

Regional Behavior of Avocado Varieties

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When Mr. Arthur Christie, Chairman of the Program Committee wrote to me, he was very careful to emphasize that I was not to deliver an address but merely to lead a discussion on varieties, so, although the program as printed indicates that I am to deliver an address on the subject given, I do not intend to do so.

I might, however, open the discussion, or continue it, because we have had two splendid reports from the Variety Committees which really serve as excellent introductions to this discussion.

Preparatory to this meeting I checked back through the old issues of the annual reports of the California Avocado Association, and the reports of the Variety Committees, and I noticed quite a change in the type of report. In the early reports they began to recommend the Fuerte variety for planting; but nothing was said about whether or not it should be planted in Coastal, Intermediate, or Interior districts. There was a tendency in these reports today to classify according to climatic zones. That is a step forward. That type of classification is important as to the crops we grow here in California. We certainly can place the various products in climatic zones. In Ventura County we grow lemons, oranges and walnuts, but even in that county, which is a small county, there is quite a wide range in climatic conditions and we know these fruits vary tremendously in responses. It is no wonder that the Fuerte variety has not given us all the satisfaction that we hoped it would give us. We planted this fruit in a wide range of climatic conditions. Take the English Walnut—the Placentia thrives to perfection in the Coastal Belt but take in into the Interior, what do you have?—an unprofitable product. With the Eureka lemon or Lisbon lemon—put them into the hot interior, you have a beautiful tree and not much fruit, or if fruit is produced, it comes in the winter when fruit is not commercially profitable. So I do not think it is any wonder that we have not almost 70 per cent of the acreage in California represented as the Fuerte variety, fruiting uniformly in all these different districts.

It looks as though we are going to have to do with the Fuerte what we have done with the orange industry. We have the Valencia orange which matures during the late spring and summer and fall periods of the year and the Washington navel, which matures during the winter period of the year, with oranges available all year round. I believe that is a desirable thing to look into more-continuation of this work which Dr. Coit and Carter Barrett have presented here this morning—the importance of being continually on the alert to pick out varieties which will tend to extend our marketing periods and give us a more uniform supply. We have, of course, the Florida and the Cuban fruit to consider to enter into this picture of the total fruit supply for this country.

Preparatory toward this meeting I visited the Calavo Growers Exchange and asked Mr. Hodgkin if I could have access to his office records to secure a picture as to how the different varieties are responding in the various climatic zones. I have tabulated the data secured and this presents a very interesting picture as to the way fruiting responds under different climatic conditions. The way we arrived at this data was as follows. We took the box deliveries according to varieties, from different districts, and made symbols as to degree of delivery, or amount, "O" representing light or very nominal delivery and the "X" representing the heavy delivery. The attached table shows the behavior of three avocado varieties, Fuerte, Puebla and Nabal, in different locations in the 1931-1932 crop year. In other words, in October and November where there are "O's", the season was just beginning, with a very nominal delivery of fruit and then there was heavy production, followed by a lighter production delivery. The upper part of the table gives the total of all the deliveries of the Fuerte Variety to Calavo Growers for the season 1931-32, and the lower part, deliveries for the Puebla and Nabal varieties. I took also the records for 1932-33, because of the difference in climatic conditions, but they ran very close to those of 1931-32, with the exception that the season was a little later. In 1932-33 we had a cooler year and a later season for most kinds of fruit. We tabulated this according to different districts.

First, I want to present the total to give you some idea of what is happening with the Fuerte, in the State as a whole. Light deliveries began in October and November. There was quite a difference between the light and heavy delivery periods—rather a sharp line between the "O" and the "X". Heavier deliveries did not begin until December, extending through January, February and March and then dropped off during April, May and June. The Fuerte matured its fruit in large quantities during a period of about four months out of the year. We have, of course, eight months more to consider from the standpoint of marketing the avocado.

To present to you some idea as to how different climates respond in fruit maturity the next line in the table is Monrovia to Riverside, along the foothills, including Covina and Pomona. Light deliveries were made in October and November, and December and January were the months of heavy delivery, which is rather typical for the interior sections of the State so far as the Fuerte is concerned. Light deliveries were made in February and March. The North Whit-tier Heights district is a later district, as indicated here with heavy deliveries January to April. The growers told me much of the early delivery there is off-bloom fruits. Light deliveries were made in May.

The La Habra, Fullerton and Anaheim district had light deliveries in October and November, heavy in December, January and February, and light in April to June inclusive.

In Escondido, Fallbrook and Vista, the interior of San Diego County—the heavy deliveries were in January, February, March and April. In Carlsbad, Encinitas section, the coastal district of San Diego County, much to the surprise of myself and other people who have seen these records, the heavy deliveries were in October, November and December, which is the opposite from Ventura County, which were in March, April and May. Interior sections are usually first in harvesting and Coastal sections are later. Perhaps the people from San Diego County here today and others who have studied this problem will offer an explanation of why you have your earliest production in the

Coastal belt rather than in the Interior.

This table showing climatic responses in fruit maturity of the Fuerte may give us something to consider from the standpoint of the future—what we might expect in the way of plantings of avocados to take care of markets of this country. It has been reported to me that around 70 per cent of plantings in California are Fuerte. If we keep on planting the Fuerte and continue that 70 percent, we are building up a seasonal surplus, at least during those months of heavier delivery of that variety, and it is going to give our marketing people concern as to just how to take care of this problem. If other varieties take care of the other periods when the Fuerte is not available to even up the supply, there would be a constant curve on prices provided demand factors were equal. There has been a curve upward in prices for the months when the Fuerte is not available in large quantities. It might be possible that there are other sections in California which tend to be later which could help to extend the period of the Fuerte to advantage. From the standpoint of marketing the fruit, it would be a distinct advantage for the Fuerte season to be extended, but it is quite apparent that there are a number of months when we in California are not supplying very much fruit.

