

## A Correspondence Survey of the Florida Avocado and Lime Industries

**James G. France**

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President Christie, members and friends of the California Avocado Association: Some months ago, at a meeting of your board of directors, I presented some facts on the "cold snap" in Florida last January, contained in a letter from a friend in Miami. This first-hand information interested the board, and President Christie, being somewhat hard up for program material for this meeting, suggested that I present it to you at this time together with additional information that I could obtain by further correspondence. I was very glad to do this as it seemed rather an easy way to prepare a talk. Imagine my surprise when I received the advance copy of today's program and found that I was scheduled to make a talk on "The Status of the Florida Avocado Industry." I have a reasonable pride in my information on the Florida Avocado industry from my personal observations made four years ago and subsequent contacts with Florida avocado growers, but not to the extent that I would presume to speak with any degree of authority on the "present" status of the industry. I therefore took the liberty to change the title of this paper to the one you now have on your program, and will let the Florida growers speak for themselves. Some of my correspondents were willing to be identified with the information they furnished, but others preferred not to be quoted directly. I have therefore omitted all names from the context but will append them at the end of the paper.

It has been something of a problem to know how best to present the material I have obtained for you. I am sure you would find the complete file of letters interesting, but neither time nor space will permit of this. I have therefore endeavored to pick out the most interesting and less repetitious portions to present to you.

I have attempted to group the information in the letters under subheads but have not been completely successful, as some of my correspondents wandered a bit.

### **Results of Cold Snap**

Under date of January 30, 1940:

"We have just experienced a very bad freeze. South of Miami there is no orange or grapefruit damage but I understand up the state it is over 50% to the fruit. Tomorrow we are starting on a tour of inspection over the citrus belt and hope to get some idea of the damage, as we have around 10,000 boxes of citrus yet to move—mostly oranges.

"Damage to avocados is confined to scorched leaves, and I don't believe is near as bad as the freeze in 1934. Right at this time I would say that our crop will probably be cut some 25%. Yet it will take time to tell definitely. So far as avocados are concerned, it looks as though this freeze differs from the one in 1934 to the effect that in 1934 the

damage to the trees was confined to the part of the tree some 10 feet above the ground, and this time leaves seem to be scorched all over the trees in some groves. Frank Rue, who furnished some twenty thousand bushels for us this season, has practically no damage. Mrs. Krome has a lot of leaves burned, but I don't believe there is any damage to the main part of the trees, yet it's hard to figure whether or not she can get any kind of a crop this year as they are scheduled to bloom pretty soon. I have made two surveys— One yesterday and another today and today the damage shows up just a little worse than yesterday especially on mangoes. I don't believe there is any damage to the mango trees themselves, but leaves are burned and they were in full bloom, and I believe 90% of said bloom is killed. Some feel, like I do, that they will probably put out another bloom, as they are inclined to have three or four blooms during the season.

"The temperature was 27° at my home at seven o'clock Sunday morning and never got above freezing until around ten o'clock, and it stood at 32° Saturday night at ten o'clock. I understand the temperatures went to 25° in the glades, and the loss to tomatoes, beans and potatoes, as well as the other vegetables, is 100%, with the exception of what small plants could be covered with dirt. There are several thousand people out of work and quite downcast.

"It looks to me as though the trees that were in good condition stood the cold much better than the others. All in all, I would say the damage is light to avocados, mangoes and limes, but there is damage."

April 8, 1940:

"With reference to the recent freeze, would state that those who were not prepared to fire their groves suffered a considerable loss, which will, of course, affect this year's crop, but they are expecting to have the trees in good shape for the 1941 crop. Those who are more favorably located are reporting that they had very little damage and that the trees are blooming and setting fairly well. Some have a very heavy bloom and seem to be setting excellently. Those who were able to fire their groves did not lose a fruit, and the trees are blooming and setting extra heavy crops.

"First off, about the freeze. It hit the avocado growers throughout the state pretty hard. Although the Sub-Tropical Experiment Station here recorded temperature of only 27 or 28, in their standard box, actual ground temperatures were considerably lower. At Coral Reef Nursery it went to 26 for a short time, and at Homestead I know of three observations of 22 and 23. And from the looks of our place I can believe it went that low. We seem to be in a cold spot, though why I don't know. Damage is very spotty; we have some Trapps in full bloom now, while others are killed to the ground. I'm sorry to say that there are more of the latter than of the former. Of course, what you're most interested in is the prospects for the next couple of years. George Hodgkin, in a very amusing paper to the Horticultural Society, referred to his crystal ball and ouija board before indulging in any speculation as to what the California avocado industry would do in the future, and what, with hurricanes, droughts, etc., we need a ball about the size of the perisphere to speculate about our own prospects. Moreover, I still can't tell how much damage the freeze has done; the trees are pretty slow in coming out. However, I'd venture that next year's crop will run somewhat as follows:

"Early avocados (Fuchs, Pollock, Seedlings), 15%.

