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Avocado Variety Investigations

Suitability of avocado varieties to climatic conditions of Riverside under long-term tests in experimental orchard

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Avocado varieties found unsatisfactory—for growing in the experimental orchard at Riverside—are changed by grafting or topworking the trees. Topworked trees have ranged in age from six to 10 years.

A large number of avocado varieties are under trial in the experimental variety orchard, and during the years of 1951, 1952, and 1953, records were made of the date of first and last bloom, amount of bloom, and a rating of the crop produced. No attempt was made to separate varieties into early and late flowering classes, but the average flowering period for most varieties was approximately 6-8 weeks. In 1954, some varieties were in bloom as long as 12 weeks.

In 1951 and in 1952, flowering dates for the same variety were quite similar. In 1953, they were generally much earlier than in the two previous years. There does not appear to be a consistent correlation in the amount of bloom with yield, except that a medium to heavy bloom is needed to produce a medium to heavy crop.

The accompanying table includes only three years of yield data, but records on many varieties have been kept for seven years. The most promising producers—included in the table—are Zutano, Duke, Emerald, Hass, and Ryan. The Hass and Ryan are the only two summer varieties that show some promise, based on behavior for a period of years. A few others show considerable promise based on short-time yield records.

The Zutano, Duke, and Emerald have had the best yield record of the fall and winter varieties under test.

The yield performance of all of the Fuerte strains has been disappointing. The yield data given in the table for the Fuerte is typical for the seven years that production ratings were made. No one strain has shown superiority over the others.

Unsuitable Varieties

A variety found to be not adapted to Riverside is eliminated from the experimental orchard—although it might do well under different climatic conditions—and another one is placed under test.

Avocado Varieties
Flowering Behavior and Yields*

Variety	Flowering dates		Amt. of bloom	Yield rating
	First open bloom	Last open bloom		
1951				
Duke	Feb. 3	Apr. 6	H	H
Zutano	Mar. 27	May 28	H	H
Irving	Apr. 8	May 7	F	F
Emerald	Apr. 8	May 25	M	M
Halsted	Apr. 18	May 23	L	L
Hass	Apr. 15	May 26	M	L
Ryan	Apr. 10	May 23	H	F
Clifton	Apr. 6	May 8	M	F
Regina	Apr. 17	May 30	M	L
Fuerte**	Mar. 27	May 25	M to H	M on 6 trees, others F to L
1952				
Duke	Mar. 26	Apr. 26	H	L
Zutano	Apr. 4	May 20	M	L
Irving	Mar. 26	May 7	H	H
Emerald	Apr. 8	May 22	H	H
Halsted	Apr. 12	May 22	M	H
Hass	Apr. 4	May 24	M	M
Ryan	Apr. 3	May 16	H	H
Clifton	Mar. 26	May 14	H	H
Regina	Apr. 14	May 23	M	H
Fuerte	Apr. 2	May 16	M to H	H on 3 trees, others F to L
1953				
Duke	Feb. 15	Apr. 1	H	M to H
Zutano	Mar. 9	May 18	H	H
Irving	Feb. 24	Apr. 20	H	F
Emerald	Mar. 25	May 26	M	M
Halsted	Mar. 24	May 20	L to M	L to H
Hass	Mar. 26	May 2	L to N	L to N
Ryan	Mar. 26	May 18	L	F
Clifton	Mar. 9	May 5	M	L
Regina	Mar. 24	May 24	L	N
Fuerte	Mar. 9	May 10	M to H	M on 2 trees, others F to L

* Both bloom and yield are arbitrarily rated: L—light; M—medium; H—heavy; F—few; N—none; and are approximate.

** Twenty-six bearing Fuerte trees represent 16 strains.

Of the 71 varieties tested, the following are some of those recently eliminated :

Regina—A heavy, alternate bearer of green, pear-shaped winter fruit which —when ready to harvest— is severely russeted and unattractive for the market.

Tomko—A green, pear-shaped summer fruit. Low production.

Sonora—A seedling with a low production record.

Hartman—A green, late summer fruit. Low production.

Campbell—A West Indian variety. No production.

Hoisted—Produces medium to heavy, rather consistent crops of green, somewhat rounded fruit of fair quality. When mature, the light-green skin is severely russeted. Season: January to March.

Tantlinger—A Fuerte-like winter fruit. Production is low and erratic.

Nowels—A heavy producer in alternate years. Fruit runs to small sizes and is rather unattractive.

Season: November to January.

Fuerte Fairbanks—Low production.

Silliman—A hybrid originating at La Habra. Season: April through June. Fruit medium green, pear shaped, and of good quality. At Riverside, the skin russets badly and fruit is unattractive. End spot with severe cracking was found on some fruits.

Varieties Added

In February 1954, the following varieties were added to the experimental orchard at Riverside for study:

Gae—A Fuerte mutation from Orange County. Season: July.

Susan—Mexican type. Bears green fruit ripening in October. To be patented. Originated at Baldwin Park.

Arturo — Originated at Fallbrook. Bears green fruit of good quality which ripens in October. Reported hardy. Patented.

Lodge—Originated at La Mesa. Fruit green, pear shaped, 6-10 ounces, with high oil content. Season: winter.

Frederico—Originated at Vista. The fruit is oval in shape and the skin is green. Season: late October and November. Quality reported good.

Bondoso—Originated at Vista. The green, pear-shaped fruit matures in late October and November. Good quality.

Unnamed hybrid — Mexicola Lyon cross made at University of California, Los Angeles. Fruit color is purple, ripens in early fall. No production data available.

Jalna—A Mexican variety originating at Encinitas. Reported a good bearer, and some trees have been planted inland. Fruit green and pear shaped. Season:

November to January. It was tested in an earlier planting at Riverside, without conclusive results.

Not much information is available on the production of the above varieties since most of them are of recent origin.

Where large trees are topworked, as at Riverside, only a few years are required to determine the important characteristics of a variety. Fruit quality, yield, and hardiness are the main characteristics used to determine a variety's value for commercial planting.

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