

Avocado Tree Decline

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Vista

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I feel that tree decline is largely the result of improper soil management, except in those cases where avocado trees should never have been set out to begin with. Here in Vista we have several major soil types; and will, consequently, have varying methods of tree crop management. Avocados can be grown on many of these soil types with fair success if the manager, or grower, handles his grove according to conditions.

Lots of avocado orchards have been fairly successful under management systems that seemed O.K. at the time, but which brought about soil conditions after a few years (8 to 12) that resulted in decline.

Obviously, your soil management plan must be considered in the light of what it will do to soils and trees over a period of years.

I will try to sketch an outline, in the following paragraphs, of how I think avocado trees should be handled. A person who is interested in avocado culture may be able to use this outline as a guide to avocado tree crop management on his place. I write as a layman to a layman.

Out of several hundred orchards I have visited in the last twenty years— from Santa Barbara to the Hamilton Ranch in Lower California—I can recall but six that were planted on soil that did not need building up to support healthy trees.

A prospective grower should choose the best piece of land he can find. Then he should incorporate with the soil an ample supply of soil-building materials before the trees are set out and during at least the next eight or ten years. Supplementing this program should be applications of nitrogen, so as to get one unit of nitrogen to twenty units of organic material. My experience indicates that this program will greatly reduce the likelihood of tree decline, if practiced on soil at least 18 inches deep, and having an undisturbed 3% grade for drainage through the cross-section, or adequate drainage down through subsoils.

Soil that is alive with rapidly decaying waste organic material will liberate soluble plant nutrients to feed and make healthy trees. Without humus, soils are tight and compact when wet, and hard when dry. These conditions will lead orchardists to apply more water than is needed; the over-irrigation will start or increase tree troubles.

The poorer your soil, the more care you must take in irrigating. It is easy to "suffocate" avocado trees in poor soil. They like plenty of water, but they are temperamental, and will not tolerate "wet feet."

Avocado trees don't care what method you use in applying water; they want it when needed, where needed, and in the amount the soil will hold without remaining saturated. **When** is when the soil is dry, and this can be determined only by use of a soil tube or augur. Where is where roots are located, and roots are densest on a radius extending a couple of feet beyond the drip of the tree. **Amount** to apply can be determined by a penetrating rod used during irrigation.

When water has penetrated to 18 inches, you can stop irrigating. The amount of water soils will hold varies according to soil type, and ranges from three-fourths gallon per cubic foot to eight gallons per cubic foot of soil. Thus, you can see that the time of irrigation will vary accordingly.

Weak Trees Are Poor Insurance Risk

Extreme changes in temperature, excessive infestation of Avocado Brown Mite, excessive root and top pruning, use of hard water for irrigation, or anything weakening the tree or causing distress may aid in bringing on tree decline, in my opinion. I am convinced that this fungus (**phytophthora cinnamomi**) we hear so much about gets in its deadly work as the result of improper soil management. The trees have been near death before the fungi started operations; maggots ate up my horse after she died, but maggots didn't kill her.

Well, Ed., these are hastily composed random thoughts; I hope they'll be of some value to you. Avocado growing is a profession. It takes work, common sense, and cooperative marketing. It isn't a game, and the prudent grower in the **proper location** can always make money.

The greatest handicap to date in this business is the lack of experience of the growers. This is gradually being overcome. My bet is that in the next few years, the trees and the humans that handle them will become so well acquainted with each other that avocado growing will be as well established in California as orange growing.