"Mid-season (Trapp, Waldin, Seedlings), 15%.

"Hybrids (Winslowson, Collinson, Booths, etc.), 40%.

"Late (Lula, Taylor, Wagner, Schmidt, etc.), 90%.

"As I look over this, I realize the futility of trying to give any estimate of damage or of crop prospects, but you know about this yourself, and so I'll leave it, more to give you an idea of the damage than as a real crop forecast.

"The mango crop will be non-existent, if present indications mean anything. The freeze caught them in full bloom, and the result was ghastly. Trees at C.R.N. were killed to the second nodes, more or less, while here at Medora Grove they were killed to 3"-6" wood, and a few were killed entirely. The average throughout the section was only slightly worse than at C.R.N., although again I must add the qualification that it ranged from none to totally dead. Bloom which came out after the freeze is rather weak, and I don't anticipate much from it. Limes came through pretty well in this section. I expect we'll have a fine crop next year. Upstate, however, where there has been a huge expansion in lime acreage the last few years, they were badly hurt. We had begun to feel that our lime industry might go up there where the rest of the citrus has already gone, but now I rather think that Redlands will have to account for the bulk of Persian lime production.

"Except for limes, citrus throughout the state came through better than anyone had expected, due to better tree condition, greater dormancy, and more firing than in '34. I won't particularize on this subject, as I have no doubt that California agents have already sent you detailed reports on it."

"The recent record-breaking freeze has left the lime and avocado industry in a rather unsettled state. I do not claim to have any very definite information, and any statements I might make would very probably be contradicted by a number of people. However, I am glad to give you my ideas for whatever they may be worth.

"Our experimental grove in the Everglades, after weathering the freeze of 1934, several hurricanes, innumerable floods and various vicissitudes, seems to have taken the count from the last freeze. A number of the trees are putting out new growth, but it is too soon to say that they will recover."

"The freeze that visited the state during the last week in January was a trying experience for avocado growers. Fortunately, the greater portion of the crop had been harvested. Very little firing was done, but those who had considerable fruit on their trees and fired adequately realized a nice profit on the fruit saved."

## **Limes**

"There are a lot of young lime plantings, but I am rather pessimistic about their future and do not encourage them. Lime production will, no doubt, increase considerably. There is a new variety of mango, the Spring-fels, that appeals to me very much and I think they have a great future, but it will be several years before any volume would reach the markets. This mango has everything. Bears well, large size, beautiful color

and a very fine texture and flavor, but there are but very few available now and no young trees for sale."

"We have in this country, at the present time, two thousand acres of Persian limes, fifty per cent of which are about five years of age. They are in good condition at the present time and have a very heavy crop this spring. About the same as we had last year. We estimate that between sixty and seventy-five thousand bushels of limes will be shipped from this county this year."

"The lime industry, after proving profitable for a number of small-scale growers, has been seized upon by the promoters and a number of plantings have been made which, in my opinion, will never profit anyone but the promoters. Production is steadily increasing and distribution is already a big headache. Any expansion from now on will have to be made at the expense of the lemon industry, and that is pretty well established.

"The lime bark disease, or gummosis, continues to be a big factor in production costs. Assuming that new plantings are discontinued, I think it could be depended upon to destroy enough trees every year to offset the larger production per tree. A new strain, which has been under observation for a number of years and which seems to be immune to this disease, is now being distributed by the Coral Reef Nurseries of Homestead, and if it proves all that is hoped for, would probably drastically reduce the cost of growing a box of limes.

"I personally planted a small grove on rich land at the edge of the Everglades and got a wonderful growth and large crops of quality fruit, but have had a steady mortality from gummosis. As I see it, there are about the same chances of making a profit growing limes as there is in growing oranges or grapefruit. In each case, some of the best growers will make money and the poorer ones will lose.

"I expect production to continue to increase for the next few years, but I do not expect new plantings to be made as rapidly as in the past."

"In the case of limes, we do have something new that's pretty good. It's a sort of the Persian, patented as '**Idemor**.' You know how limes vary from type—well, this one has wandered a good way from the ordinary Persian, and its differences are all either improvements or immaterial. The tree is remarkably stocky and upright in habit, resists drought beautifully, and seems to be immune to 'lime disease.' This last characteristic is particularly important, as 'lime disease' is by far the most serious factor in producing limes here. The fruit is almost round and considerably smaller than the ordinary lime, but juice content and acid are apparently the same as in the parent.

