed to a belated effect of some previous high water, but as time went on this explanation began to look very illogical. It simply did not make sense that a flood could leave a tree apparently entirely uninjured for several years and then kill it by some kind of long-range time-fuse arrangement. By this time, acute symptoms of zinc, copper and manganese deficiencies had showed up on the bearing orange trees which were interplanted with the avocados. When these elements were supplied in a nutritional spray, a prompt and entirely satisfactory recovery was made. We now think that over the past five years our tree loss has been

less than was thought from flood, and that a great deal of the mortality could have been avoided by proper attention to the supply of minor elements. If an orange tree cannot produce more than a few good crops without exhausting the available supply of metals, it is hardly reasonable to expect an avocado tree to continue heavy crops indefinitely without running into the same trouble. There is very little information on minor element deficiency in avocados on muck, probably because so few groves have ever lived long enough to develop this condition, but the grove is being given the same spray treatment which would be given citrus to supply these elements.

As far as I know, no commercial plantings of avocados are definitely planned at this time on muck soils. Expansion of acreage at Port Mayaca is under consideration, as this grove has been profitable, but more definite information as to this minor element phase is wanted, also there is still a little uncertainty as to just what varieties to plant. Given proper location and adequate water control, which is not at all prohibitive in cost, and if I had to depend on growing avocados to keep the wolf from the door, I would rather take my chances on the muck than anything I have as yet seen in Florida. However, there is one point to be borne in mind. When an avocado tree is planted, it is usually looked upon as a permanent improvement, and supposed to be there for the rest of your natural life. In a muck planting, I would rather figure on a replacement basis, more like a peach orchard than an orange grove, for instance. I would plan on a complete replacement every ten years. If conditions were favorable, you would be that much ahead, but as quickly as a tree will come into bearing, it should be profitable on a ten-year life expectation. This would also permit a grower to keep up with the latest styles in varieties.