

Planting Avocados

It seems like the simplest thing is the hardest. Recently I was called out to evaluate why newly planted trees were failing at two sites and they both had a common problem. In one case the trees had been planted too deeply at the beginning. At another, a large amount of planting amendment had been incorporated, and over a year's time the trees had settled, so that they too had their graft unions covered with soil. In the latter case, the trees' unions were 4-8 inches below grade. It seems appropriate to review basic planting practices. In the best case scenario trees are planted from February to May, but depending on the area they can be planted at other times, as well. Gentle handling of the trees from nursery to the field and into the ground is essential, especially for clonal rootstocks.

Basic planting steps

1. Dig a hole somewhat wider, but no deeper than the sleeve that the tree comes in. Making the hole wider (18 inches) allows room to manipulate the tree by hand and remove the sleeve once it is in the hole. Making the hole deeper than the sleeve allows for soil to accumulate around the graft union. Even if the hole is backfilled to the "appropriate" depth, because of subsidence of the loose earth, the tree can become buried. Do not put gravel in the bottom of the hole. This is commonly thought to improve drainage. It does not, it makes it worse.
2. Gently tamp loose earth around the tree. Do not back fill with a planting mix. This creates a textural discontinuity which interferes with water movement both to and away from the tree. The fill soil should be free of clods to avoid air gaps and poor contact between roots and soil. Do not cover the root ball with soil; the irrigation water needs to come into direct contact with the root ball.
3. The trees should be watered as soon as is practical after planting. Create a basin 3 feet in diameter around the tree and fill with about 5 gallons of water.
4. Using drip irrigation the, the emitter should be attached to the trunk, so that water goes directly onto the root ball. Shrinking and swelling of the polyethylene tubing can move the emitter off the ball.
5. Prior to winter rains, the basins around the trees should be broken down to prevent soil saturation. After about 4-6 months the drip emitters can be moved from the trunk to 6-8 inches from the tree. Moving the emitters avoids keeping the trunks wet and reduces the likelihood of crown rot.
6. In most situations, newly planted trees should be irrigated every 5-10 days with 2-5 gallons of water for the first 2-4 months until the roots get out into the bulk soil. Depending on what the weather is like, they still might require frequent irrigations, because the rooted volume holding water is still small. After the first year in the ground, another dripper can be installed on the opposite side of the tree. As the tree grows the number of drippers should be increased or the system converted to fan or microsprinklers.

In root rot conditions

Planting in ground that has had root rot can add some new steps to the planting process. On relatively flat ground (<15 degree slope) trees will benefit from being planted on a berm or mound. This creates better aeration and drainage for the roots. It also means that the trees tend to dry out faster, so more frequent irrigation may be necessary. Where machinery can be employed, creating berms is usually less expensive. Surrounding soil should be scraped to the planting site, and little incorporated with the soil surface where the berm or mound is to be built. In bringing surrounding native soil to the planting site, it is important that an interface between the imported soil and the soil surface is not created that alters water flow through the mound into the bulk soil. The berms can be built 1.5 to 2 feet high with a 4:1 slope. The raised planting position should be irrigated to settle the soil. The soil should then be allowed to dry out prior to planting to avoid mucky soil. Only clonal rootstocks should be replanted into root rot soil. Applying gypsum (15 pounds per tree), a thick layer of mulch around the base of the tree (3-6 inches deep, but not immediately on the stem of the tree) and finally application of fungicides will help. Application on the berm or mound also protects the soil from eroding away with rains.

The key to root rot has always been dependent on irrigation management. There is nothing more important than getting the right amount on at the right time. If you are doing interplanting into an existing orchard

where trees have died, it is imperative that the new trees be put on their separate irrigation line so that they can be irrigated according to their needs. Simply putting a smaller emitter on the young trees compared to the older trees means that they will still be irrigated on a cycle that is not optimum for their survival. It doesn't matter if you are using clonals; they will die just as easily with poor water management as a seedling.