

Report of the Variety Committee on Avocados California Avocado Society, May, 1946

At the beginning of this report it would appear proper to take this opportunity to acknowledge the valuable work of the immediate past chairman, Carter Barrett, as well as of others who have made worthwhile contributions to the variety work through the years. During the ten or more years that Mr. Barrett headed the committee on varieties, he gave unstintingly of his time in forwarding the efforts made by the committee to eliminate worthless varieties and to strive toward the ideal of a minimum number of commercial varieties. Prior to Mr. Barrett, Dr. Coit served as chairman for a number of years, contributing much to the work of the committee in varieties. Both Barrett and Coit have contributed in many other ways also to the building of the avocado industry. The variety committee of the society has always been a very active one and the members and chairmen have been enthusiasts. The work has therefore been continually prosecuted with enthusiasm and vigor.

For the benefit of the many new members of the society we plan to make some statements covering the purposes of the variety work, the standard of requirements in a recommended commercial variety and methods used in accomplishing the desired results. Also to give them some knowledge of other activities of this committee which were pursued in the interests of avocado growing as a commercial industry.

The chief purpose of the variety committee is to foster the search for new varieties found usually as seedlings, to study them, both the original and progeny trees, giving consideration to propagation of the trees, their yield and the marketability of the fruit in addition to other characteristics. As part of the program the search for new varieties has been stimulated through registration by the California Avocado Society. The registered varieties are given special attention and an effort made to obtain cooperators who will grow the promising ones in their communities. By means of this plan the performance of new varieties can be determined for the several avocado growing districts of Southern California.

It is realized especially by those who are concerned with marketing the avocado crop that it can be more efficiently distributed and sold by having fewer varieties and by growing only those which are worthwhile. This is better than to have a small volume of each of many varieties, a large number of which are of doubtful value. On page 22 of the 1945 Yearbook of the California Avocado Society is found the total number of field boxes delivered to Calavo Growers during 1945. Of the total, 66% were Fuertes, 93.6% was composed of only ten varieties, and the balance, or 6.4%, made up 83 varieties and seedlings. Marketing such a large number of varieties not only increases the costs of production but makes a more difficult and costly marketing problem.

Varieties differ widely in their climatic adaptation. Those that are of pure Guatemalan race, such as Anaheim, Nabal, Queen, Millie C, Carlsbad and many others, grow and produce more satisfactorily in a coastal area. Varieties of the Mexican race as a rule do

better when grown at some distance from the coast. The hybrid varieties will be found doing well in nearly all areas.

The variety committee has through the years gradually changed its policy as to the standard for a commercial avocado variety. The oil content, flavor of the flesh, freedom from fiber, and general good appearance of the fruit when soft were formerly the main characteristics considered. As the growing of avocados expanded into a commercial agricultural industry, other qualities of a prospective variety seemed to be of greater importance.

The standard now, for an ideal commercial variety, considers profitable and early production of paramount importance. Other important qualities in a variety are a long maturity season, good marketability, and a well shaped fruit with an average of around 6 to 12 ounces in weight. Also, it is necessary for success to have a fruit which appeals to the consumer. Freedom from change of color of flesh or skin, ease in peeling, ease in determining proper softness are qualities desired in a good variety. Other things being equal a green fruit remaining green when soft is the most satisfactory.

Varieties Recommended for Commercial Planting

The Fuerte is established as the major variety in Southern California and can be grown in areas where the spring temperature is warm enough for fruit setting and where the trees and fruit are not subjected to extreme cold during the winter.

The Fuerte is recommended for planting in all avocado districts except coastal San Diego County and the coastal district of Ventura County. In selecting bud wood for Fuertes, special attention should be given to the source of the bud in that the mother tree should have a good yield record, be free from disease, and produce fruit of good appearance.

The Hass is now recommended for commercial planting in the San Diego coastal, the Whittier, the Rivera, the north Orange County and the San Gabriel Valley areas of Los Angeles County. It has many of the ideal properties of a commercial variety but is a dark fruit when soft. In spite of that handicap, it is proving to be very desirable, both from the growers' and consumers' point of view. It has the advantage over the Fuerte in being precocious, since the trees begin to set and mature fruit in some cases in the second year.

