

Problems of the Avocado Industry

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My talk is really a summary of what you have been hearing last night, this morning and again this afternoon. My manuscript today wasn't written to be read and yet it is too voluminous for notes, so I think I will read it anyhow and save time. It has one merit, for I can assure you that it is brief. Of course, there is really only one problem in the industry from the standpoint of commercial growers and that is "How to Make a Profit Out of It." There are quite a number of answers to this one problem.

I have classified my talk as follows: Psychological problems, social problems, economic problems and cultural problems.

PSYCHOLOGICAL PROBLEMS

The avocado is not mysterious, unusual, or greatly different from most of our non-indigenous, semi-tropic tree fruits. It is governed by the same laws of physics, chemistry, plant physiology, and economics, as other tree fruits. It is subject to weather conditions, soil conditions, bitten by insects, attacked by disease, responds to good care and favorable conditions, just as other plants do. It is an ornamental tree, producing fine, palatable, nutritious fruit, and will be a valuable asset to our California horticulture and the tables of the world. Its culture should engage our interest, and excite our curiosity, but there is nothing in this to make us lose our heads, and have hallucinations about it.

These psychological problems will be solved easily by experience. We are now experiencing the gold, gray dawn of the morning after—the morning after our planting spree of the last eight years. But it is only dawn—daylight is coming.

SOCIAL PROBLEMS

With the comparatively small number of supposedly highly intelligent folks engaged in this exotic industry, it is hard to understand why we have a problem of social unrest among ourselves. By **social**, I mean man's relation to his fellow man. In this case, it applies to avocado growers' relations to other avocado growers. To quote a famous American, "If we don't hang together, we are all going to hang separately."

I think I have been as free in my criticisms of some of the policies of Calavo Growers as anyone, but these criticisms have been open and honest, and, I hope, constructive; and furthermore, they have been made to the management, directorship, and membership of the organization and not to those who are nonmembers.

There are two social problems, as I see them. First, within the membership; and second, with those growers who are not now members of the marketing organization. In the first case, there has been a lack of understanding, and therefore, a lack of confidence. This is an educational problem for the organization to solve. In the second case, there is a suspicion of motives; a lack of confidence, which, as I said a minute ago, means a lack of understanding; and an individualistic pride that is hard to overcome. The independent seller of avocados **is** capitalizing on the sales effort of the cooperative marketing organization, but I do not believe that **that** is his **real** motive for staying out. (There may be exceptions.) This is a problem that only time, experience, discipline, friendliness, and education can solve. All of us need to work on this problem.

ECONOMIC PROBLEMS

Economics is the science of business, and business is the science of making a profit. A better and amplified definition of business would be, that it is the science and art of making a profit. Science is the accumulated facts of a subject, and art (at least in this sense) is skill in applying the existing facts. Many of the facts in this case, and under present conditions, are beyond our control. There is great need of skill, or art, in applying economic facts to our industry if we are to make a business profit. The cold facts are that our yield in pounds per acre multiplied by the price per pound we receive, minus our costs of production, will give us either a profit or a loss in our industry, individually or collectively. This simple formula, devised by some economist, I don't know who, is more complex than it seems. At least, it can be factored down to a detail not possible in such a brief talk.

The great variation of yields, in pounds per acre, which occur with no apparent reason, is one of the problems. We need help from the botanist on the problem of polinization. To make the fruit which does set, stay that way, is another problem. Alternate bearing of some of our good varieties is another problem, or perhaps a part of both of the above mentioned problems. Why some varieties (generally inferior ones) will set every year, and why some good varieties will alternate is a problem on which we need help. The answer may be found botanically, or it may be found culturally.

