

New Findings Revealed at Avocado Field Day

Highlights of the recent avocado field day held in connection with the Avocado Institute at La Habra are here briefly summarized by the Agricultural Extension Service in Orange County.

Nitrogen requirements of the avocado tree are not greater than that of the citrus tree, according to findings of H. S. Cameron, Division of Subtropical Horticulture, U.C.L.A. In fact, indications point to a more efficient nitrogen economy in the avocado. In general practice, the application of nitrogenous fertilizer can be less per acre for avocados than for citrus because of the lesser number of trees per acre in the avocado orchard. There have been no measurable benefits from the use of potash and phosphates, especially where manures have been a part of the fertilizer program.

Experimental observations in the La Habra Heights district by Prof. R. W. Hodgson during the past four years or more has shown that the fruiting and alternate bearing habit of the avocado tree can be materially affected by removal of part of the crop in the on-crop years. In years of heavy crops, like the past season, fruit thinning at the proper time will tend to increase the set for the next year which would ordinarily be the off-crop year. Trees from which fruit was entirely removed in June, 1938. Now have a good crop of fruit for 1940, which will be a short crop year for the industry.

Climatic uncertainties will make it inadvisable to adopt the thinning process in a wholesale manner, but growers may find it profitable to try the thinning process on a few trees, experimentally, and gradually learn the physical and economic responses under their own orchard conditions. The process may be varied (1) taking the entire crop off the tree, or (2) removing all the crop from part of the tree. For Fuertes, the thinning stage would be in June or July.

Where healthy trees are inclined to be consistently poor bearers, top-working with scion buds from high producing parent trees of known record is recommended.

TREE CROWDING

A splendid demonstration of correcting tree crowding in a close planting was seen at the Raymond Marsh orchard. Here trees were originally planted 20 x 20 feet, making a dense growth accentuated by the added years of growth, as the trees are getting older. They are now about 15 years old. Mr. Marsh has taken the bull by the horn and is now removing every other tree in alternate rows. This is providing better spacing for the admittance of light that is so necessary to the production of fruit buds.

The problem of crowded orchards is becoming more acute as the trees increase in size and age. Walnut growers long ago learned that production was seriously impeded by too close planting. Where spacing was increased, yield per acre gradually improved. Avocado growers will do well to consider the problem of tree competition for light.

CULTIVATION AND EROSION

Cultivation has been discontinued in a growing number of avocado orchards. Storms of recent years have removed considerable quantities of soil in the foothill orchards, which has created the problem of thin soils on the upper side of the orchard and heavy deposits of soil on the lower end. The unbalanced soil condition has resulted in many cases of deficient soil fertility and rooting zones in the upper parts and choking layers of soil in lower parts. This has contributed to crown rot and other depressing conditions reducing the vitality of root growth. Needless cultivation has been replaced with permanent cover of a non-competitive grass, such as Italian rye grass, in many cases. The maintenance of proper fertility and moisture balance must not be overlooked in a non-cultivation program, the Agricultural Extension Service points out. It must not degenerate into a system of neglect. It is not a lazy method, but demands diligence and watchful management. Mr. Marsh believes the underhead or low sprinkling system is well adapted to the non-cultivation program. It allows a very flexible control of the amount of water applied as well as the penetration. He uses a portable battery of sprinklers, applying at the rate of one-half to three-fourths inch per hour to avoid any possibility of soil erosion. The average total application of water per year has been 12.1 acre inches per acre on this 15 year old orchard, according to Mr. Marsh's records. The range has been from 10.2 acre inches in the years of greater rainfall to 15.2 acre inches per acre in the drier years. The soil auger or tube is used religiously in determining the moisture requirements.

Two pounds of nitrogen per tree per year, usually in the form of sulphate of ammonia, has been the usual fertilizer program on this orchard. This has been made in two applications. The cover crop and all the prunings from the trees are returned to the soil and no organic matter is lost.