

**Proceedings of the First International Tropical Fruit Short Course: The Avocado.**

J.W. Sauls, R.L. Phillips and L.K. Jackson (eds.). Gainesville: Fruit Crops Dept., Florida Cooperative Extension Service. Institute of Food and Agricultural Sciences, University of Florida, 1976. Pages 126-129.

## **DISCUSSION**

### **HARVESTING, HANDLING, STORAGE**

**Barmore:** I would just like to make a couple of comments on the Japanese market. Their acceptance of grapefruit produced in Florida has reduced the amount that we have to dump on our own market and has upped the price of the fruit. They do like quality and they like fresh fruit. In fact, it's used as a status symbol in Japan. However, there are problems. Fumigation is required in most cases because they don't like fruit flies. Also, they are dead set against fungicides and they do test for fungicide residue, so you have to be very careful there. Florida has a problem because we cannot ship grapefruit into Japan with our normal fungicide application which we need because we have several serious decay problems which California does not have, and they can go into the market very successfully. We have to be quite careful. But it is a very good market and they will pay for quality. Grapefruit will go for \$1.50, very easily, per fruit. We're doing good to give them away over here at times. But it is a good market. Any questions for Charles Walker?

**Question:** Concerning the mango and avocado industry, is Mexico exporting to Japan?

**Walker:** To be honest with you, I don't know because those figures weren't available to me. I would hesitate to say that the avocado is exported to Japan because it's quarantined from the U.S. because of the seed weevil and if Japan is as strict as all the evidence that I have been able to gather indicates, I don't know if they would be able to export avocados into Japan. Based on this report by the Foreign Agricultural Service, there are very few avocados in that area. As for mangos, I have no idea.

**Knight:** Do we know how the avocado would stand up to fumigation?

**Spalding:** Our entomologists, I guess, should answer that, but avocados are very sensitive to ethylene dibromide which is effective against the Caribbean fruit fly. Of course, as you know, mangoes can tolerate ethylene dibromide. Now, methyl bromide is an alternative for avocados. Some of the tests that we have done indicate that avocados are rather sensitive to methyl bromide. We haven't finished those sensitivity tests. We are looking into another fumigant that might possibly be a replacement for ethylene dibromide and that's phosphine or phostoxin. It's a slow-acting fumigant that kills the flies over a period of 48 hours and leaves no residue. However, we have not finished our phytotoxicity studies on avocado.

**Barmore:** There have been some mangoes shipped from Florida to Japan. They've been air freighted and also sent by boat. The ones by air freight, I assume, made it okay, but by boat it is questionable. It is quite a distance over there and they generally do not hold up in storage as well as avocados do, but they were

fumigated.

**Yee:** Maybe one can add a little bit regarding this fumigation of avocados. We find, in general, that if we use the dark-skinned avocados in Hawaii, they will get through this methyl bromide treatment. Of all the varieties or cultivars that we have tested with methyl bromide, we just have about half a dozen that can get through this treatment.

**Walker:** There is quite a bit of discussion in the report that I have from CAB about fumigation and I think it depends on which point you fumigate the fruit. Are you talking about fumigating it before it leaves this country or when it arrives in Japan? I know they talked about fumigation facilities at Haneida Airport and I got the impression that perhaps they were planning to do some of the fumigation once it arrived there. Now, I don't know if Japan will allow that but that's the impression I got from reading the report. They were unhappy with the volume of fruit that they were able to fumigate in the facilities that they have there but they thought that this problem could be worked out whereby they could expand the facilities and move whatever volume they wanted to move through there.

**Question:** What months of the year would the United States be supplying avocados to Japan?

**Walker:** I wish I had some of my other statistics here. That really depends on a number of factors. It depends on the interplay between California and Florida production or supply to some extent. It depends on the marketing situation, which of course is affected by the supply. I think California's attitude is this: they indicate that they can develop Japan as easily and cheaply as they can develop markets on the East Coast, say Philadelphia, New York *etc.* They know that if they develop here, the chances are that Florida is going to get that market away from them anyway when we are in season because we're closer and can get our fruit there at a lower cost. I think really what they are saying is that they may as well go to Japan and try to develop that market. You know, why should they develop a market for Florida, and it's 4,000-5,000 km away anyway, so I think that's one of the reasons that they probably decided to go to Japan.

'Hass' starts about March or April and I think they can keep them for something like 3 months on the tree and they have a lot of latitude with how much they can shift their pickings, so I think they can keep it on up to as late as October. Let's say from March to October, roughly, they have some potential to export to Japan. I think it will depend on a number of marketing factors. I'm sure they feel that if they can just lower the peak of picking or peak of production, based on their marketing strategies, they can do a lot to maintain prices in the U.S. market. I don't know this to be true, but I suspect this is part of their thinking.