"This pretty well sums up what I can contribute in the way of information on limes and avocados in Florida. Oh, yes—in addition to the foregoing, I should mention that we're realizing that irrigation is essential down here as well as further up the state, and growers are rapidly installing irrigation outfits. This spring has been more favorable than the preceding two, as far as rainfall is concerned, but even so we need some rain or irrigation right now. I'm starting in to irrigate tomorrow . . . And, in regard to nutrition, we find zinc a specific for some forms of 'frenching' of both avocados and mangoes. I'm told that applications of copper cure a 'die-back' condition in young avocado trees in the

Ridge section. And, under special conditions, avocados have responded favorably to treatments of iron and manganese, but we don't know much about this yet."

## **Avocados**

"There have been very few new plantings of avocados in this section for several years, however, there have been two or three young groves planted the past few months. There has been considerable topworking to Booths, mainly the No. 7 and No. 8. Our outstanding varieties today are the Fuchs, Waldins, Booths, Lulas and Trapps, with quite a few Collinson, Taylors and Winslowsons."

"Now, as to new varieties and trends in the avocado industry: Nothing revolutionary has occurred. Trapp continues to lose ground while Lula and various Guat. x W. Indian hybrids attain more importance. Since the freeze, the popularity of Lula and Taylor has increased considerably, as both varieties came through nicely. As far as the Redland area is concerned, I'm convinced that Taylors are a mistake, and some day we'll be cutting them down to work either to a summer variety, as yet undiscovered, or to a Guat. x W. Indian hybrid that will come in before the bulk of the California crops gets on the market. In this opinion I am opposed by the Experiment Station and by a good many growers, and I think, myself, that Taylor is probably a good variety for the Ridge section, but my experience has been that down here it doesn't bear enough. Schmidt, which has never been as important as some folks believe, again proved itself to be only slightly more cold-resistant than a West Indian, and I don't think it will ever amount to much. In the Ridge, the three varieties are Lula, Taylor, and Nabal. Nabal should come to be a leading variety up there. There will also be a certain amount of Guat. x W. I. crosses in the Ridge, although they will have to be planted in the more protected locations. And, in regard to up-state plantings, let me remark that in spite of the freeze I look forward to a steady increase in acreage in protected areas from Winter Haven south. W. F. Ward, at Avon Park, has what is undoubtedly the finest avocado grove in the state, principally of Lulas, Taylors and Nabals. He fired during the freeze and saved all the trees and almost all the fruit. Mr. Futch's avocados at Lake Placid were badly hurt, but no more so than some down here.

"What we need here is a good summer variety. When we get one, we'll beat Cuba at her own game. I believe I was holding forth on that when I was in California; well, I'm still of the same opinion. Right now growers are so engrossed with the hybrids and late avocados that they aren't looking for likely early varieties, but we'll get some eventually."

"The older plantings of avocados are about the same. Two hundred acres of new plantings were set out last year. Some of the older groves are being top-worked to later varieties that will come in after the Cuban avocados are off the market. Our growers are making an effort to get away from varieties that will be too much in competition with Cuba during July, August and September, as we have not been able to meet that competition, and, I presume, never will be under the conditions that now exist. The only thing we can do is propagate varieties that will come in after Cuba goes off the market. There has been more interest created in avocados the last two years, and we look for an increase in plantings as time goes on."

"In reply to your favor of April 2nd, would state that at present there is a considerable expansion of avocado and lime industry at this time in this county. Most of the top-working and new plantings being made now are Lulu, Taylor and Nabal. The Experiment Station has recently discovered the cause of ammoniation, and we are correcting the trouble with applications of copper sulphate similar to applications we are making to citrus trees. This is either done by a spray or by the use of material applied on the ground.

"At the time you were here I presume that the scab on Lulu avocados was a great problem, but we have learned to control that with the proper Bordeaux spray.

"As to the competition of Cuban avocados, it is the thing that is giving our growers most concern, and they are hoping that the tariff situation can be straightened out. With low labor cost in Cuba we are put to considerable disadvantage. In the past they have produced many summer varieties, and, as you know, the production in this county has been a steady increase of varieties which will fruit from November until about February 15th. We have thus been able to escape in this county much of the Cuban competition, but it does affect those varieties in the summer and may affect their value. Reports which I have received indicate that they are planting a considerable volume of winter varieties in Cuba

"The avocado growing industry, or racket, or whatever it is, has reached a more stabilized position. It has been abandoned by most of the promoters in favor of limes, tung oil, ramie, etc., and such plantings as are now being made are generally by growers who know what they are doing.

"Our production for the past five years has been rather uniform at about 200,000 pounds. We have found it profitable, and production of avocados here could be expanded indefinitely. It is possible that we will take advantage of what we have learned in the past and put out another grove, but this has not been definitely decided. We figure that a dollar a bushel is the necessary price to get for good fruit if any money is to be made. The markets seem to absorb large quantities at that price, and the bulk of our crop has been sold in Florida for home consumption.

