

CARE OF LITTLE TREES

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It is quite a tribute to the avocado industry to see the effort to which nurserymen go to produce good nursery trees. In the brief course of 25 years, new techniques were developed to handle this new and special plant. But it is regrettable at times to see the failure of growers to give trees the care they need.

By all odds, irrigation is the most important factor in giving a new tree a good start in life. Since the new roots are so small, an irrigation may last for only a few days in hot weather. Best results, therefore, are usually obtained by hand watering.

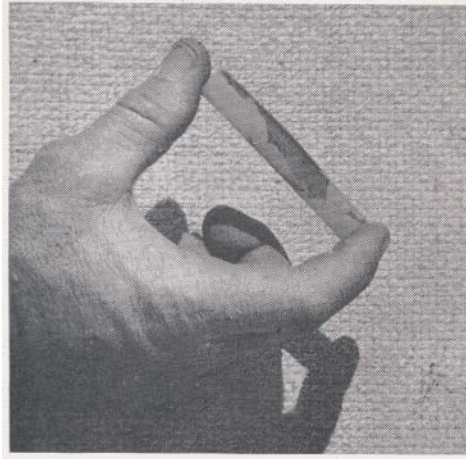


Hand watering.

Many growers are planting avocado trees in old citrus orchards, and special problems of watering are encountered. Since it is the practice to irrigate citrus trees for many hours, it is common to find that little avocado trees receive entirely too much water at one time—then have to wait too long. A good way to handle this is to block off the little tree once the basin has filled. The results in improved growth are well worth the labor. Then, it is always necessary to hand water between the regular orchard irrigations.

Chlorosis, or yellowing of the leaves, will show up frequently if too much water is given to soils high in lime. On the other hand, if too little water is applied to these soils, salts usually accumulate in the leaves. The higher the lime content, the narrower is the margin between these two extremes.

Many miles of plastic hose are being used by avocado growers to water little trees. They merely drill a small hole in the seam of the hose or cut a slit with a point of a knife to allow water to seep through into the tree basins. This system is desirable, but not foolproof, however; and all trees must be checked at each irrigation to see that they are receiving water. Algae, a green scum, has been observed growing in clear plastic hose, and it may plug the holes. It is probable that the algae will not grow inside the darker plastics.



Algae in plastic hose.

Rates of flow often vary considerably from tree to tree. In a single hose, the outlet giving the most water was found to be ten times the rate of that giving the least.

An alternative system uses a larger plastic hose with little sprinklers that merely clamp over holes. With several sprinklers on a hose it is possible to water many trees with a few moves.

LITTLE TRUNKS BURN EASILY

Sunburning of trunks of newly planted avocado trees is one of the most difficult problems that growers must face. Trees that have been bent over for one reason or another are quite common. The exposed bark will burn in a short time on a hot day. Near the coast where the heat may not be as severe, many growers use white water paint and have found it successful. In the inland valleys, however, it is common to find trees being shaded by various types of structures. It is a mistake to completely shade a small tree. It is only the trunk that needs protection. Complete shading may be a temporary advantage, however, if little trees have been planted late in the spring and have not yet developed a root system large enough to supply the top.



Palm-leaf sun shade.

It is generally accepted that a mulch of straw or any organic matter is necessary in the basin to keep the surface of the soil cool and moist. To protect the soil from heat absorption, however, means that the heat from the sun must be reflected by the straw. Thus the danger of sunburning is only intensified, especially if the mulch is light in color. Shading is, therefore, more important. A common practice is to use a short section of a palm leaf.

Many growers like tied-up buds because of good growth obtained after planting. This type of nursery tree receives the least shock at balling because the plant is younger and the root system is smaller. The tender nature of the bud, however, requires special care and some growers shy away because of high losses for one reason or another.

Staking is another problem. Some growers are of the opinion that a little tree should be staked loosely to allow wind movement. This, they feel, causes the little tree to develop its own strength sooner and thus be independent of the stake. , The worst situation is to tie a young tree tightly to a stake that is too weak.



The stake was too weak.

