

## MOISTURE CONTROL IN RELATION TO AERATION OF SOIL

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Probably the most important phase of orchard management is supplying an optimum amount of soil moisture.

There are many factors concerned with ideal tree growth and the production of fruit, but the grower has very little control over most of them.

The best results may be accomplished through a study of the relationship of the soil and soil moisture to tree growth resulting in the production of fruit.

Soil texture is an important factor. A soil composed of fine particles which means a high clay and silt content, has a high moisture holding capacity with slow downward penetration of water following irrigation and rainfall. The result is a long period during which the soil lacks sufficient air for the root zone.

A soil which is composed of coarser particles does not hold moisture for as long a period against gravity, therefore penetration is much faster in a downward direction and the supply of air is replaced in the soil much more speedily.

The avocado root system is thought to be as susceptible to a lessening of the air supply in the soil as any other plant, therefore every effort should be directed toward replacing the air to the root zone following irrigation as soon as possible.

Since a major portion of the feeding roots are in the surface soil, twelve to twenty-four inches in depth, that portion of the root zone needs especial attention so far as moisture is concerned.

It maybe necessary then to give a light application quite frequently to the surface soil. The interval between irrigations would depend upon the demand for moisture which of course is based upon weather conditions and would be closely correlated with the texture and structure of the soil.

Moisture supply as already indicated is necessary throughout all of the root zone of the tree, therefore an occasional deep irrigation *is* required. A careful study of the supply of moisture in the lower depths of the root zone as well as the surface soil is important.

Irrigation may evolve into an alternate operation of a shallow and a deep irrigation program.

In addition to the foregoing program, one or two heavy applications of water which will leach from the root zone salt accumulation may be necessary during the irrigation season. Leaching is especially a worth while consideration in an area where the available irrigation supply is high in salt or alkali content.