The price per pound received will depend on a number of factors, some of which are in control of the avocado growers, and some of which are not. The avocado growers cannot increase the ability of consumers to buy, but they may influence them to spend more of their income for avocados. This is a matter of advertising, which in this case, I hope, means education. I know it costs money. The ability of the marketing organization to spend money in advertising depends very greatly on the amount of the production it controls. The marketing organization cannot offer to develop markets by advertising and educational work if the return to members is not commensurate with the efforts put forth. If non-members, who are not contributing to this educational campaign, profit over members, to the extent that members become discouraged and withdraw their support, then members and non-members will both suffer heavy losses, and the industry will drop into a condition of chaos. Disciplining non-cooperative growers in their local markets seems a hard method, but may be necessary in some cases to solve this problem. The avocado industry is too small, geographically, to support much division of

purpose among those engaged in it.

The quality of fruit is an important factor in the price that the consumer is willing to pay and that brings us into this subject of varieties again. Not only must we have a variety or varieties that will give us a good annual yield, but we must have varieties good enough that consumers will continually come back for more. Buying folks develop habits, and the habit that seems to be developing for California avocados is for a medium-sized avocado, green in color, pear-shaped, and of a good quality, and we hope with a Calavo stamp on it.

At present, Fuerte is the standard, and on account of the large acreage planted to this variety, will doubtless remain so for many years. Our problem is to find and develop varieties of green fruit, pear-shaped, as good as or better than Fuerte in quality; not round, oblong, or purple fruit, all of which will tend to confuse our markets, and reduce our price per pound. The sooner we, as growers, can standardize on year-around varieties of this type, the better off we will be. I say this in spite of the fact that I know some very excellent round and purple varieties of fruit are being rather heavily planted. California is apparently committed to a pear-shaped, green fruit of medium size. Perhaps our local markets can take our other types of fruit.

COSTS OF PRODUCTION

One of the first and continuous "costs of production" is "interest on investment". Maybe the avocado industry started off sensibly, but it did not stay that way. In a paper which I presented at the Avocado Institute at Tustin, last February, I made the statement that, in my opinion, forty per cent of the avocado acreage in San Diego County which could succeed culturally could not succeed economically. This was considered a pessimistic statement, but nevertheless is true, unless purchasers who thought they were buying income property are willing to "charge off" homesite value from their avocado orchard investment. The percentage of this "charge off" will depend on the size of the unit they purchased. In some cases which I know, this "charge off" should amount to as much as eighty per cent of the original purchase price.

Taxes. These stay with us. Assessments that were made three years ago, based on selling price of some avocado land, at one-third of the value that land salesmen were quoting, are a lot too high today.

Depreciation. Trees reach maturity, decline and die. From a cost of production standpoint, this depreciation should be added to costs each year. How long will an avocado orchard remain profitable? This is one of our unsolved problems as yet.

Refined and Costly Methods.

Per tree irrigation systems.

Fancy basins.

Lath house fences.

High-priced trees—\$10 to \$25.

6x6x? holes in which trees were planted.

High staking—Individual tree windbreaks

Blasting—Subsoiling (in most cases).

Credulity—particularly in fertilizer application.

Culture.

Pest and Disease Control.

Will become more, as time goes on.

Fertilization.

Not much experimental evidence.

Don't be a sucker and believe every fertilizer salesman.

Irrigation.

Needed water costs enough. Don't waste it.

Cultivation.

A certain amount will save money. Too much is an economic waste.

CULTURAL PROBLEMS

Fertilization. The problems are: What? When? How much? As I said a minute ago, we have little experimental evidence to go on. Until we have more experimental evidence from sources that can afford to experiment, we should let our heads save our dollars. The facts that have been proven are: That Southern California soils are deficient in nitrogen and organic matter; that Southern California soils apparently are well supplied with potash, phosphorus, lime, and, I might add (in the light of recent propaganda), sulphur and iron.

The answer to "What?" in the fertilizer problem is, as indicated by the above facts, nitrogen and organic matter.

