

PROPER PLANTING AND CARE IS SECRET TO PROFITABLE GROVE OF YOUNG AVOCADO TREES

James A. Beutel

Is a Farm Advisor, Agricultural Extension Service, Los Angeles County

(A talk given at the 25th annual Avocado Institute, La Habra, October 24, 1953.)

The secret of a profitable avocado orchard is planting in a desirable location, using the best trees and variety available, and giving the young trees the best possible care. The poorest investment one can make in avocados is to plant cheap, inferior-quality trees in an undesirable location. The purchase of good trees and planting in a situation favorable to avocados may cost more at the start, but will pay dividends in later years.

Briefly, a satisfactory location for an avocado grove should be on good, well-drained avocado soil in a relatively frostless area and where extremely strong winds are not a problem. This area must have a climate satisfactory for at least one variety to set and produce desirable avocado crops during most years.

What constitutes a good tree?

First, it should be raised in a soil similar in type to your soil and a soil virgin to avocados. The soil on the ball of the tree should be similar to that of your orchard, so that the ball will be wet thoroughly at each irrigation. No one wants to bring root rot into a new grove on the roots of nursery trees; therefore, it is undesirable to buy nursery trees raised in an old avocado soil.

A good tree should have the best rootstock and scion available. This means trees should be budded on vigorous seedlings. The buds for your trees should come from disease-free, high-producing trees of a variety which is best adapted to the area in which your orchard is to be located. Finally, the budded trees that are to be planted should be vigorous and healthy in appearance. Year-old budded nursery trees, tied-up buds, or tip grafts, all make good orchard trees if they were good trees when they left the nursery and are given proper care as young trees in your orchard.

PLANTING AND ORCHARD CARE OF YOUNG TREES

There are many examples where two groves were set out at the same time in similar soil with good trees from the same nursery. After four or five years, one grove had large trees producing fruit while the other grove still contained mostly small trees. The reason for this is usually easy to see. The grove that is producing fruit received good care, especially good irrigation, and the other did not.

Care of the young trees in the orchard starts at planting time. First, dig a hole only

slightly larger than the ball of soil around the roots of the tree, place the ball of the tree in the hole, fill the hole two-thirds full of soil, and tamp it well if dry or settle with water if wet. Then cut the string that holds the burlap around the trunk and roll the burlap back, laying it on top of the soil in the hole. Removing the burlap from the top of the ball often permits water to wet the ball easier than if the burlap is left tied around the trunk. After this, fill the hole with soil and make a cone-shaped basin around the tree. The bottom of this basin should be directly over the ball of the tree. For tip-grafted trees, place the tree in the hole, remove the tar paper pot, fill the hole with soil, and make a cone-shaped basin over the ball. Make the basin around nursery or tip-graft trees large enough to hold 10 to 15 gallons of water.

Fill this basin with enough water to wet the ball and soil around the ball completely. The amount of water may vary from 5 gallons for small trees in sandy soil to as much as 10 gallons for larger trees in heavy soil.

Be sure that the trunk of the tree is protected from sunburn. One day in the hot sun can easily burn the tender bark on the young tree. The bark of the young tree is not accustomed to full sun, since it has been in a nursery, shaded by other trees. Good materials to use to protect trunks of young avocado trees from sunburn are newspaper mats, palm fronds, and white cardboard.

Don't forget the trees that you have just planted. Come back in a day or two and check all the trees to see that they are not wilting or getting sunburned. Two or three days after planting, it would be advisable to fill the basin again with water. Continue to fill this basin with water about once each week. If the soil is sandy or the weather is hot, it may be advisable to water twice a week. If the soil is one of the heavier types or the weather rather cool, it may be possible to stretch the interval of watering to 10 days or two weeks.

However, one does not have to guess about when to water young trees. A small soil auger, made of a five-eighths-inch bit welded on a one-half-inch steel rod 24 to 36 inches long with a handle on the end opposite the bit, can be used to find how wet or dry the soil may be. This auger can be pushed halfway down into the ball of the tree, twisted, and then pulled out. The bit will be filled with soil from the ball. If the soil is wet, it will not be necessary to irrigate the tree at this time; but if it is dry or approaching dryness, then the tree should be watered. Check several trees in the orchard so that you can be sure of the general condition of the orchard. Then water all the trees that are on the dry side or the entire orchard if there are several trees that are dry. Checking the soil for moisture is a better way to determine when to water trees than by using a rigid schedule.

