Methods of Handling Citrus Groves

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Mr. President, Ladies and Gentlemen:

When our President notified me a few days ago that I had been placed on the committee to report on "Methods of Handling Citrus Groves," I began to wonder what I could say that would be of interest to members of the society; and as I pondered the matter, I was struck by the similarity between "Methods of Handling Citrus Groves" and the "Negro Problem," as expressed by a northern lady who had come to live in the South. After she had spent several years trying to train colored servants to work according to her ideas, a friend came to visit her who had been a classmate in a northern college where they had often exchanged views on the weighty problems that are considered at such times. After this friend had been in the South for a few days, she asked her hostess: "What do you think now of the negro problem?" To which the hostess replied: "Which problem? There are as many problems as there are negroes." There seems to be as many methods of handling citrus groves as there are growers.

At each meeting of the society, some phase of the subject has been discussed, and I do not know that I can present any new ideas, but will try briefly to make some comparisons between groves on low hammock lands in the northern part of the citrus belt, and those grown on higher soils.

Citrus fruits are grown in Florida on various types of soils. By far the greater percentage of groves are on pine land, of which there are several kinds, as shown by the soil maps. A much smaller percentage of groves are on hammock lands, where the palmetto and hardwoods grow.

The type of grove which I wish to discuss is the kind that is planted on low, or cabbage hammock, so-called because of the abundance of cabbage palmetto trees. In this latter type, apparently successful methods differ—in certain respects, quite materially from methods practiced in other types of soil.

In the first place, when preparing ground to plant citrus trees, instead of clearing off all the timber, it seems best to leave quite a little standing timber, especially palmettos, but also some live-oaks, hickories, red bays and occasionally magnolias and sweetgums, but these two last named are not considered as favorably as the others, since their roots are thought in some cases to rob the citrus trees more than the others. The object in leaving standing timber is to afford frost protection and to give partial shade. This protection is of little or no benefit in the case of a freeze with high wind, but on still nights with falling frost, the standing
timber is a great protection and the shade of these trees on the morning after a cold night is very advantageous, because it enables the citrus trees to thaw out before the sun strikes them.

The sour orange is frequently found growing wild in these hammocks, surrounded by more or less dense jungle growth, and the fruit on such sour trees is usually of deep color, smooth and very bright and pretty. This condition seems to be the natural home of the orange, and for that reason, also, it is thought unwise to remove all the timber, but on the contrary that enough should be left to make conditions as nearly like Nature provided for the wild trees as practicable.

In low hammocks, citrus trees are usually planted much closer together than is the custom on pine lands generally and one hundred trees to the acre is about the standard. The native wild sour stock is almost universally used.

Very little, if any, cultivation is practiced, especially if marl happens to be found outcropping or near the surface. Because of the standing timber, it is difficult to use implements for cultivating, and hoeing is generally resorted to for whatever cultivation is deemed advisable.

Under these conditions, the root-system is not as extensive and trees do not grow as large, nor bear as much fruit per tree, as trees of the same age on higher and more open soils; but the fruit, especially the orange, is of better quality, flavor and texture and usually sells for enough more to make up the difference in yield, and it is quite probable that an acre of low hammock grove nets the grower quite as much on an average, or perhaps more, than an acre of grove on higher land, when comparison is made between trees of the same age.

Rust mites are seldom found in low hammock groves which are shaded and it is usually not necessary to spray for bright fruit; but, on the other hand, white-flies seem to thrive fully as well, if not better, in low hammock groves than elsewhere. The usually more moist conditions prevailing in low hammock-shaded groves greatly assist the growth of fungus parasites of whitefly.

The same moist conditions referred to not infrequently assist the development of fungus diseases, such as withertip and stem-end rot, and consequently necessitate more pruning than would perhaps be necessary in groves which are more open and on higher, better drained soil.

Fertilizing a low hammock grove is a matter which requires careful thought. Ordinarily, low hammock citrus trees will do best with a little less ammonia than is usually given to groves on other types of soil, but the grower is sometimes tempted to try and force his trees to see if he cannot make them bear more fruit, and in such cases it not infrequently happens that injudicious or over-feeding is apt to result disastrously, because trees on this type of soil are apparently quite susceptible to the dieback disease. However, if not over-fed the danger of dieback is not great.

When it comes to packing, the low hammock fruit is very tender and has to be handled very carefully. This fruit is easily bruised and if the greatest care is not exercised may reach market in a rotting condition; but when properly put up, and
arriving sound, the prices received are usually very gratifying and compensate for many of the disadvantages encountered in production.

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Perhaps it would not be out of place right here to mention an experience which was had this spring in what was, to us at least, an unusual method of grafting. We had occasion to move quite a lot of sour orange seedlings that would caliper from an inch to an inch and a half just above the ground. We wished to have these sour seedlings worked over to sweet orange trees as quickly as possible, and so, after receiving permission from the Nursery Inspector, we took them up, hauled them forty miles, and on February first and second (just before the recent freeze) cleft-grafted and then planted seven hundred ninety-seven of them. The process was accomplished by first sawing the sour tree off about an inch above the collar, then splitting the stump with a cold chisel and inserting one sprig graft having three or four eyes which had been beveled on two sides, care being taken to see that the cambium of the sprig was placed so as to unite with the cambium of the stump. The cold chisel was then removed and the stump gripped the graft quite firmly. The grafted stump was then carried away and planted, using plenty of water to pack the roots firmly. Then a bank of sand was drawn up all around, until only the tip of the graft protruded above the bank—but on receipt of the freeze warning, the grafts were then completely covered with sand. After the cold was over, enough of the soil was removed to allow one or two eyes of the graft to be exposed.

On April 12th, examination showed that of the 797 grafted stumps which were planted just before the freeze, 210 grafts, or 26% had died; 261 grafts, or 33% were alive but had not started; 326 grafts, or 41% had made growth and several of them had grown more than thirteen inches. Nearly every growing graft had put out anywhere from one to a dozen bloom, and one graft in particular had over a dozen open bloom at one time. In many cases, after bloom petals had dropped, young fruit had set and grown as large as a pea. It is not expected, however, that any of these young fruits will last to maturity; but the instance is mentioned here as indicating that grafts cut from bearing trees may be expected to bear reasonably early.

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**DISCUSSION**

Mr. Lamont: In regard to the discussion of handling citrus groves, I would like to learn the best method of handling a grove that is in solid Bermuda grass to get the full benefit of the fertilizer. The grass is so dense that you cannot use a disc harrow.

Mr. J. A. Stevens: We had some patches of Bermuda grass, but never worried much about it. In cases of severe drought the trees seemed to do a little worse, but not much. We put on the fertilizer as usual, perhaps a little more of it. The grass probably took up some of it. I never tried to get rid of it, because, as Mr. Painter used to say, the best way to get rid of Bermuda grass is to move away from it.
Mr. Brown: That is one of the least of my troubles. I would say that where we have a heavy sod in Bermuda grass in our grove, if we can give it plenty of water and plenty of fertilizer, we have the best fruit in those spots. We put the fertilizer on and let the rains take care of it.

Mr. H. B. Stevens: We have a grove like that and just mow the grass and it stands the drought better than any grove we have. But if we try to plow it, we find we have the most trouble.

Mr. Mead: I would like to ask if anybody has ever tried checking it by using kudzu vine.

Mr. ———: Which is the worse? (Laughter.)

Mr. Felt: Natal hay will drive it out.

Mr. Hume: I have had kudzu on a ditch bank put in seven or eight years ago and tried to dig it out. It is there yet. (Laughter.)