

HYBRID AVOCADO TREES BEING TESTED IN VENTURA COUNTY

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When two, or more, avocado growers get together, one of the major problems for discussion is "Do we have the right varieties, and what can we do to secure the right varieties for our locality?"

We have many good varieties at the present time, but are we satisfied with those varieties? Do these varieties have good trade acceptance? Do they appeal to the eye? Are they high quality? From the growers' viewpoint do they produce consistent crops so that the grower may have an income each year from his crop? Many of these questions have not been answered up to the present, but we are making strides along that line to try to get some answers to some of these questions. Many seedlings have been tested over many years and most of the named varieties at the present time were good seedlings that were given a name. But are we satisfied with these? Growers in Ventura County have been experimenting with seedlings for a number of years and a few of them have proved to be of commercial value, but trying to get all of the good characteristics into one fruit is a large undertaking.

The University of California plant breeders at UCLA have been interested in developing new varieties for many years and several of the good varieties were crossed by the plant breeders so as to develop fruits that might have the desired characteristics. Some of the earliest work at UCLA was done by Dr. Walter Lammerts, followed by Dr. Royce Bringhurst, and later by other plant geneticists, including Dr. B. O. Bergh, who is handling this work at this time. In order to test these new hybrids, it is necessary to get them out in several counties. Ventura County was selected as one of the counties to test a great many of these hybrid trees. Grafting wood from some of the original crosses was used and later some of the open-pollinized seedlings from the original crosses were grown and placed on cooperators' properties in Ventura County. Among the first plantings established was one under the direction of Harry Forbes at the Camulos Ranch, Piru. Approximately 20 different crosses were obtained and these were propagated by the use of grafting wood from some of the original crosses. In 1952 and 1953 approximately 200 open-pollinized known-parentage trees were obtained from Dr. Royce Bringhurst from UCLA and brought to Ventura County. These trees were set out on 37 cooperators' properties from the coast on the west to the Los Angeles County line on the east, and into the Ojai Valley on the north. From one to thirty trees were planted on cooperators' properties. The purpose of this project was to determine the growth habits of the trees, their vigor, the type of fruit produced, its size, color, shape, size of seed, time of ripening, its flavor, amount of fiber, and whether or not it tends to alternate in its fruit bearing habits, and then the most important thing was to determine trade

acceptance of the fruit when placed on the market. A large percentage of the trees have produced fruit to date.

In this project we used such crosses as Fuerte-Anaheim, Fuerte-Hass, Fuerte-Mexicola, Duke-Edranel, and Hass-Blake. Later on, crosses such as the Hass-Clifton and Anaheim-Zutano were also included in this project.

When the trees came into bearing no two trees of a similar cross were the same. There were more promising trees in the Hass-Fuerte cross than in any of the other crosses. Although there were several Fuerte-Mexicola crosses that looked good, we have noted many different sizes, shapes, colors, seed sizes and blemishes of various kinds in many of the crosses. Many of the Fuerte-Mexicola crosses ripen earlier than the Fuerte, and some of these are being tested in some of the other counties where weather conditions are somewhat warmer than in Ventura County. Many of the fruits have been evaluated to date, and some of the better ones are indicated in the chart at the end of this article.

HYBRID AVOCADO EVALUATION — VENTURA COUNTY															
Hybrid Varieties	Variety Cross	Date Tested	A—Anaheim					D—Duke		E—Edranol		F—Fuerte		M—Mexicola	
			Wt. Fruit Ounces	Color Fruit	Wt. Seed Ounces	Seed % Wt. of Fruit	% Oil	Shape Fruit	Amt. Fiber	Flavor	Remarks				
Creelman T1—51007	FxH	3/25/59	10½	Green	1½	15.9	17.5	Pear	Light	G-E	Resembles Fuerte				
Nichols T10 51-5	FxH	3/25/59	12¾	Green	1¼	9.7	16.5	Pear	None	G-E	Tree alternates in its bearing habits Turned dark on ripening				
Thille R8 T 11 51-7	FxH	4/21/60	13½	Green	2	14.8	17.1	Pear	Light	G					
Thille R9 T 5 52-22	FxH	11/4/59	8¾	Green	1¾	15.9	20.7	Pear	Light	E					
Thille R8 T 12 51007	FxH	4/21/60	10½	Green	1¼	16.6	8.9	Pear	Light	P	Not mature enough at time of testing Seed loose in fruit				
Camulos R7 T 15 44082-1	DxE	11/4/59	10¾	Green	1¾	14.4	10.7	Pear	Medium	F-G					
Vanoni T2 51001	FxM	4/21/60	9	Green	1	11	18.2	Pear	Light	G	Slight blossom end blemish. Turns dark on softening				
Nichols T6 51002	FxM	3/25/59	8¾	Green	1¾	19.3	13.4	Pear	Light	G					
Martin T3 52-16	FxM	1/29/58	9½	Purple	1¾	13.0	13.4	Pear	Light	F					
Shawn Plot 1 T 3 51006	FxA	5/21/58	13	Green	2	15.0	8.2	Pear	Light	F	Slight amount of corkiness				
Bowker R 42 T 1 51001	FxM	4/21/60	12¾	Green	2¼	18.5	22.0	Pear	Medium	E	Small blossom end blemish				
Bowker R 42 T 3 51001	FxM	4/21/60	13¾	Green	2¾	18.1	22.0	Pear	Medium	E	Discolors on softening. Corky				

One of the best hybrids noted to date is that on the A. Creelman property in the Camarillo Heights area. This is a Fuerte-Hass cross resembling a Fuerte, green, pear-shaped fruit, with a normal size seed, and of good quality. It ripens from March to June in that area and this year all of the fruit was picked during the last week of April. It has produced three good crops to date. In 1960, 50 to 100 trees of this variety will be planted out in orchard form in Santa Rosa Valley so as to produce enough fruit to put on the market to determine trade acceptance.

Quality-wise the Fuerte-Mexicola crosses have some of the best eating qualities of any of the fruits tested. They are usually high in oil content and have a very good flavor. On the other hand, the Fuerte-Anaheim crosses resemble the Anaheim so far as quality is concerned and in most cases the fruit has a corky appearance, which is not good as a commercial variety.

All of the trees in all of the plots are inspected at least once during the year and fruits that look promising are taken for testing. The oil tests are run by Calavo Growers, Inc., at Santa Paula and other tests are run in the Farm Advisors Office in Ventura.

In the spring of 1959 twelve of the best varieties were set out in a variety trial plot at the Berylwood Investment Company property at Somis, under the direction of Bob Mills, Manager. A similar plot was set out in the Santa Paula area under the direction of John K. Thille on the J. N. Thille property. As new promising varieties are indicated, grafting wood from those trees will be used to develop additional trees in other climatic zones of the county.

The Farm Advisors Office in Ventura has kept accurate records on all of the trees in these plots and each year publishes a progress report on information developed in these plots. This information is on file in the Farm Advisors Office for reference.

The late J. N. Thille had experimented with a lot of seedlings and one of the important ones that he had developed is Hass #4, recently named the Thille. This is now listed as an experimental variety with the Avocado Society.

We have learned a lot about seedling avocados and about crosses in this project. Some of them look good; many of them will be discarded. If we find one or more varieties in this project that has commercial importance then we have learned a whole lot about this hybrid work. Research must go on. We may in the future find the variety of avocado that has all of the desired characteristics.