Be sure to water young trees every time the soil in the ball begins to dry out. There is only one and one-half to four gallons of soil in the ball on the average avocado tree. Only 5 to 20 percent of this ball contains water that is available to the young avocado tree. It is only from this ball of soil that the young avocado trees' roots can obtain water; therefore a few gallons of water must be applied frequently to each young tree if it is to grow satisfactorily. Trees cannot grow if the soil where their roots are located is dry. More young trees suffer from lack of water than from overwatering. Give your trees water frequently, enough to keep them growing well. Where avocados are planted on

well-drained soil, it is better to give them water frequently than to try to keep them too dry.

Basin watering by means of a water tank and hose has been found to be the most economical and efficient way to take care of most young orchards the first year or two. At least, this is true where furrows will be used to irrigate the orchard after the second year. If sprinklers are to be used, a portable hose sprinkler setup can be very efficient and economical. The hose for the portable sprinklers can be connected to the outlets of the permanently installed main pipelines.

Four or five months after planting, the original basin should be enlarged so that the larger root system which has developed since planting can be wet. During the second season a considerably larger basin should be used to irrigate the increased root area. As the basins are enlarged, so should the amount of water applied be increased to meet the greater need for water by the growing trees.

During later years sprinklers or furrows can be used to water young trees. These should be designed to wet as much of the entire root area of the avocado tree as is practical. Irrigation water should be applied whenever the top few inches of soil approach dryness.

Pruning of young trees should be kept to the minimum or not used at all. The more limbs which grow, the sooner a crop will be produced. Pruning to make watering convenient is not a good practice and should be avoided.

Some people find that a mulch in the basin helps to reduce drying of the soil around young avocado trees. This mulch can be made of straw or similar materials which do not contain numerous weed seeds. Do not use a heavy mulch of manure. A shovelful of manure in addition to the straw mulch around a young tree is safe, but more manure may do considerable damage to the young tree. Manure can be beneficial, but it is not necessary as a mulch or source of fertilizer. Straw alone is usually a satisfactory mulch.

A very small amount of commercial nitrogen fertilizer (15 to 33% nitrogen) can be used on young trees to increase their rate of growth. By small amount, I mean about one tablespoonful of commercial nitrogen fertilizer per tree at each irrigation. Large amounts of commercial fertilizer given young trees at one time often cause their death. A small amount of fertilizer is good, but more is usually extremely harmful. Light, frequent applications of nitrogen fertilizer are safer and better than heavier, infrequent fertilization.

Weed control around young trees is essential if they are to make satisfactory growth. Weeds compete with the young trees for much-needed moisture. Therefore, it is of utmost importance that all weeds in and around the basin should be removed. Pulling or hoeing weeds around young avocado trees is usually safer than using oil or chemical weed sprays. These sprays can easily damage tender, young trees if the person applying them is not extremely careful.

Don't forget that rodents also can do severe damage to trees. Gophers have killed many small avocado trees. Gophers should be trapped or poisoned whenever a gopher mound appears in the orchard. Other rodents, such as rabbits, can be controlled by small wire fences around individual trees. Do not underestimate the damage gophers

and rabbits can do to young trees.

Young trees should be protected from frost, since they will not take as much cold weather as older trees of the same variety. One of the best means to protect young trees is to plant them early in the spring and care for them well during the growing season; then the trees will be quite large by the following fall. Large trees stand cold better than small ones.

Several methods have been developed that help to provide protection for young trees. Mounding soil over the budded union is still one of the best means of protecting the trunks of young trees from frost. Wrapping the trunk with cornstalks, newspapers, and such materials gives some protection to young trees. Also, the use of a burlap bag or fertilizer sack placed a few inches over the top of the young tree has shown promise on very small trees. If temperatures drop below 28° or 29° F., orchard heaters will usually be necessary to give adequate protection to avocado trees, especially young trees.

In summary, a grower should choose a satisfactory location for an avocado grove, plant the best trees and variety obtainable, and take good care of the trees if he is to have a good, producing, profitable grove.