The Anaheim is a commercial variety recommended for the San Diego coastal area, yet it can be grown quite successfully in most of the other districts of Southern California. However, from the standpoint of production and appearance of the fruit it excels in the coastal areas, especially in San Diego County. Since the Fuerte is not satisfactory in that area, the Anaheim supplies the need for a consistent and profitable producing variety, and therefore is being generally planted. Unsatisfactory varieties are also being replaced by the Anaheim through top working.

The Nabal has been removed from the recommended list for all areas except the San Diego coastal. It is a very satisfactory variety in that area although the inland part of that county as well as some portions of others have some very profitable orchards of Nabals. However, in intermediate districts, bearing is erratic, and health of trees not

good following a heavy crop. The Nabal is a fruit with an excellent flavor.

The MacArthur, recommended for planting in the coastal area of Santa Barbara and Ventura counties, continues to be popular and its planting is being extended in that area. It is quite satisfactory as to production, shipping qualities and consumer satisfaction.

Growers in their respective districts are urged to top-work varieties which are unprofitable or are poor in quality or both where practicable to varieties which have proved satisfactory for their district.

Table I lists the five varieties recommended for commercial planting in the several areas of Southern California with a brief description of each. Table II gives the recommendations according to areas.

COMMERCIAL VARIETIES

TABLE I

Variety	Market-ability	Season	Color	Oz. Weight	Shape	Oil %	Skin	Seed	Race
Fuerte	Excel	Nov.-June	Green	6-16	Pyr.	18-22	Leathery	Med.	Hyb.
Hass	Good	Apr.-Oct.	Black	6-10	Ovoid	18-22	Med.	Small	Guat.
Nabal	Good	June-Sep.	Green	14-30	Round	18-22	Thick	Med.	Guat.
MacArthur	Fair	July-Oct.	Green	10-14	Pyr.	12-16	Med.	Med.	Guat.
Anaheim	Fair	June-Sept.	Green	12-24	Ovoid	10-14	Med.	Med.	Guat.

TABLE II

Varieties Recommended for Commercial Planting According to Certain Described Areas in Southern California

1. San Diego County, Inland	Fuerte
2. San Diego County, Coastal	Anaheim, Hass, Nabal
3. Whittier, Rivera, North Orange County	Fuerte, Hass
4. Southern Orange County	Fuerte
5. San Gabriel Valley, Foothills, Los Angeles	Fuerte, Hass
6. Ventura and Santa Barbara County, Coastal	Fuerte, MacArthur
Note: Selected "strains" of Fuerte are meeting with success in some locations in this area.	
7. Ventura County, Intermediate Santa Paula, Fillmore, Ojai, Camarillo Heights	Fuerte
8. Interior Riverside, San Bernardino, Corona	Fuerte

Experimental Varieties on Trial

Among the prominent experimental varieties the Tantlinger, a green Fuerte like fruit originating near Santa Ana, is giving some indication of being a regular bearer in coastal areas. It has a good flavor but matures during the Fuerte season, therefore having no advantage other than the possibility of being a consistent producer. It is being tried at Carpinteria, Fillmore, Santa Paula, Westwood, and La Habra Heights.

The Twomey, a green Fuerte like fruit maturing in late spring at Vista, is under trial in a number of locations in southern California and shows some promise at Mr. Stanley Shepard's place at Carpinteria where he has 25 progeny trees.

The Rincon registered in 1945 by Mr. Shepard is a green pyriform fruit maturing in the spring and showing promise as a fruit for Santa Barbara County.

For several years the Frey has been on trial in the San Gabriel Valley, especially in the

Baldwin Park and Covina districts. It is a green summer fruit of fairly good eating qualities. However, it is large and a considerable percentage of the fruits have a slightly crooked neck. It has the advantage of being precocious and bears consistently in the area where it has been on trial for a number of years.

The Bonita avocado, on the experimental list in 1945, has been propagated experimentally in Ventura and Santa Barbara Counties.

The Encanada, another added to the list last year has been propagated to a limited extent but has not had sufficient trial.

