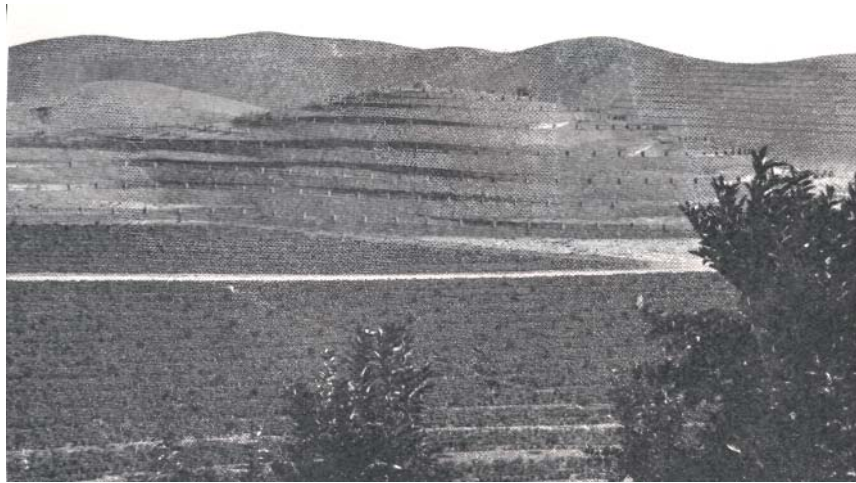


## GROWING AN AVOCADO ORCHARD

C. V. Newman,  
*President Calavo Growers of California*



The planting of a tree should be a ceremony, and great thought should be exercised in the selection of the tree, its location, and its care.

There is no reason why our best trees should not be furnishing food and pleasure to generations fifty and even one hundred years hence, and a famous orchard is a living monument to its owner's sagacity.

The first consideration for a grower is location. Avocados are planted from San Diego to San Francisco, and from the ocean to points seventy-five miles inland. They are planted on flat land and on hillsides. They are planted in adobe, loam, sand, and rocks, and most of them are growing. Fortunately, people will always disagree as to what constitutes a good location—otherwise some places would be overcrowded. The writer will describe the location which, as he sees it, is ideal from a commercial point of view.

Location: There is a strip of land about twenty-five or thirty miles wide, extending from Santa Barbara to San Diego, that will be just as famous throughout the world for Avocados as it is becoming for human habitation.

A gentle slope that is warm enough to grow lemons without heaters is ideal, and if the soil is well-drained medium loam, so much the better. There are some places naturally protected from wind by hills, but most places need windbreaks. Due to the lack of adequate protection, wind damage to avocado orchards has already become a factor in the estimating of crops for the following season.

The avocado is a heavy feeder, both of plant food and water, and, like the walnut, must have plenty of both of these elements. While groves will exist and bear some fruit on poor soil (sand and clay), still they will not be able to survive commercially the severe

competition with good trees on good soil.

The making of a good avocado orchard involves the services of two men— the nurseryman and the orchardist. Success depends upon how well each man does his work.

We will start with the nurseryman's job. According to the best knowledge we have, we believe that the Mexican root is advisable for most commercial varieties. Seeds should be selected from trees that are broad-leafed and vigorous and that bear consistent crops of medium-sized fruit with medium to large seeds. When the seedlings are transplanted to the nursery rows, they should be culled, because no nurseryman can afford to fool away his time on a runt seedling. If a nurseryman is to stay in business he must cull out runts from the seed to the lath house.

Balling, curing, cutting back, etc. are his job, but these operations have been fairly well standardized by reliable nurserymen. There is another department of his job that is going to grow in importance as orchards develop, and that is bud selection. There are good trees in Southern California. There are acres of trees of known parentage in Southern California, and already many of these trees are showing regularity in their bearing habits, and they are producing heavy crops of high-grade fruit. These are the trees that should be used as a source of budwood for future orchards.

When the trees are balled and cured, the nurseryman's job is done. The orchardist now assumes the responsibility. He has selected his land, and all he has to do is to pick out his varieties and raise the orchard.

Varieties: This is a dangerous subject to discuss. Giving advice on this subject has proven so dangerous to growers that the responsibility has been placed with a variety committee.

Two facts, however, are becoming apparent. One is that the monthly sales sheets of the Calavo Growers Exchange indicate a marked preference for a very few varieties, and the other is that the southern part of the state is better adapted to early varieties, and the northern portion is better adapted to late fruit, points of great significance in the successful distribution of our crops and to the standardization of our marketing problems.

After the land has been selected and the varieties determined, the grower should get his trees to the field with the least possible disturbance. Plant the tree carefully, make a basin, and water at once. Light watering should be given at intervals of from one to two weeks, depending on the weather and the type of soil. If the trees have been dug when dormant, say in January or February, and cured for from twenty to thirty days, they should start growing very shortly. Protection against sunburn is just as essential as the selection of trees, because one hot afternoon will burn the bark of the best tree, if it is unprotected, and thus destroy all of your efforts and the work of the nurseryman. Trees can be protected early in the spring with whitewash or by standing up two shades on the west side, or if the planting is late or in the hotter interior, burlap shades should be provided. If the tree is planted in May, a straw mulch is advisable to retain moisture and even temperature, but if planted in January, too heavy a mulch sometimes keeps the ground so cold that growth is retarded.

