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REPORT OF THE SUBTROPICAL FRUIT VARIETIES COMMITTEE

Since the inception of the Subtropical Fruit Varieties Committee within the California Avocado Society, it has been the responsibility of this committee to gather information concerning subtropical fruits in Southern California and to function as a registry for outstanding seedlings or varieties of subtropical fruits other than citrus and avocado which have proved well adapted to the climatic conditions in California. Because of the mild climatic conditions required by avocado for successful culture, most avocado growers grow some of these unusual subtropical fruits either in the dooryard orchard for a hobby or as ornamentals. It is altogether possible that in the future some of the subtropical fruits other than citrus may supplant the avocado in many of the areas now affected by avocado root rot, if a solution to this problem through soil treatment or resistant rootstocks is not discovered. Some provision could profitably be made, therefore, for crops alternative to avocado and citrus where it appears that subtropical fruits might be economically adapted to those areas which now or in the near future may be lost to citrus and avocado because of economic or disease limitations. The information concerning subtropical fruits which is developed slowly throughout the years by the growers and groups such as the Subtropical Variety Committee may therefore be of considerable value in establishment of new fruit industries in California if such occasions arise.

Among the several subtropical fruits and nuts which have been found adaptable to California conditions, the macadamia nut has received considerable attention during the past five years. The successful development of a commercial industry in the Hawaiian Islands during the past decade has stimulated an interest in this nut, which has resulted in many inquiries directed to members of the Subtropical Fruit Varieties Committee and to public agencies in Southern California. The committee has endeavored during the past few years to obtain better and more extensive data concerning the adaptation of the macadamia nut to various climatic conditions in Southern California. A systematic investigation is under way to locate and record the better and promising seedlings which now are producing nuts in California. Additionally efforts have been made to import the best commercial varieties from other areas for trial plantings and comparison under California conditions. Preliminary remarks concerning these investigations were included in the report of this committee found in the Yearbook for 1950. It was stated in the report that several macadamia seedlings had been found in California which produced good crops of fine quality nuts. The investigations and observations on these trees are still in progress and search is being conducted for still other trees which have sufficient bearing capacity and good quality fruit for test as possible commercial varieties. While the seedling trees under observation have been designated merely by number or location, some specimens have been propagated by various nurseries and individuals under varietal names. These varieties will be available in the market shortly, hence a brief description is included in this report.

The first named macadamia nut variety propagated commercially in California is the

"Santa Ana." This seedling nut was selected by Mr. Herb Swim of Armstrong Nurseries. The parent tree, planted about 1912, is located on the western edge of Birch Park, Santa Ana, where it has borne consistently heavy crops of moderate sized nuts. The nuts average from 7/8 to 1 inch in diameter. They are characterized by a rough, moderately thick shell which has a pronounced suture or line along one side. The flavor of the kernel is good. The consistent bearing behavior of the parent tree during an eighteen year period of observation has prompted the propagation of this seedling for further trial.

Another seedling macadamia nut now under propagation for commercial trial is the variety "Hall," also from Santa Ana. This seedling is located at the old home place of the late Mr. Hall on North Main Street, where it has been known to horticulturists for the past thirty years. The parent tree, probably planted about 1915, is in rather poor condition, but has produced good crops of excellent quality nuts for many years. The nuts are characteristically round and with a rough or pebbled surface. The nut has the thinnest shell of any found in California thus far and is comparable to the better types observed in Hawaii. The kernel comprises approximately 36 per cent of the nut in the samples analyzed.

A few other seedling specimens of local origin with good size fruit and heavy crops are being propagated to a limited extent by some individuals for trial. One of the foremost problems in the development of macadamia nut varieties is that of propagation. Budding has proved practically impossible. The results with grafting have been somewhat variable but some progress has been made such that a higher percentage of successful grafts may be expected in the future. Pretreatment of scion wood by ringing prior to cutting may be a necessary step in the grafting operation under some conditions and at certain times in California.

The best macadamia nut varieties now grown in Hawaii have been established for trial in southern California. The oldest specimens are about three years in the field, hence little is known of the behavior of these varieties under our climatic conditions. The Hawaiian varieties when grown in Hawaii are characterized by regular bearing behavior, moderately large nut size, high percentage of kernel and by high oil content of the kernel. The varieties now established in California include the Pakau (425), Keauhou (246), Nuuanu (336), Kohala (386), and Kakea (508). The numbers refer to the selection number of the Hawaiian Agricultural Experiment Station. These varieties are under propagation by several nurseries and individuals and should be available in the near future for trial planting in California.

