

## REPORT OF THE VARIETY COMMITTEE

About 100 varieties and selections from both foreign and domestic sources are being appraised in orchards in various locations in Southern California. Unless and until one or more of these proves to be superior to those that presently are being grown commercially, previous recommendations for planting remain in effect. These are: tetraphylla type, Elimbah; integrifolia type, Keauhou hybrid type, Beaumont. The integrifolia varieties Jordan and Keaau are still being evaluated. Although Keaau has small nuts, it has evoked some interest because the crop matures and drops over a very short period in December in Rancho Santa Fe. Furthermore, it shows promise of being a good producer in California.

A. Clark Warren and Joseph A. Vicari, owners of Rancho Macadamia with about 500 trees, have settled on a selection known as Cate 2 (Fig. 1) for reworking trees of unsatisfactory varieties. They gave the basis for their decision in an article entitled "The Cate Macadamia" in the 1971 Yearbook. Briefly the reasons given were: precocity; prolific; no evidence of alternate bearing; acceptable crackout percentage; uniformity in size of kernel; no sticktight kernels; no kernel shrinkage in early drops; most nuts fall free from the husks; comparatively short dropping season, mostly in late October; good wind resistant tree; easy to manage, attractive tree. Nut analyses by a number of persons are given in Table 1.

The Cate 2 tree grows on the property of W. R. Cate, 6038 South Ramirez Canyon Road, Malibu. Nuts were collected for analysis by N. E. Westree in 1957 and trees were propagated by him in 1958. Six trees were planted at Rancho Macadamia in 1963. Development of this variety on a commercial scale will be watched with interest.

The Committee reiterates that any tetraphylla nut meat containing 67.5% or more of oil when dried to 3% moisture may be considered to be a grade 1 meat. The standards, 72.5% or more constitute grade 1, and 67.5% to 72.4% constitute grade 2, were established for *M. integrifolia* and do not properly apply to *M. tetraphylla*. Integrifolia nuts characteristically are higher in oil and lower in sugar than tetraphylla nuts. These differences are reflected in processing procedures and in flavor. Both species are entities, each with its own standards, and should be judged accordingly.

Due to unforeseen circumstances, it was not possible to make final judgement on the Wells W. Miller - W. B. Storey introductions of 40-odd selections from Australia in 1960 or to begin evaluation of N. E. Westree's introductions of 23 selections he made in Hawaii in 1962. It should be possible to do this work in the 1972-1973 crop season.

W. B. Storey, Chairman  
C. G. Tanner (deceased)  
E. E. Trask  
N. E. Westree

Table 1. Analysis of Cate 2 Macadamia nut.

Analyzed by	W. C. Kemper	P. H. Thomson	W. B. Storey	L. A. Newell	W. B. Storey
Year	1957	1967-69	1970	1970	1972
Source	Parent tree	Rancho Macadamia	Rancho Macadamia	Rancho Macadamia	Parent tree
No. nuts/lb.	71	62			68
Size	large	large	large		large
Shape	Slightly ellipsoidal	Round	Slightly ellipsoidal		Slightly ellipsoidal
Shell	thin	thin	thin		thin
Avg. kernel wt., gm.	1.7	2.7	3.0	2.5	3.6
Crackout %	39.0	40.6	40.0	48.7	42.8
Oil, over 72.5%	20	35	50		25
Oil, 67.5 - 72.4%	80	55	50		70
Oil, less than 67.5%	0	10	0		5
Color	cream	cream	cream		cream
Flavor	good	good	good		good
Texture	good	good	good		good

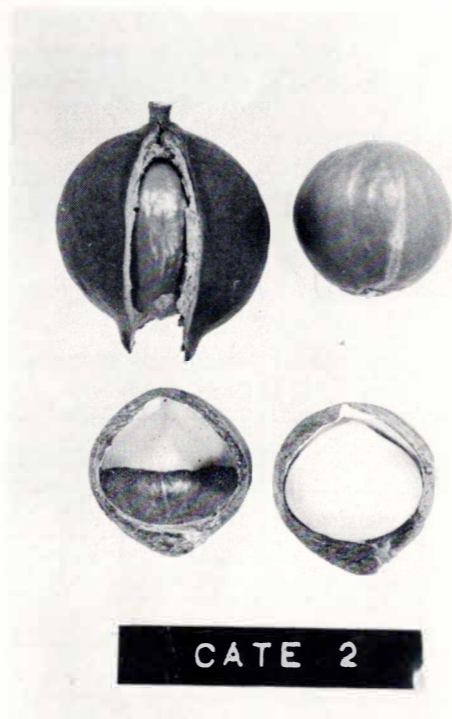


Figure 1. Cate 2 nuts from Rancho Macadamia.

## REPORT OF THE RESEARCH COMMITTEE

The committee reports research activity in the following areas.

### *The Selection of Varieties for Specific Locations*

The Research Committee and the Variety Committee will work together to develop a plan to:

1. evaluate existing varieties with respect to their growth and production in different climatic areas.
2. establish guidelines in the selection of trees for specific areas.

Growers, scientists, and representatives of the marketing association will pool their knowledge and ideas. It is expected that this will be an ongoing activity. The first meeting is planned early in 1973.

### *Mycorrhiza in Macadamias*

Mycorrhiza is the association of a fungus with the roots of a seed plant. The existence of mycorrhiza in macadamia trees has been established. Deanna Ufkes, student of Dr. W. B. Storey, is now attempting to determine the effect of the mycorrhiza on the growth of the tree. She also is studying the means of transmission of the fungus.

### *Scion Rooting in Grafted Trees*

Dennis Fulbright, student of Dr. Lois E. James, is attempting to produce grafted trees with root systems of both stock and scion. Recommended varieties have been selected. Side grafts low on the stock are made and the young grafted trees will be transplanted so that the lower part of the scion is below the surface of the soil. A narrow girdle will be made in the part of the scion that will be in the soil in order to bring about root formation. Possible values of the procedure are:

1. A grafted tree will have a root system of known quality once sufficient data is obtained.
2. The nature of the root system of the stock takes on much less importance. This could be important in mineral absorption and in the situation when a tree is killed by frost because the stock is less resistant than the scion. Here the stock is protected by being buried.
3. The additional root system should provide better support which could be of great value during heavy rains or high winds.
4. Trees grown in nursery pots frequently are root-bound. Causing adventitious roots to form in the scion should result in the resumption of growth of the tree sooner.

### *Phenological Studies*

Phenological studies in various parts of the world where macadamias are grown have been made and more are in progress. The reader is referred to the article in this yearbook by P. Allan entitled "USE OF CLIMATIC DATA IN PREDICTING MACADAMIA AREAS." We need precise data on known varieties so that variants can be recognized. These studies are of inestimable value in predicting the success of varieties for specific locations.

### *Macadamia Oil*

Dr. Saleeb at the University of California at Riverside continues his work on the oil content and composition of macadamia nuts. A report of his results is expected in the near future.