The answer to the "When?" problem is not so clear. At the present time, we are confronted with a lot of "naked" trees. Most of these "naked" trees are full of bloom. Most of the fruit which sets on these "naked" trees will probably fall off. One of the problems is: "Why are these trees 'naked'?" I can answer truthfully, "I don't know," but I have a guess, and that is that they are "naked" as a result of a lack of nitrogen some time in the more or less immediate past. Probably many of these trees had a nitrogen supply last spring or summer. Perhaps they needed an additional supply in the fall. If they had had a higher nitrogen application in August or October, they probably would

have been frosted in the winter, and "there you are." This "When?" problem for avocados is not yet solved. We know that trees that bore a heavy crop last year, seldom bear a heavy crop this year. The avocado tree apparently makes a heavy storage of plant food in its trunk and roots, but not enough to produce two large crops.

This year, I am going to try extra, special fertilization on the heavy producing trees, and see what happens next year.

My recommendations as to when (subject to change) are: Nitrogenous fertilizers in January, June and August. Manure, from May to August, as you can get it. A summer cover crop of beans—lima or blackeye—if you can afford and will give the extra water. A winter cover crop of mustard, planted October 15th to November 15th, and disced in February. -

"How much?" This problem applies mostly to commercial and chemical fertilizers. There is no "rule of thumb" formula that you can go by. You must develop a "tree" or "fertilizer" sense. The old saying, that "If a little is good, more is better," does not hold true. Chemical fertilization of newly planted trees is usually an economic loss. Boots and leaves must develop before fertilizer can be used. After trees are definitely in growth, one-fourth of a pound per tree of sulphate of ammonia, or its nitrogenous equivalent, may help it along. Older trees can handle larger amounts. This is not a treatise on fertilizer practice, however, and I will stop my recommendations here.

As to "how much organic fertilizer?", I can only say that you are not likely to overdo it from a fertilizer standpoint. From an economic standpoint, however, that is easily possible. Ten tons of manure per acre (approximately thirty yards) is perhaps about all that economic conditions will allow of this type of fertilizer.

Irrigation. We know that the avocado wants plenty of water, but we also have found out that it does not want too much. The "happy medium," is our problem in this regard. Soil moisture problems of avocados are a paper by itself. How much, when, and what quality?

Pruning. I have come to believe that pruning is a practical problem and not a scientific problem of plant physiology. If man does not prune enough, nature will. From a practical standpoint, avocado growers want a tree that is strong structurally, and that will have a framework that can produce and carry maximum crops. Such a tree can only be secured by careful training from its youth up. In young trees, that have a tendency to drag branches on the ground, it probably would be well to cut off such branches, to reduce the hazard of disease infection that we know not of. In older trees, we must consider the bearing surface, and the cost of picking fruit. Lack of foresight in intelligent pruning of older trees will induce what is known as a "shell" crop. I have seen this indication very pronounced in older orchards. And in your pruning program, do not forget that we are confronted with spraying and fumigation problems.

There are many other existing problems of the avocado industry that I have not touched upon, and many others that doubtless will arrive as the industry develops.

Please remember that the College of Agriculture of the University of California, and the United States Department of Agriculture, are always willing to help you work on the problems of the avocado industry.

Question: I wonder if there is some way that these talks we have heard here today might be published and gotten out to the growers before we have the Year Book?

President Thille: We can request Calavo Growers to do that through the Calavo News. The next Calavo News will be out in July. The Year Book won't be out until the end of the year. We will try to do something toward getting this information out in a condensed form.

Question: I would like to ask Mr. France to answer a question. What time or season to apply fertilizer when we have a heavy crop to mature?

Mr. France: If trees are well set with fruit, what time of year should you apply most fertilizer to mature that fruit? Well that would depend on what has been given up to that time. Also, as I have said before, you have got to learn a little "tree sense" or the art of putting the stuff on. There is no definite rule. If I had trees heavily set, I certainly would give them extra nitrogen fertilizer every two months. The avocado tree must produce the food supply for its fruit by means of its leaf surface. Avocado trees apparently like to store considerable plant food in the trunk and roots and probably when a tree is very heavily loaded the burden is just a little too great—to provide food supply for fruit during growing season and for the coming crop. Nothing very definite that we can say at the present time.