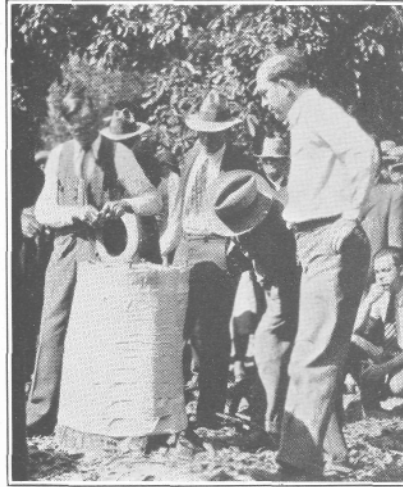


Top-Grafting the Avocado Tree

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Demonstrating top-grafting to group of growers at the B. H. Sharpless grove, Tustin. 2nd Annual Avocado Institute, Tustin, February 27, 1932.

Making over an avocado tree, by grafting, is a major operation. The principles involved are simple enough when fully understood, but there are a number of different rules or requirements which must be met if the result is to be successful.

Three main objectives to keep in mind are: First, to work toward a well balanced result by inserting scions in the best positions on the main stump rather than in weak positions or on side limbs. Second, to so develop the new shoot by careful training and pinching of new growths that the top may be strong enough to resist winds and not break out. Third, to so protect the stump from sunburn and the cut surfaces from decay that it will eventually heal over clean and sound.

Where it is possible, I prefer to graft trees about three feet from the ground. However, in some cases trunks are crooked, scarred, or in the case of an old budded tree, restricted at the bud-union. In such cases, it is better to get below the scars or scion and graft directly into the original root-stock even if this necessitates some excavation of the soil. Such low grafting calls for proper tools, good workmanship, and careful selection of scions. Sanitation is important when operating on a tree as it is when operating on an animal. In order to avoid decay of old wood and get healthy strong growth of grafts, contamination should be avoided by keeping clean all tools, the fresh cuts, and the hands of the operator. Every care should be exercised to prevent bruising the bark in the vicinity of the scions.

The avocado tree is peculiarly susceptible to sunburn. The most satisfactory way I have found to prevent sunburn is to wrap the stump with paper and cover the scions with an inverted tough paper bag in which small holes have been cut to provide ventilation. These holes may be enlarged as the scions start growth, and when the new shoots are a few inches long, openings should be made in the bag through which they are to grow. The bag itself is not removed until the leaves of the scions have grown sufficiently to provide some shade.

If more than one graft grows, care should be exercised in selecting one or two which are to remain and the others should be suppressed gradually by systematically pinching them back rather than by cutting them off entirely. The temporary retention of the growing scions which are not destined to form a part of the top is of value in keeping up sap circulation around the edges of the wound, and greatly assists the process of healing over. It is important to do everything to encourage the complete healing over of the cut surface as soon as possible. The longer this is delayed the more likely it is that wood decay may get started.

Very soon after grafting, suckers appear, and it is best not to remove them entirely, but let them grow awhile to help keep the sap circulating. By systematic pinching back, they may be kept from crowding the scions, and after the scions are well established and have developed considerable foliage, the suckers may be cut off smoothly and the wounds painted.

Where this policy is carried out, the new top should develop with such strength and sturdiness as not to require staking except where the tree may be subjected to heavy winds. In windy locations, grafts should be protected by a strong stake and a bridle or loose binder of soft material.

I wish to emphasize that cutting off the tree and placing the grafts is but the first step in a process extending over a year or more. Careful nursing, pinching and training during early growth is required if the new tree is to be fully satisfactory.

Marketing Act Strengthens Cooperatives

"Farmers must organize and concentrate their selling power to meet the concentrated buying power of the men who handle their products in the process of marketing and distribution."

This solution to the great problem facing farmers of the United States was offered by William P. Schilling, Washington, D. C., member of the Federal Farm Board.

Large corporations of middlemen who recognize this fact, are strenuously fighting cooperative marketing organizations, Mr. Schilling declared. He enumerated instances of highly concentrated buying power by the markets of tobacco, dairy products, cotton, wool, and livestock.

"Despite organized opposition and other obstacles, cooperatives have generally increased their membership and volume of products handled during recent years," Schilling said. "This is indicated by the fact that the total business transacted by cooperative associations in 1930-31 was \$2,400,000,000 compared with

\$2,300,000,000 in 1927-28.

"The most important progress made in the cooperative movement since the Agricultural Marketing Act was passed has been in the centralization of the sales activities of the local and regional cooperative sales agencies," Schilling declared.

The Agricultural Marketing Act has greatly stimulated the organization of cooperatives for the handling of farm products, he asserted. More than a million and a quarter farmers are now members of cooperatives participating in the various centralized sales agencies.

Reasons for opposition to the act by middlemen corporations he summarized as follows:

"The earnings available for dividends to common stockholders of concerns handling dairy products were 42 per cent greater in 1931 than in 1928. In the same period the gross income of agriculture dropped 41 per cent resulting in farmers suffering a deficit upwards of one billion dollars last year.

"I think you will agree that these figures tell why there is so much opposition to the farmers' effort to control marketing his own products."