The table shows two other varieties which were included in the Variety Committee's Report as proven commercial varieties—the Puebla and the Nabal.

The Puebla matures from October to February with heaviest deliveries in October and November; the Nabal from April to September with heaviest deliveries in May and June. With the Puebla variety the Monrovia to Riverside district, La Habra, Fullerton and Anaheim districts, the heaviest deliveries were in October and November; in Escondido, Fallbrook and Vista, November and December; and in Ventura County we have just a few Pueblas, but the fruit was harvested during December, showing it is a little later in Ventura County area. The Puebla variety has certain things in its favor,—it is an outstanding yield producer in some of our climatic zones, more perhaps than the Fuerte. It does not, however, take the place of the Fuerte but it does add to and supplement it for the October and November period.

We have been hearing a great deal about the Nabal and we all are hopeful for it, but I believe we will find that with the Nabal as with the Fuerte that it will be desirable in certain climatic conditions and undesirable in others. The fruit is too young, too new as yet, to know how it will respond in all districts. We hope our coastal conditions will permit it to help make up some of the deficiencies of the Fuerte. It does fill in the period of year after Fuerte is harvested.

You will notice in the table showing the Nabal for all districts that May and June were heavy months of shipment but fruit was delivered from April to September.

It occurred to me that you might be interested in this study of regional responses of avocado varieties because it presents the picture of the problem from a marketing standpoint, and gives us a lead as to how extensive we can go in planting new varieties. The problem, therefore, is to secure varieties which will produce satisfactory commercial crops of high marketability, evening up the deliveries, so that there will not be seasonal surpluses.

I have almost made an address after all. I will now throw the meeting open to a general

discussion of the subject of Varieties, taking into consideration Dr. Colt's report and that of Mr. Barrett.

Questions and Answers

Question: Mr. Barrett made reference to the Benik being hard to grow; I'm wondering what difficulties are involved there.

Answer: (Barrett) Benik does not seem to bud quite as easily as some of the others and in a number of cases we have had under observation, the foliage has not reacted quite as vigorously as the Nabal for instance. I do not say the Benik presents any difficulties but the general impression it leaves with me, after observation on the Elliott Ranch, is that it is not quite as easy a tree to handle, but it does bear much more easily.

(Blanchard) I think one of the important things we have to consider in the avocado industry is to try to profit from mistakes of some of the other industries in this question of vigor, along with productivity. I have just made a tour of the avocado districts of this State, trying to see just how fruits are actually responding this season and grower after grower told me, "The trees are more precocious and consistent when growing on weaker soils, or when the trees are not vigorous, but eventually the trees cease to be productive under those conditions." It seems to me it is undesirable to count on such early and heavy production with weak trees. Take the lemon business,—I have been watching lemon orchards in Ventura and many of them have declined. For a number of years they did well, were healthy, but today they are through, and replaced, or being replaced. We have some other trees in the county which have made tremendous growth. They did not look as fruitful while young, but I now look at them—fine, big, healthy, vigorous trees with tremendous crops of fruit, resistant against certain diseases. I believe that one of the important things that the avocado grower should do is try to have a good vigorous tree and at the same time get production.

Question: May I inquire whether any data is available indicating how many pounds of fruit can properly be produced by a four or five year old tree?

Answer: (Blanchard) About the only accurate records I know of are in the Cost of Production Studies, carried on by Mr. Wahlberg of Orange County but unfortunately these Cost Studies do not start in with a tree from the beginning and carry over a long period of years; consequently we do not get that step by step yield. He might have, and I think he does have, some young orchards but not enough to secure this data. Now there are other kinds of fruit on which we do have information. We do have it on lemons, where we have had the actual tree production records under way since 1925 and we know how they step up year by year but unless an individual grower keeps such a record, we do not have that information. The industry is too young to have accumulated reliable data.

BEHAVIOR OF THREE AVOCADO VARIETIES IN DIFFERENT LOCATIONS
Fuerte Box Deliveries, 1931-32, Calavo Growers' Exchange

DISTRICT	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Total all districts	O	O	X	X	X	X	O	O	O	...	...	...
Monrovia to Riverside.....	O	O	X	X	O	O	...	...	...	...	...	...
North Whittier Heights.....	O	O	O	X	X	X	X	O	...	...	...	...
La Habra, Fullerton, Anaheim.....	O	O	X	X	X	O	O	O	O	...	...	...
Escondido, Fallbrook, Vista.....	O	O	O	X	X	X	X	O	O	...	...	...
Carlsbad, Encinitas	X	X	X	O	O	O	...	...	...	...	...	...
Ventura county .....	...	...	...	...	O	X	X	X	O	...	...	...
	(Puebla Oct. to Feb.,						(Nabal Apr. to Sept.,					
	1931-32)						1931-32)					
Total all districts.....	X	X	X	O	O	...	O	X	X	O	O	O
Monrovia to Riverside.....	X	X	O	O	...	...	...	...	X	X	...	...
North Whittier Heights.....	X	X	O	O	...	...	...	O	O	X	X	X
La Habra, Fullerton, Anaheim.....	X	X	O	O	...	...	...	X	X	...	...	...
Escondido, Fallbrook, Vista.....	O	X	X	O	O	...	O	X	X	O	...	...
Carlsbad, Encinitas	X	X	O	O	...	...	X	X	X	...	...	...
Ventura county .....	...	O	X	O	...	...	...	...	X	...	O	...

O—Light. X—Heavy.