**Barmore:** To briefly summarize what he said, it's really when the price is right. When it's high we'll go. Or when shipping them there will complement prices.

**Balerdi:** What about the potential for avocados in Germany, Holland and other countries?

**Gazit:** I cannot say what the potential is at the time being. I believe that Israel

exports to the Netherlands and to Belgium something like 300 or 400 tons per year, which is quite low. I mentioned earlier today that only last year we passed the 1,000 ton-mark to Germany. We believe that there is a great potential both in Germany and the Netherlands, but it needs to be developed. It is waiting for us but for the time being; at least, most of our effort is being concentrated on West Germany.

**Galan:** I would like to know if Dr. Gazit knows if any country in Eastern Europe consumes avocados, *i.e.*, Yugoslavia or other countries in the socialist bloc.

**Gazit:** As far as I know, they don't import any avocados, but I have the impression that they grow, or at least are trying to grow, Mexican avocados in southern Russia. So maybe there is some consumption there but I don't know.

**Walker:** I'd like to ask Dr. Gazit what is their gross sales price, in general, for avocados sold in West Germany or France.

**Gazit:** I don't have any figures for the different countries, but I believe they are about the same. The average f.o.b. price Israel got for the last 2 years is around \$1,000/ton or \$1/kg.

**Balerdi:** Dr. Gazit, how much does the producer get for avocados in Israel? How much does it cost to produce them?

**Gazit:** I'm very sorry, but I cannot supply accurate data. The income for the last 2 or 3 years is very high. I have to add that the \$1,000/ton figure was only for the last 2 years. For many years, we were getting about \$500/ton and only in the last 5 years has the price started to go up, surprisingly, with the great expanse in export as far as volume is concerned. Many people in Israel believe that we are now at peak of the prices that can be obtained in Europe, but hopefully we may be wrong.

Now back to how much the Israeli farmer gets. The value of the Israeli pound fluctuates about once a month. I don't dare give you a number. Because I'm going to modify my manuscript, I will include the data in it. I don't have here reliable data to give you. I am *very* sorry. (Editor's note: subsequent data were not furnished by press time).

**Kendall:** We're all interested in marketing and selling more avocados regardless of the oil content. Oil content should not be used as a marketing advantage. Our primary goal is to sell more avocados.

**Mitchell:** Concerning avocado oils, there's a gentleman in Britain, Dr. David Pearson, who's doing a tremendous amount of work on the actual analysis of the oils of avocados. He's drawn up a very interesting publication on the balance between polyunsaturated and saturated oils. He reckons that the avocado has got the balance that one requires. At one end of the scope, the saturated fats, one runs into the problem of heart diseases and various other things like this. That's why the average man must get away from it. You go to the other end of the scope, polyunsaturated fats, and find that rats go down, with about 90% of them dying of cancer. Now David Pearson's thing on this is that if you eat avocados, you have more oils than you require at both ends of the scope, except in the very hot parts of the world. For the British guy and the guy in the cooler parts of the world, both

hemispheres, eat avocados but don't eat too much unless you are in a tropical area.

**Barmore:** For anyone interested in the article, I believe the one you're referring to I have listed in the "Literature Cited" section of my manuscript. It is "David Pearson. 1975. Seasonal English market variation in the composition of South African and Israeli avocados. *Journal of Science and Food Agriculture*. 26:207-213". He does a very good job of analyzing all the components of avocados—caloric value, soluble solids, total solids, you name it—it's in there.

**Walker:** I have a number of questions. I know I won't be able to get them all in so I'd like to ask what I think are the most important ones. And I'd like to direct them to Dr. Gazit. There has been a lot of work done as to what is the optimum size or the best size of an avocado for marketing. In almost every commodity I know of, the consumer wants the largest thing he can get his hands on—it seems. You know, if you talk about grapefruit or whatever else, he wants the largest he can get. I know one of the things that retailers complained bitterly about was about 3 years ago when the grapefruit people reduced the number of sizes of grapefruit they were shipping to 3—because he said that when he put them out on the produce shelf, those ladies or those consumers who come in the morning pick out all the big ones that he's selling for 39 cents each, but the lady who comes in the afternoon gets a small grapefruit and she doesn't like it. I can't understand why a small avocado is preferred to a large avocado and I'd be interested in hearing your comments on this.

I'd also be interested in hearing your comments as to how did you arrive at this optimum size. What kind of marketing experiments did you conduct? There have been some conducted by people at the University of Florida which have shown that large-sized avocados actually outsold small-sized avocados when displayed side by side when they were comparably priced. This is something that confronts our industry especially, because we do have a larger avocado.