"I do not anticipate any great increase in avocado production. The Ridge section will probably continue to increase for some time to come, but nothing to get excited about. The Redlands district will continue to put out some new groves, but I do not think the returns will be such as to stimulate plantings very much."

"Although I am not a member of your Avocado Association, I read with interest each issue of the Association's Yearbook. With the thought that it may be of interest to your members, I will give you my impressions of the trends and present status of the avocado industry in Florida.

"The last few years, the general trend of varieties planted in new groves and top-worked onto old trees has been away from the summer-maturing West Indian varieties and toward the fall and winter-maturing Guatemalan, Guatemalan-West Indian and Guatemalan-Mexican hybrid varieties. This trend has been influenced in part by the large imports of duty-free Cuban fruit during the summer months and by the knowledge of fall and winter varieties bearing considerably heavier than many of the summer

varieties. Susceptibility to cold temperatures of the West Indian varieties plays no small part in the trend away from their propagation.

"New plantings are relatively slow, some 250 to 300 acres being set the past three years. But this 3% to 4% per year increase is steady and will probably be repeated for 1940.

"Topworking of undesirable varieties is continuing to increase in the southern part of the state. The winter of 1940-41 will undoubtedly see a greater increase in topworking as many of the growers are discouraged at the lack of cold resistance of their West Indian varieties and such other varieties as Winslowson, Schmidt and Collinson. However, due to their reliable bearing habits and their late-summer and early-fall maturing period, very few Trapps and Waldins have been top worked. The varieties chiefly cut down for topworking are the Pollock, Fuchsia, Simmonds, Taft, Winslowson and Collinson.

"The principal varieties in new plantings and grafted as new tops in the southern part of the state are Lula, Taylor, Booth 7, Booth 8 and Hickson. In the central Florida, or Highlands, section the new plantings are chiefly of Lula, Taylor and Nabal. These are all fall and winter-maturing varieties."

The following letter from H. S. Wolfe, head of the Department of Horticulture, University of Florida, seems to sum up the general situation and provides a fitting close to this correspondence survey:

UNIVERSITY OF FLORIDA

Gainesville College of Agriculture

"April 23, 1940

"Mr. J. G. France

"1336 Bush Street

"San Diego, California

"Dear Mr. France:

"In accordance with your request, I shall try to give you something of the present situation as regards avocados and limes in Florida. Avocado plantings have increased considerably in the central part of the state during the last three years, more than doubling the acreage in the Ridge section. There have been small increases in the Redlands area, which still leads the state by a large margin, and a few plantings have been made on the west coast. The new plantings have mostly been West Indian X Guatemalan hybrids of late fall and winter season, or of Guatemalan varieties of the same season. A good deal of top-working to these hybrids has gone on in the Redlands. Lula, Taylor, and Booth 7 and 8 have been popular. These varieties were little damaged by cold this winter, whereas West Indians suffered considerably.

"The handicaps of the Florida avocado industry are largely included in two items. One is Cuban competition, which makes our heavy-bearing West Indian varieties less profitable than they would be otherwise. The other is the inability of our avocado

growers to cooperate, a difficulty which, I understand, has not been completely overcome in California, in spite of the phenomenal success of Calavo growers.

"Persian lime trees were considerably hurt in the Ridge section this winter, but lost only fruit for the most part in the Redlands area. The past five years have seen very heavy plantings and, in Redlands at least, there has been a rather unfortunate boom. Plantings have slowed down greatly this past year as the inevitable result of the lower prices which follow large crop increases without efforts to find new or increased markets.

"The Persian lime industry has several handicaps in Florida. One of these is the shipment of Mexican limes from California. Another has been the shipment of limes of poor quality by some Florida growers. Steps are being taken to assure a minimum juice content for Persian limes in this state now, and this should largely correct this handicap. Another serious problem has been the so-called "lime bark disease," or Gummosis, chiefly due to **Diplodia natalensis**. Progress has been made in understanding the etiology of this disease, but control measures have not yet been worked out satisfactorily. In the Ridge section, it has been estimated that between five and ten per cent of the trees are killed each year by this disease, and it is almost as serious a problem in the Redlands area.

"The boom in the planting of Perrine lemons seems to have about run its course. The few large plantings in the Ridge section were badly hurt again this past winter, and the many defects of this fruit are likely to prevent further developments.

"Trusting that these notes will be of use to you in your report to the Avocado Association, I am, with best, personal regards,

"Yours very truly,

"H. S. Wolfe,

"Head, Department of Horticulture."

I wish to express my appreciation to the following gentlemen for their interesting and helpful information, and make my most humble apologies for ruthless editing and rearrangement that probably makes it difficult for them to recognize even their own letters.

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