

THE MULCHED BASIN SYSTEM

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The mulched basin system of orchard practice and irrigation seems to be well adapted to avocado trees on account of their wide spreading habit of growth.

Through the employment of the mulched basin, proper conditions are created for the existence of the angle worm or earth worm, which is an improver of the soil.

The earth worms fairly honeycomb the soil with their burrows; they make channels which permit more free circulation of air, and aeration is far more important than is generally believed. Plant foods are liberated and made available to a large extent, by oxidation, which requires the presence of air.

Earth worms also make it possible for roots to penetrate more deeply, for the fragile fibrous rootlets are known to follow worm burrows to a considerable depth, in soil so dense and tight that they would have difficulty in penetrating, except for the aid of the earth worms. The soil, after passing through the digestive tract of earth worms, where it is pulverized and treated chemically, is the very richest of manure. The worms also help to distribute the organic material throughout the soil while their burrows facilitate the absorption of water in heavy land.

Almost without exception a good soil is a wormy soil, but a soil that is deficient in humus (decayed organic matter) has no worms. The same soil when well manured will soon have a fair quota of earth worms.

Where the irrigation water contains alkali, salt or other harmful minerals, the use of the mulch greatly reduces the further addition of such soil, as it conserves the moisture already present.

The unnecessary washing away of valuable soil elements and fertilizers is minimized through the use of the mulch, first because the water is not so apt to wash, and second the number of irrigations are reduced to the minimum, through moisture conservation.

The mulch keeps down weeds and prevents the excessive accumulation of soluble plant food at the surface during the summer and as clean cultivation is not necessary under the trees the formation of a plowpan is impossible.

The mulch maintains a uniform soil moisture and temperature condition at all times. In the summer the mulch protects the delicate surface feeding roots of the avocado from injury due to the excessive heating of the soil by the sun. Especially on sandy soils is this true. And in the cool spring months the mulch maintains a warmer uniform temperature, especially in cold localities where the ground is apt to be covered with a light frost.

Where deep cultivation is practiced many of the surface feeding roots of the avocado

tree are injured, lowering the vitality and fruit production and as little or no cultivation is needed where the mulch system is in use such mutilation is avoided. Deep cultivation is probably not so harmful on good deep soils but on shallow soils it must be practiced with caution.

A good mulch probably assists in getting a more satisfactory setting of fruit, while the maturity period is probably considerably lengthened.

Almost without exception, where avocado trees grow wild the ground is covered with an accumulation of fallen leaves, nature's own mulch.

It is inadvisable to employ the mulched basin system on low heavy soils that have poor drainage.