**Gazit:** I don't believe much research has gone into it. This is simply the result of price differences you get for the sizes the public would like to buy. That's all. In other words, we haven't decided by going into very detailed research that the European public would like to have such and such a size. We send all sizes we have and we go by the, returns we are getting. Now the reason may be that avocado is considered a luxury fruit in Europe and a family would like to use it as halves. So if the fruit is too large, too big, then half a fruit may be too big for one man to eat at dinner. Also, it may be too expensive. So, this is why I believe this market prefers the medium size, I wouldn't call it small, because we have trouble marketing our small size. 'Hass' in Israel tends to be quite small and we have problems with this small fruit.

**Bersihand:** Concerning the size of avocados in the European markets, the French people don't want, don't like and don't buy big avocados. They want small fruit say 250-300 g. The big ones are too expensive and we don't eat avocados as you eat them here. We use avocado primarily as an hors d'oeuvre, not as a main salad.

**Walker:** What is your picking cost as a percentage of your total cost? Also, you

indicated that you spent quite a bit of money on developing a European market quite a bit on advertising and promotion. I wonder if you could give us some idea of how much you spend on advertising and promotion and I'd like to get some idea of what the population or per capita consumption is for the European market. You talked about the United Kingdom, France and West Germany. Could you give us some indication on this or is that private information?

**Gazit:** I didn't come prepared for this, but I remember some figures. If I remember right, in France the per capita consumption has risen to something like 250 g. In other countries, the United Kingdom, it is fluctuating around 10 (1 g per capita). In Germany, it is much less. They imported about 1,000 tons and I don't remember the population but it is about 60 g or something like that. But you can use the figures I have for imports and it is very easy to calculate.

Now about picking expense, I'm very sorry. I don't have exact data. It is available. There is no problem, but I don't have it ready at hand. I would say that we consider that you have to use about 3-4 days per ton for picking without machines. This includes everything—not only the picking, but all the supporting work being done. As an average, it includes selective picking, which of course tends to lower the amount you can pick per day.

**Walker:** Can you roughly convert that to hours? Are we talking 30 hours or 40 hours?

**Gazit:** I would think it would be 25-35 hours.

**Kendall:** Your data for imports show quite a high figure for per capita consumption in France. I wonder if France in turn distributes avocado out (exports) so as to possibly reduce that per capita figure, to bring it back down to a little more reality. Possibly fruit going to France is then being distributed to Switzerland or the Netherlands, Belgium. I wonder if that might not be a factor?

**Gazit:** According to my figures, there is no significant, I would say, export from France to other countries. There is some export but it is in the amount of 100 tons, or some-thing like that, which is not significant.

**Question:** How-much does it cost at this point to harvest and pack avocados in Florida as compared to California?

**Krome:** Here it costs between a low of about \$0.50/bushel and a high of about \$1.25/bushel to pick, for an average of about \$3.00/bushel for everything—picked and run through the packinghouse. (That's roughly \$0.02-0.05/kg to pick, for an average of \$0.12/kg through the packinghouse). It costs us about \$0.65 for a single layer, which is around 14 pounds. We charge \$1.10, I believe, to \$1.15 for the double layer which is around 29 pounds. And we charge \$1.40 or \$1.45 for a pack of approximately 38 pounds which will vary all the way from 36 to 38 pounds. These are picking and packing costs combined. (These data convert to about \$0.10/kg for a single layer pack, \$0.09/kg for a double layer pack and \$0.08/kg for a larger box).

**Balerdi:** The question is asked about the cost of water for irrigation in Israel.

**Gazit:** The cost of water in Israel is, I would say, artificial and tends to fluctuate according to political reasons. In other words, the water is being produced mainly by national companies and the price is fixed by the government. Usually, agriculture pays less than what the water really costs and urban people pay more. This is to conserve water in the cities and to enable agriculture to prosper.

Now the cost may be changed and is being changed from time to time. If I remember right, in the last year, 1 m cost about half an Israeli pound. Now if you convert it at 10 pounds to a dollar, it means that water is about \$0.05/m<sup>3</sup>.

**Kendall:** We were asked about the picking and packing cost of avocados in California and Florida. We got the information about Florida but not California.

**Neff:** We're paying between 3.5 and 6 cents per pound (7-13 cents per kg) for picking, but I don't have costs on packing.

**Barmore:** Does anybody have prices on packaging? That will have to go unanswered.

Several people have requested copies of the maturity schedule for the avocado varieties in Florida. They will be available tomorrow at the Homestead Agricultural Research and Education Center. You will meet there, I understand, to eat lunch tomorrow. If you are not going to be attending that, if you will just leave your name with me, I'll send you a copy or I'll have Mr. Walker send you a copy. There are probably several varieties that you grow in your own countries that are listed on there and you can compare your sizes and picking dates to what we use.