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# Tying, Propping and Pruning Avocado Trees 

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Some weeks ago Mr. Wahlberg approached me with the statement that scientific fellows would not have much place on the program today and at the same time asked me to talk about some of the problems one meets in growing avocados, especially in reference to tying, propping and pruning. Being reassured by the fact that I qualified so well by not being scientific, in a weak moment I agreed to try to tell you of some of my experiments.
I have been growing avocados long enough to know that I don't know much about it.
I made my first acquaintance with the avocado in 1895, when I went to the Hawaiian Islands and spent several years in connection with the coffee and sugar industries. In my spare time I gave some attention to the avocado and was among the first in Hawaii to experiment with budding and grafting the avocado. After ten years I returned to California and in 1912 began planting avocados on the place where we now live. It seemed profitable at one dollar each so we gradually expanded our plantings until we had what is called a commercial grove. After a time I found it necessary to prop some of the trees to keep them from breaking down and as they grew larger, it became advisable to cross tie with wires, using screw eyes or hooks to secure the wires to the main branches.

## PROCEDURE

This is fairly simple in trees making a well balanced growth, such as the Fuerte; but not all varieties grow into a symmetrical tree. On the Sharpless, for example, occasionally a main branch breaks out of one side of the tree, which throws the tree out of balance. If you were to tie heavy overhanging branches on the opposite side to the top of the tree, it would all be pulled over and result in total destruction of the tree. To restore the balance of the tree, it is necessary to select one or more branches that will permit a tie rather far out toward the farther end of the branch, and raise the branch upright into place and attach the other end of the tie no higher on the trunk of the tree than is necessary to give the branch support, using two wires, if necessary. This, in turn, gives a place to tie and support other overhanging branches.
After tying and bracing a tree, it should be gone over again each year, for two main reasons. First, the tree may have shifted its growth so that the previous job needs to be changed to some extent; and second, the hooks used may have started to grow into the limbs and need to be moved, or the wires may be scraping some limb and causing damage. As to equipment needed in doing a job of tying, one should use 12 gauge wire
(I have used miles of it), heavy screw eyes or tree hooks such as I hold in my hand. He should have a good heavy pair of wire cutting pliers, a pair or two of other pliers, a sturdy screwdriver to help twist wires, and a pair of pruning shears and a pruning saw. To fix the props, of course, one should have a good hammer and plenty of 8 penny and

It may be necessary to use props as well as ties. I use $11 / 4$ by 2 inch props up to 12 feet in length with ordinary adjustable wire hooks. If the load is heavy, I use two hooks together, wrapping them with a strip of burlap to protect the bark from injury.
For 16, 18 and 20 foot props, I use $2 \times 3$ sticks free from knots, cutting a notch in the upper end of the prop to support the branch. A strap may be nailed to the top of the prop and over the branch to prevent the wind from raising the branch and causing the prop to fall.
Rope may be used to tie small props to the branches in the same manner.
For 30 foot props I use $2 \times 3$ sticks, nailing the flat side of one stick to the edge of another with enough lap to insure strength.
When there are a number of small heavily loaded branches in the top of the tree, they can be supported by ordinary props resting on a strong branch below. A short stick should be nailed on either side of the lower end of the prop, making a fork to rest over the branch and hold the prop from slipping, or the prop can be nailed to the branch, which serves the same purpose and requires less work.

## PRUNING

Judicious pruning is a great aid in shaping the trees so that supporting the branches will not be so much of a problem; although I think pruning can be overdone. We should not lose sight of the fact that we are growing the trees for fruit and not for ornament. I think it is poor practice to cut off all the branches from six to eight feet from the ground as we see them in some groves.

This practice reduces the bearing space on the tree and makes an added expense in pruning and picking the fruit. I prefer to raise the lower branches only clear of the ground, to prevent fruit from being damaged. The fruit that grows on the lower branches is easier to pick and is better protected from wind damage.
Over-pruning causes sucker growth to spring up inside the tree. All sucker growth which is not necessary to fill up an open space should be removed, also dead wood.

If I cannot find a good reason for cutting a branch, I leave it alone. If a branch develops a limber growth and twines like a vine, I cut it out, as a good tree cannot be developed from that kind of wood. Crossing branches should not be left, as they rub and scar other branches you are using to build up your tree.
Because of the different growth habits of the various varieties of the avocado, no set rule for pruning is possible. One must study each tree and prune according to its needs.
A word about picking fruit from tall trees. One can pick much faster from a ladder where it is possible to reach the fruit, than with a picking pole. I am using 18, 22 and 30 foot

## ladders.

I also have an adjustable tower on skids which can be towed from place to place by my pickup. This tower can be raised to a height of 20 feet, an 18 -foot ladder can be set on the platform at the top of the tower, and by using a 12 -foot picking pole from this ladder, I can reach fruit hanging 50 feet from the ground. Anything hanging higher than that is left to drop.

