

PRUNING AVOCADO TREES

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Left to their natural growth habits, avocado trees attain considerable size. Fuerte, the industry's standard, is vigorous, producing a large spreading canopy. Bacon and Zutano, varieties which have recently come into prominence, are tall, upright growers of high vigor, while Hass, another popular variety, produces an upright, moderately-spreading canopy of medium vigor. Rincon, a variety recommended for some areas in Ventura and Santa Barbara counties, produces a spreading canopy of low vigor and does best when topworked on vigorous, established trees. These types are typical of the growth habits of commercial avocados grown in California.

Since avocado trees grow irregularly and different varieties have different growth habits, pruning methods will vary. Trees which tend to develop spreading canopies do best with a minimum of pruning. Tall, upright varieties, which become veritable "beanpoles" producing fruit high above the ground, can benefit from judicious training, especially during the first years of the orchard's life. To prevent the upward growth of the main leader, the terminal buds should be removed. This stimulates the growth of lateral branches forcing the tree to spread out and become more compact. Danger of breakage from wind is reduced and the fruit will be borne on limbs closer to the ground where it can be picked more easily. Excessive pruning of young trees will slow their growth since food producing foliage necessary to the tree is removed.

The yield of bearing avocado trees is in direct proportion to the amount of healthy fruitwood and foliage on the tree. Experience has shown that heavy pruning does not increase production but reduces it by stimulating new vegetative growth at the expense of fruit production. The shock of pruning can be lessened by selective removal of growing tips which gets rid of unwanted branches before they are formed. This might be termed "preventive" pruning and results in the loss of a minimum of food producing foliage.

The main value of pruning is to produce an orchard where harvesting, pest control, irrigation and other practices may be carried out economically and efficiently with maximum production. Not enough data is available on which to base a recommendation as to the best tree size to obtain maximum per-acre yields. Large avocado trees

sometimes produce tremendous amounts of fruit, but harvesting costs in these orchard are high, and spraying is more difficult if pest control is needed. Indications are that a larger number of smaller-sized trees per acre will yield as much fruit with lower production costs. Whether or not avocado trees can be satisfactorily kept to a given size is unknown. Since heavy cutting lowers yield and stimulates new growth, a better way to control size may be by frequent light pruning whereby new growing points are pinched or cut out. The frequency and amount of pruning needed will depend on the variety and vigor of the tree and upon the environmental characteristics of different avocado-growing areas.

Pruning to control the height of avocado trees requires constant follow-up. Regrowth after topping is vigorous and rapid and the trees soon regain their original height unless the new growth is thinned and cut back. In a few cases, mechanical toppers have been used to control the height of avocado trees. So far this has not been too successful since mechanical pruning stimulates even more vegetative growth than hand pruning. In hand pruning, cuts are made as close to lateral branches as possible to reduce new sprouting. Mechanical pruning does not do this and two or three shoots develop from around the end of each cut branch. Mechanical pruning plus the use of growth inhibitors to delay foliage formation may prove feasible, but so far this work is in the experimental stage.

Pruning in early spring gives a greater stimulus to vegetative growth than pruning during mid-summer, while pruning in late summer or fall will cause regrowth which may not harden off and is more susceptible to frost injury.

The removal of low-hanging branches to facilitate sprinkler irrigation, cultivation or mowing, and other orchard operations may be necessary. Again, cutting should be kept to a minimum since the removal of large branches will cause more growth higher on the tree.

The removal of dead wood in the orchard will help prevent Dothiorella rot in coastal areas and also make picking and pest control easier.

Some attempts have been made to regulate alternate bearing by pruning. Preliminary tests carried out by Miller and Rounds on the Hoeger Ranch near Corona on the Nowels variety indicated that alternate bearing could be evened out to some extent by removing shoots extending beyond the general contours of the trees before a heavy crop year. Yields for the on crop year were reduced and yields the following year were increased over the check trees. At the end of a four-year-period, the cumulative yields from both check and pruned trees were the same. Whether or not pruning would reduce alternate bearing tendencies in other varieties is not known.

In general, avocado trees require an abundance of healthy foliage to assure high yields. In most cases such an abundance is best achieved by pruning only when absolutely necessary to carry out other orchard operations.

RECOMMENDED READING

- (1) Prune Avocado Trees Cautiously, R. G. Platt. California Agricultural Extension Service Leaflet No. 140.

- (2) Avocado Pruning to Regulate Crop Production, Marvin Miller. California Avocado Society Yearbook, 1960 pp 42-44.
- (3) Evergreen Orchards, William H Chandler. Published by Lea and Febiger, Philadelphia, 1950. pp 208-228.