The Hellen, also on the list in 1945, has not given promise of being productive in most places where tried. However, at Santa Monica the Hellen has yielded satisfactorily.

The Hazzard, a good quality fruit, is hard to propagate. Further trials are necessary with this variety. It is a consistent bearer at Carpinteria and in other locations on the coast.

The Nowels, a green fruit, maturing in the late fall at Huntington Park, is losing favor because of variability in its bearing and because the fruit is too small when the crop is normal in volume. However, it is on trial in other sections than Huntington Park and may be found satisfactory in one or more of them.

The Halsted is a green fruit maturing during the winter, originating near Redondo Beach and showing signs of early bearing at La Habra Heights on H. B. Griswold's place.

The Society during 1944 and 1945 registered a number of green seedlings some of which are worthy of trial but should be considered experimental in any area where propagated. Three of them mature in the spring but most of them during the summer and early fall in the communities in which they originate. These varieties are listed as follows: Boley at Highland, Carlos at Villa Park, Chapala at Vista, Corona at Goleta, Gem at Pasadena, Glendale at Vista, Graham at La Habra, Jaybee at Hollywood, Raymond at Encinitas, Regina at Los Angeles, Rue at Vista, Tomko at Vista, and Verano at Vista.

Experimental Propagation

Plans are being made to propagate on a comparatively large scale several of the promising varieties for distribution and trial in areas where in the case of given varieties they show some promise of succeeding. The plan is to furnish buds to several cooperating nurserymen and contract with them to grow nursery trees of the varieties requested by the Society. The Society will locate the trees and make plans for distribution to growers who will agree to purchase the trees and report on their performance.

A revolving fund has already been set up by the Board for this purpose.

Sun-Blotch

One of the most important studies to the avocado industry is the subject of sun-blotch. A method of determining whether or not a tree is infected is very important. When it is

possible to readily diagnose cases of sun-blotch, it will then be possible to have registration of trees free from sun-blotch by the State Department of Agriculture. Dr. Wallace, a specialist in virus diseases at the Citrus Experiment Station, is studying sun-blotch and especially looking for a means of quickly determining its presence in avocado trees. The Board of the Society being interested in the project will cooperate in every way possible to assist Dr. Wallace and Dr. George Zentmyer who is working with Dr. Wallace on this project. Our cooperation will consist of work in the field, probably growing trees in the nursery for inoculation and for check plots of trees free from sun-blotch.

Temperature in Relation to Avocado Growing

Since there is a tendency toward expansion of the industry onto the lower lands on the valley floors where frost protection is likely to be necessary, there is considerable interest in having a study made of the relationship of cold temperatures to the growing of avocado trees and the production of fruit. The Fruit Frost Service is ready to commence this project and one of the first phases for study would be a temperature survey of the avocado growing districts. Some financing on the part of the industry will be necessary, but the cost, which will not be great, should be justified by the benefit of having more definite information than we now have in the protection of the trees and fruit from frost.

Rootstock Study

It is imperative that we have more information on rootstocks for avocado trees. Little is now known on the subject. The University at Los Angeles has made a start on this project and field plots have been established by the workers in that institution. The Society is taking an increased interest in this study and has authorized the appointment of a sub-committee of the variety committee to give the subject special attention. Carter Barrett is chairman of that sub-committee and will follow with a report on the progress of the work.

Summary

We wish to emphasize the desirability of carefully selecting the variety or varieties to grow in a given area where plantings are to be made. We also urge growers, who have poor and obsolete varieties, to eliminate them as soon as feasible. However, economic reasons sometimes make it unwise to be too hasty especially in the case of a variety which is quite productive and profitable.

Growers are also advised not to plant too large an acreage of any experimental variety.

Any information on the progress of varieties will be thankfully received by the committee. All cooperators, who are experimenting with varieties, have the thanks of the committee. Among those who are experimenting with varieties on quite a large scale are Arthur Chenoweth, J. Eliot Coit, Harlan Griswold, Domingo Hardison, Stanley Shepard, Thille Brothers, Elwood Trask, and others.

The Committee

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