Remember, now, Mr. Grower, if you have planted a runt tree, you will have to nurse that weakling as long as it lives, while, on the other hand, the thrifty tree will take care of you, and right here I want to say that the most worthless of all orchard trees is a weakling, runty avocado.

Our experience has led us to believe that the mulched-basin system is the best for irrigation for about two years, after which time the furrow system or overhead irrigation can be used to good advantage. Trees will come into bearing when they are from three to five years of age, according to variety and location, and during this period it is difficult to lay down rules for irrigation, fertilization and pruning.

We believe that avocado trees need more water than citrus under the same conditions, and we believe that the application of manure and beanstraw is beneficial under most conditions.

In one orchard with which the writer is most familiar, we observed that the part of the orchard where the soil is a rich loam and where the beans grow the best, where the citrus is the most thrifty, that the avocado trees are also the most superior. We used these as a standard of perfection, and tried to bring the ones on the lighter soil up to this standard by the use of liberal application of manure, beanstraw and water. The results to date are that the trees on the sandy, poorer soil are just about as big as the others, and have in their fifth year produced just about double the others.

The safest course for a grower is for him to study the methods of the most successful grower in his own neighborhood, and then apply this knowledge with care to his own ranch. Nobody knows all the rules of this business of growing an avocado, yet we know that there are some superior growing and producing orchards already established in Southern California.

There are almost as many methods of **cultivation** as there are farmers. Some of our best orchards are irrigated and cultivated in just about the same manner as is used by most citrus men. Others, using the mulch basin, extend this basin as the tree grows, and simply keep the weeds down around the tree. Some growers, however, allow vegetation to grow the year around and do no cultivating. There are hillside plantings where cultivation is impractical and perhaps unnecessary, but ordinary level land needs some cultivation. In orchards where there is no cultivation, the roots come right up close to the surface of the ground. Now, under our semi-arid conditions, there are periods of high temperature and low humidity, when the tree must suffer a shock because of distress to the surface feeders.

**Cultivation**, we believe, should be practiced with moderation and the weeds kept down.

**Fertilization:** The application of nitrogen to check plots of apples has developed some interesting results in the setting and holding of this fruit. So far, no positive fertilization plan has been worked out for avocados. It can only be said that young trees do respond to mulches and to the light application of manure, and that perhaps the best commercial producing orchard for the year 1927 had fifteen tons per acre of rich manure plowed under deep the year before.

**Pruning:** To discuss this subject intelligently, we must get our thoughts together and see what we know about the natural habits and needs of the avocado tree.

First of all, this tree is susceptible to wind damage and sunburn. It likes plenty of moisture all the time, and it thrives on uniform temperature.

The natural inclination of an avocado tree is towards irregular growth and low-hanging limbs. We believe that the limbs come to the ground for a purpose. They conserve moisture, make uniform temperature, protect the trunk from sunburn and frost, and build up a natural leaf mulch under the tree. The tree that is thus naturally protected below and the one that is compact in the top will produce the maximum amount of high-grade fruit with the least care. It is all right to let the limbs droop to the ground, but we do not believe it advisable to allow heavy, strong limbs to start close to the ground and run out at will. They may be the strongest feeders on the tree and prevent normal development above. These can be removed, and very soon branches will come down from limbs just above.

Pruning, as we commonly use the term, covers a big field, and we hesitate to go on record when we really know so little about pruning avocados. We are justified in saying, however, that the job should be tackled very cautiously, and perhaps, the less done, the better. Cross limbs should be removed and over-ambitious growths checked, by pinching back the tips. We should try to make the tree fairly compact for the sake of protection, and keep the limbs from getting too long and open.

Pruning should be done in the spring, after the growth is well under way, and before hot weather begins. No heavy pruning should be done in the fall, because the cutting of any limb constitutes a shock, and trees should enter the winter with all possible stored-up energy to resist wind and frost.

Perhaps the most important part of the orchard business has not so far been discussed. This is, **marketing** the crop. Good farmers as individuals can raise good trees that produce good fruit, but it takes organized farmers to build up markets and maintain uniform distribution. Farmers working as individuals are sure to lose—they always have. Cooperative organizations have a fighting chance to win.

The Calavo Growers of California is the name of the marketing organization which was formed by the growers on January 1, 1924. The Calavo Growers Exchange has a copyrighted brand, which is Calavo. Calavo means California Avocado, and stands for quality. This marketing concern was organized by the growers on the same principles used by the California Fruit Growers Exchange, and is maintained by the growers.

Methods of standardization, packing, grading, stamping, pre-cooling, and refrigerated shipments are problems that are being met by the Exchange, and the public is being educated to the proper use of the Calavo through its local, Eastern and Western agents.

Developing new markets and maintaining scientific and orderly distribution of our crops is the job of the Exchange.