

## "Looking Ahead in Avocado Pruning"

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Man is always trying to improve on nature; frequently he does, at least from his viewpoint, but at other times, he makes a rank failure, both from his own and nature's standpoint. The pruning of trees is a case in point. His successes are obtained when he works with nature, his failures when he works against her. For this reason, the pruner should have some knowledge of the life processes of the plant he plans to operate upon, so that he may exercise sound judgment as to when and how he operates.

The necessity for pruning the avocado is generally admitted, although there are still some growers who believe in jungle planting, no cultivation and no pruning. It is not my purpose to discuss cultural methods and practices in this talk, except as they relate to the pruning problem. Jungle planting will create in time, tree shaping problems that will require the use of the axe close to the ground, or the fire department to pick the fruit.

Pruning is a practical problem for the grower, rather than a physiological necessity for the tree.

The grower desires a tree that is strong, productive, easy to cultivate, irrigate, fertilize, spray, or fumigate, when these things are necessary, and one from which he may pick fruit at the lowest possible cost. An avocado tree if left unpruned and to its own devices, will not fulfill these requirements for many years. Its sole desire for growth is to secure as large a place in the sun for its leaf surface as it is possible to get, with the help of available soil nutrients. Avocado trees compete, not only with their close neighbors, but even with their own leaves for this place in the sun. This means a constantly rising and spreading top of growing and bearing wood, and a constant death of the lower and inside bearing area. So long as there is ample light which means open space around the tree, lateral growth will be about as rapid as upward growth in many of the varieties of avocados. In some cases, the lateral growth seems to be more rapid than upward growth, which brings up a pruning problem which I will discuss later. When trees grow together, and this is the case with many of our groves, the lateral growth ceases, and from that time on, the growth is all upward, and the shading out of inside productive wood becomes more rapid. In a few years, you may find that your orchard has become a sort of rough table top over your land, impossible to fumigate, difficult to spray, and expensive from a fruit picking standpoint. Furthermore, if the pruning off of low lateral branches has been neglected, you may also find that the area in which you have to work is cluttered up with large branches and limbs, so that it is extremely difficult for you to carry on the ordinary cultural requirements of irrigation, fertilization, and the movement of picked fruit. You may think that I am trying to "paint the kettle black."

Perhaps I am. At least, I am not attempting to "gild the lily." However, I have seen just such conditions in avocado orchards in Southern California (of course, not in San Diego County—yet.)

Our avocado industry is so much of a youngster (and we have never had a child quite like it before), that we can surely be forgiven for making a few mistakes in its upbringing. Mistakes represent the debit column in the ledger of Experience. Mistakes can be a real asset, particularly if the other fellow makes them, and we profit by his experience.

Most of the pruning mistakes that have been made in training avocado trees have been sins of omission in lack of adequate pruning, rather than the more serious sin of commission, over-pruning. "Is my face red" when I think of what I did to young apple and peach trees back in 1911, in Michigan; and I had just graduated from the Agricultural College, too.

As I look this audience over, I am inclined to think that some of you have been closely connected with the lemon industry, and some of you should have red faces, too.

There is no justification for continuous heavy pruning of any orchard fruit tree. I should like to put this down as Principle No. 1 in this talk on Avocado Pruning. On the other extreme, faint-heartedness in the timely use of the knife, shears or saw, may necessitate heavy pruning later, if trees are to be kept in good shape for profitable and convenient production.

Personally, I do not believe much in "systems" of pruning. Trees are individuals, and require individual treatment. That is why talks like this are generally unsatisfactory to an audience which is seeking definite information on how to prune. If I had an avocado tree here that needed pruning, and was to proceed to prune it according to my idea, and if I did a really good job of it, you might not find the demonstration helpful in detail when you got out in your own orchard to start your pruning, for you would not find a single tree in your orchard just like it.

You must have something of an ideal in your mind, when you are pruning to shape and develop a tree. You must be able to visualize what the tree will look like after you cut off the limb in question, and what it should look like in a few months or years. Trees do not always respond in just the way you expect, and constant follow-up work must be resorted to, if you are to achieve an approach to the ideal you have in mind. Good pruning requires vision and judgment, and both your vision and judgment will improve with experience.

I have a picture in my mind of how I think I want a fifteen or twenty-year-old avocado tree to look. I have much clearer pictures of how I do not want it to look; the reason being that I have seen so few that approach my ideal, and so many that do not. I am sure it will be easier to draw pictures for you of those I do not like. It is always easier for as poor an artist as I am, to draw bad pictures than it is good ones. I will try to draw the worst one first.

(Draw sketches on blackboard.)

You may think that is extreme, but I assure you I have seen some trees that look almost as bad as that one—lateral branches that have been allowed to develop within a few feet or even a few inches from the ground, growing almost horizontally for eight or ten

feet, and then having met competition from adjoining trees, have made a right angle turn and started skyward. You see what I meant when I said that such trees resembled a table-top above, and interfered with orchard practices beneath. This is a horrible example, of course, but I venture to remark that many of you have such horizontal limbs developing on your young trees right now—limbs as low as two or three feet, and that already are as large or larger than the main trunk above them. My advice to you is: Take them off—no matter how much it hurts you. If you are tenderhearted, perhaps you can do it a little at a time, but get them off within a year or two at the most.

My second bad example, much less horrible than the first, looks something like this. (Draws.)

This is a fairly well-shaped tree—as a shade tree—well-spaced and distributed branches, but its bearing area is a shell many feet from the ground, making picking expensive, and wasting a lot of good bearing area nearer to you, for the entire center of this great dome is barren. The answer to the question of what to do with trees of this type is difficult, but how to prevent it from occurring in your orchard is simple. This condition has been brought about by crowding, due to close planting. The answer is to remove filler trees, even if you did not plant them as fillers, before crowding occurs. This is one case where heavy pruning is justified; that is, on the fillers. Here again, you can use the "piece of the dog's tail at a time method" if you choose, and spread the elimination over a few years, with the hope of receiving some fruit from the filler trees.

I hesitate to even attempt to draw my idea of a good tree, for it may look, on the blackboard, with my drawing, about as bad as the others have. You all know how a good four- or five-year-old Fuerte looks, with its billowing branches in banks and terraces, presenting a lot of leaf surface to the sun, and with bearing wood from the trunk to the outside branches. Well, my picture of a good, mature tree is like that, except that it will be at least thirty feet high, (you can't keep a good avocado tree down), with a corresponding spread, and fruiting area coming down to within, not to exceed, six or eight feet from the ground. Such trees can be produced, if they are given room enough, and properly pruned. The more difficult problem is how to maintain a bearing area from the trunk to the outer branches. Light into the interior of the tree is the only answer, and the only way to let light enough in is to provide "windows" by removing shading branches from time to time. I am not sure that even this will get very good results. There is still a lot to learn about the pruning management of mature avocado trees.

I am afraid that many of you have been disappointed in the lack of detailed information, and "rule of thumb" methods in this talk. I have said nothing about when to prune, very little on how to prune, nothing about tools, treatment of wounds, description of methods and systems, pruning for disease control, and other things which you have in mind, but my time on this program is limited, and I have tried to leave a few minutes for questions, which I shall be glad to try to answer. My hope is that in some small way I may have stimulated your interest in trying to picture how your trees should look—one-two, five or fifteen years from now, and that your interest will be expressed by the judicious use of the knife, the shears and the pruning saw.