Overshadowing its virtues as an edible nut of exceptional quality, the macadamia nut has assumed a place of potential importance in the horticulture of southern California because of the apparent resistance of this plant to the avocado root rot organism, *Phytophthora cinnamomi.* Preliminary laboratory investigations and limited field trials and observations indicate that the macadamia nut is highly resistant, if not immune, to the soil organism which so readily attacks roots of the avocado. The macadamia, therefore, may be a tree crop of the future in many areas where the avocado now is threatened in southern California. More extensive experimental data must be obtained, however, and more observations must be made before definite conclusions can be drawn on this subject.

The carob, *Ceratonia siliqua,* is a subtropical fruit of considerable economic importance in various parts of the world, especially the Mediterranean area, where it constitutes the basis of an extensive industry. The successful adaptation of the tree to California has promoted its use primarily as an ornamental shade tree for parkways. The potential commercial utilization in the United States of the carob pod as a source of numerous organic chemicals, for use as emulsifiers, plastics, paints, and food for both animal and human consumption has stimulated interest during the past decade in this plant primarily as a dry farm crop, to which it is readily adapted. Additional to its ability to thrive on limited moisture supply, the carob provides an excellent plant material for soil erosion control because of its extensive root system. Our knowledge of the carob and its culture in California has been developed primarily through the effort of Dr. J. Eliot Coit, who has observed the tree and has been instrumental in importing varieties from its native home in the eastern Mediterranean for more than thirty years. There has been established now in San Diego County a demonstration plot of carob trees grown under dry farm conditions which includes a number of varieties of California origin in addition to an outstanding collection of the most important and famous varieties from Cyprus, Crete, Italy, Greece, Tunisia, Sicily, Morocco, and Spain. Among the varieties which have originated in California are Bolser, Anaheim, Excelsior, White, Victoria, Santa Fe, Grantham, Loma, Coffin, Home and Nichols. The most widely planted are the Bolser and Santa Fe, which have been available in the trade for several years. Varieties from the Mediterranean region include such kinds as Trilliria, Femminello, Latissima, Merescene, Racemosa and Amelo. These varieties will be available in the near future to growers who may wish to experiment with the carob as a potential dry farm crop.

While the cherimoya is well adapted to many areas in southern California, it nevertheless has received only little attention from growers as a crop of potential importance. Fruit of excellent quality is produced regularly in San Diego, Orange, Los Angeles, Ventura and Santa Barbara Counties. This outstanding dessert fruit described by Mark Twain as "deliciousness itself" reaches excellent quality when grown at a moderate elevation and in an area where the climate is mild. Several very excellent varieties have been developed by natural selection among seedlings in California. The Bays and Chaffey varieties appear well adapted to most areas where they have been tried. These invariably set good crops in nearly all areas, even without hand pollination, although this practice is advisable where commercial production is sought. The Whaley and Carter in the San Diego area continue to produce fruits of good quality. Several new and promising seedlings have been discovered during the past few years. These are under observation by the committee and a few may be registered in the near future.

The white sapote variety May appears to thrive well in several areas where it has been tried. While time has not permitted extensive observation of this variety, it looks rather promising as a producer of good fruit. Several other white sapote seedlings are under observation by the committee and a few are pending registration at this time.

An important function of the committee is to observe and register new and promising seedlings of the subtropical fruits other than citrus and avocados. The committee urges that outstanding seedling trees or named varieties of cherimoyas, white sapote, macadamia, guavas, mango, feijoa and other subtropical fruits now growing in California be called to their attention for study and registration. Anyone who desires to

register a subtropical fruit under his or any other name can contact a member of the committee or the secretary of the Society. Such a registration will record the seedling or variety in the Yearbook and will provide a permanent record of the fruit for the use of growers and other interested persons. Such registrations can be of considerable value for persons who wish to select the finest variety of a fruit for a dooryard orchard tree or for the grower who possibly may wish to set out a commercial orchard of fruits now of minor importance.

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