DON'T LET THEM FREEZE

Frost damage is a limiting factor in most areas, and protection is necessary. A good program is to tie the trunks with many layers of newspaper. Here again, the use of too much straw in the basin presents a problem. Straw is an insulator and prevents heat

absorption by the soil during the day. Similarly it prevents radiation of heat from the soil to the trees at night when they need it. The surface of the straw may be 15 degrees cooler at night than a soil surface. One grower pounds a slanting stake over the little trees. This supports a burlap canopy which covers the trees at night and is removed in the daytime. Marvin Rounds has observed the use of a collar of tar paper about the size of a one-gallon can. It is placed around the base of a little tree. When filled with sand it protects the bottom of the trunk. Mr. Rounds suggests that this will be an improvement over mounding because it will not need the servicing required by mounds after rain storms.



Protecting the trunk from frost.

Rabbits continue to be a major problem, and the best protection is given by a cage of wire at least two feet high around the little trees. A nurseryman in Tulare County protects from rabbits by surrounding the seedbed with ordinary wrapping paper. The barrier is three feet wide and is flat like a sidewalk. It is held down by placing soil along the edges. Rabbits refuse to step on me paper because of the noise and they won't jump over it (he says).



Rabbit barrier.

FERTILIZERS

Little trees usually respond to a fertilizer program. This can be supplied very well by decaying organic matter in the basin and frequent applications of small amounts of nitrogen from chemical sources. This good care of the little tree will certainly be reflected in the spring growth of grass in the basin. To be sure, grass should not be allowed to grow too close; but unfortunately, keeping the basin free of weeds doesn't seem to be a practice too widely followed.

Zinc deficiency is becoming more apparent in avocado trees. There are severe cases where twigs and limbs are dying from what is evidently a deficiency of zinc. Spraying zinc is a standard practice in the citrus industry, but is not yet felt to be a requirement for avocados. Since it is still experimental, it might be wise to spray just a few trees. Use one ounce of zinc sulphate and one-half ounce of hydrated lime for each gallon of water in a hand sprayer. The hydrated lime is necessary to neutralize the acid action of the zinc. If application of a few gallons shows some promise, an entire orchard may be sprayed using five pounds of zinc sulphate and two and one-half pounds of hydrated lime per one hundred gallons of water.

It is impossible to obtain the best growth of trees if weeds are allowed to grow in or around basins. They compete for both water and nutrients. It is well to keep a hand-sprayer handy—ready to go. Spray the weeds when small, as soon as they germinate. Nutgrass is serious in a non-tillage program. Watch for it and don't let it get started. The best control is not known, but 2,4-D will suppress it longer than most other sprays.

Some avocado varieties have an upright growing habit that makes picking difficult. In an attempt to avoid the situation in older trees, one grower is removing the tips from the upright shoots when they are young. This causes a temporary loss of the vertical growth, and branching results. Just where this program will go after a period of years is yet to be seen.

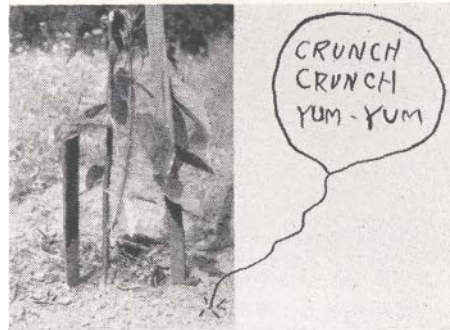


Tip pruning.

GOPHERS DO LIKE AVOCADO ROOTS

The trashy type of culture in many orchards has made them a host for large gopher populations. Although gophers do not seem to bother large avocado trees, they certainly will chop off the roots of little trees. There have been hundreds of replants this

year due to gopher damage. A good farmer will do everything he can to suppress the gophers on his property. Small cans of strychnine are available at the Los Angeles County Agricultural Commissioner's office for 23 cents. (Can't say about other counties). This is enough poison to make two or three quarts of bait. Where many gophers are active, poison is probably the best method of suppression. Using a probe, it is easy to locate the channels around active workings, and baits of carrot or sweet potato sliced to the size of a little ringer and dusted with strychnine will do a good job. Even if a good bait program has been very satisfactory in suppressing large numbers of gophers, the last few must be cleaned out with traps.



Gophers like avocado roots.

It is quite a thrill to grow the best replants in the neighborhood. Try it and see. But don't condemn yourself if your replants won't grow where old trees were removed due to root rot. No one can make them grow there.