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IRRIGATION OF NEWLY PLANTED TREES

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Avocado nurserymen are often asked how young trees should be watered during their first year in the orchard. I'm always delighted by this question because the rate of development of new trees is so dependent upon the initial and follow-up irrigations during their first year. The trees from our nursery come packaged in tarpaper or polyethylene sleeves, but the recommendations given below should apply equally to all young trees planted on well-drained soil.

INITIAL IRRIGATION

Our recommendation at planting time is that the trees be thoroughly soaked in the planting hole as soon as possible. This is best done with a pool of water, in a three-or four-foot basin, and is necessary whether the surrounding dirt is wet or dry. It can be accomplished with a hose, a nurse rig, or spitters turned upside down in the basin. Sometimes it is done on the flat by planting trees in preformed furrows and running water over them. By any method it must be done thoroughly and preferably within one or two hours after the ball is covered with loose planting dirt. We recommend a second, briefer watering later during the planting day.

It is useful to keep in mind that these trees have recently undergone the shock of their lives. If balled, their most active feeders have been severed. If potted, many of the best roots have lost their protective potting shell and are now exposed to a stern environment of rough dirt and air spaces. They must have water, and soon.

Also, the loose surrounding soil must be quickly settled. Water is nature's ground settler and simple tamping will not do. Thorough settling allows water to seep in toward the ball where the action is. The young tree will suck water quickly from the ball itself, so that a soil bridge for the surrounding water needs to be established. It is for this reason that initial sprinkling, even with spitters, is so often unsatisfactory.

One precaution: The initial watering must not be prolonged. It is difficult to say how long is too long. Certainly twenty-four hours of standing or running water over the ball of a young tree is dangerous. We have seen many trees wilt beyond recovery from this treatment, as a rule of thumb, we recommend thirty minutes to two hours for the first soaking, depending upon the amount needed to thoroughly dissolve clods and uniformly settle the soil.

THE FIRST TWO MONTHS

We follow the initial watering of new trees with an additional, similar, single irrigation the day after planting. We repeat, three days later. From this point on we recommend

irrigations once each 5-7 days for a period of six or eight weeks. These waterings may be performed by basin, sprinkler, or spitter set right-side-up.

THE REST OF THE SUMMER

Your tree has been in the ground six or eight weeks and has extended its roots through the soil bridge to forage in the surrounding terra firma. This is the time to broaden your water pattern if you have not already done so. In a natural setting most of the water a tree receives is outside of the dripline. This means that, as roots deplete the water near their center of concentration under the canopy, they reach into the surrounding soil which now must be irrigated. Abundant moisture and aerated soil are prime stimulators for growing root tips. We are convinced that this broadening of the water pattern results in increased growth and, strangely, in greater tree uniformity.

The rigid once-a-week watering schedule is unnecessary now and water requirements can be judged with tensiometers and a soil probe. Check the soil frequently with a probe to make sure it doesn't stay muggy. Avocado roots rot quickly if sogginess persists. We know of many individual trees planted on clayish soils which have made satisfactory initial growth only to wilt (and sometimes die) late the first summer or in the second year.

WEEDS

Weeds, of course, compete severely with a young tree and the ground should be kept clear for several feet around it. When the soil on the tree side is wet and the other side is dry, the weeds' lopsided root systems can reach great distances into the tree's root zone.

We like to see the use of a good mulch of sawdust, weedless straw, or other non-compacting material. It not only discourages weed growth, but prevents the basin surface from cracking and drying.

CHLOROSIS

One problem often cropping up in new plantings is chlorosis of individual trees. In Ventura it is most common on hillsides, with chlorotic trees showing up here and there about four to six weeks after planting. They will not develop properly if allowed to remain in this condition. It can be corrected in ninety percent of the cases by application of a heaping tablespoon of Geigy 138 Sequestrene (an iron chelate) sprinkled in the tree basin. Results begin to show in three or four weeks. A second or third application may be necessary later, but in most cases the trees fully recover when the roots extend into surrounding soil. Don't substitute another iron product for Geigy 138. It is expensive by the pound but reliable and cheap by the tree.

NITROGEN FERTILIZATION

Fertilizing practices for young trees are quite variable. We recommend that a tablespoon of ammonium nitrate be sprinkled in the basin about one month after planting and that this be repeated every two to four weeks. When you begin to extend the watering pattern, spread the fertilizer with it and use a little more. For maximum growth, young avocados need more nitrogen than they will in later life for best fruit set. These quantities, applied with enough water, will not burn the trees.

Elements other than nitrogen and iron may be unavailable in your soil, of course. A soil laboratory can give further recommendations based on laboratory analyses of leaves and soil.

INTERPLANTS

Interplants are always a problem since they require so much more and different care than the surrounding trees. Irrigation is even more important here because the larger trees quickly invade the concentrated water supply of young plants. Roots of large trees end up where the water is, around the ball of a newly planted tree. To forestall this piracy give the young ones water often and spread the pattern out early.

The foregoing recommendations are offered as general guidance; special soil and water conditions can alter procedures. In many orchards a variety of conditions exist and different areas will require different timing and quantities of water. If you are endeavoring to grow trees in a shallow soil with an impervious layer beneath, or on a tight clay or dense silt, you will have to modify the procedures. This is when irrigation really becomes a gambler's art. The soil must be wetted and settled—yet not remain soggy. I wish you the best of luck!

One thing is clear! A properly irrigated and fertilized young tree is a remarkably fast growing organism. We have seen young trees reach a full and lush height of six feet in a one year period. In each case weed control has been excellent and the trees have received abundant and frequent irrigations during the first summer.