

TWO NEW MACADAMIA NUT VARIETIES

and an Appraisal of the H.A.E.S. Named Varieties

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Circular 36

UNIVERSITY OF HAWAII AGRICULTURAL EXPERIMENT STATION

MAY 1952

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In 1948, five of the more promising clonally propagated macadamia selections made by the Horticulture Department of the University of Hawaii were described and given varietal names.¹ These varieties were Keauhou, Kakea, Kohala, Nuuanu, and Pahau. The variety trial plantings on the four main islands containing the named varieties and a dozen or more promising unnamed clonal varieties were continued, and detailed observations and performance notes were made each year. As a result, two varieties which have been under observation since 1936 are sufficiently outstanding and have shown enough all-around merit to make it advisable to assign them names. The variety previously known as H.A.E.S. 475 and also as No. 44 is named Wailua after the Wailua section of Kauai, which is near the macadamia orchard of Dr. J. M. Kuhns, one of the most successful trial orchards planted in cooperation with the University of Hawaii. H.A.E.S. 333 is given the name Ikaiki, the Hawaiian word expressing strength, vigor, and hardiness, all outstanding characteristics of this variety.

In selecting and naming varieties Wailua and Ikaiki, desirable shell and kernel qualities as well as tree form and fruiting capacity were considered, with emphasis on performance on sites inclined to have shallower soils and less wind protection than are ideal for macadamia growing. With present processing methods, both Wailua and Ikaiki have shown desirable qualities for cracking and processing operations. The naming of these two varieties is in line with the general policy and principles of the macadamia variety selection program initiated in 1936 under the leadership of Dr. J. H. Beaumont. The main purpose of this program was that of making the best obtainable clonal varieties available for commercial planting in Hawaii at the earliest possible date. This was done as soon as the relative performance of varieties could be adequately studied and evaluated in the several variety trial orchards established on Oahu, Kauai, Maui, and Hawaii. The variety testing program is continuing and it is expected that other outstanding selections will be given names when adequately tested.

DESCRIPTION OF VARIETY WAILUA, FORMERLY KNOWN AS 36-475, 475, AND NO. 44

Tree: Vigorous; head medium open; branches ascending and spreading; branches strong with medium wide crotch angles.

¹W. B. STOREY, 1948. VARIETIES OF THE MACADAMIA NUT FOR PLANTING IN HAWAII. Hawaii Agr. Expt. Sta. Progress Notes 51.

Nuts: Medium in size, averaging about 60-68 to the pound; average diameter about 0.9 inch; 37-42 percent kernel; shell smooth; medium brown with scattered fairly conspicuous lighter speckles. (Fig. 1, right.)

Bearing potentialities: Bearing potentialities are good, perhaps the best of any of the named varieties; comes into bearing earlier than any of the other named varieties, which suggests its use as a "filler" variety.

DESCRIPTION OF VARIETY IKAIKI, FORMERLY KNOWN AS 36-333 AND 333

Tree: Vigorous and hardy; head open; branches strong and spreading with fairly wide crotch angles.

Nuts: Medium in size; average diameter 0.9 inch; 31-35 percent kernel; shell medium brown with slightly pebbled surface. (Fig. 1, left.)

Bearing potentialities: This variety has good bearing potentialities and the most vigorous and hardy growth characteristics of any of the named Hawaii Agricultural Experiment Station varieties.

APPRAISAL OF NAMED H.A.E.S. VARIETIES

No rating or appraisal of the relative merits of the five varieties named in 1948 was proposed in Progress Notes 51. However, continued observations on the comparative merits of clonal varieties in trial orchards make possible a rating on the basis of general adaptability and relative usefulness expected on the types of soil and locations available for planting macadamia orchards in Hawaii. These four varieties, Keauhou, Kakea, Wailua, and Ikaiki, are considered desirable commercial varieties for orchard planting in Hawaii and, in the light of present information on growth, yielding capacity, and processing considerations, are the best in clonal varieties available to the public at present. Varieties Nuuanu, Pahau, and Kohala, on the other hand, have certain limiting qualities and probably should be planted only in areas where they have been found to perform especially well. Both Nuuanu and Pahau have been found somewhat susceptible to anthracnose, and the nuts are inclined to crack when husked with ordinary mechanical husking machinery. However, Nuuanu is a very good variety for landscaping purposes and dooryard planting because of its desirable tree form and relatively thin-shelled nut. Variety Kohala usually requires heavy fertilization and often produces smaller nuts than are preferred for processing.

Further observations on comparative merits, uses, and special qualities of the more promising commercial varieties:

1. *Variety Keauhou* (fig. 2, right): This variety is outstanding in nut and kernel characteristics, and, when grown under favorable conditions, yields well, bearing large heavy clusters of nuts that average somewhat larger than nuts produced by the other named varieties. This variety has a comparatively short harvest season, the bulk of the crop maturing within about 3 months. Keauhou is extremely resistant to anthracnose, in fact,

so much so that it may be considered virtually immune to this disease. It is considered to be a superior variety for locations that are ideal or at least very favorable for macadamia growing. This definitely includes deep, well-drained soil and adequate wind protection.

2. *Variety Kakea* (fig. 2, left): This variety approaches Keauhou in general desirability as a commercial variety and may be expected to give similar performance on areas with adequate wind protection. On some locations, especially if shallow soils or drouths sometimes limit tree growth, it has given better performance than Keauhou. It shows good anthracnose resistance and produces heavy crops of nuts of desirable size and shape. Kakea is a hardy, productive, vigorous variety that has performed well at several locations during the past 15 years.

3. *Variety Wailua*: This variety comes into bearing earlier than the other named varieties, which suggests its use where filler trees are desired to increase the bearing capacity of young orchards. It is a vigorous and productive variety with desirable nut characteristics and compares favorably with Kakea in these respects. It is a good variety for permanent plantings as well as for temporary filler tree plantings.

4. *Variety Ikaiki*: This is the hardest, most wind-resistant variety available at present. Nut characteristics are fairly good although the kernel percentage averages about 5 percent less than the other named varieties. Since most land being considered for new macadamia orchards is not ideal for growing macadamia trees, this relatively hardy, productive, vigorous variety should be seriously considered as the most logical variety available for planting in areas where the soil is relatively shallow and wind protection limited. Because the tree is vigorous and hardy enough to produce commercial crops on locations where other varieties would probably be unprofitable, Ikaiki is recommended for difficult areas in orchards, such as ridges where winds as well as soil conditions may become limiting factors.

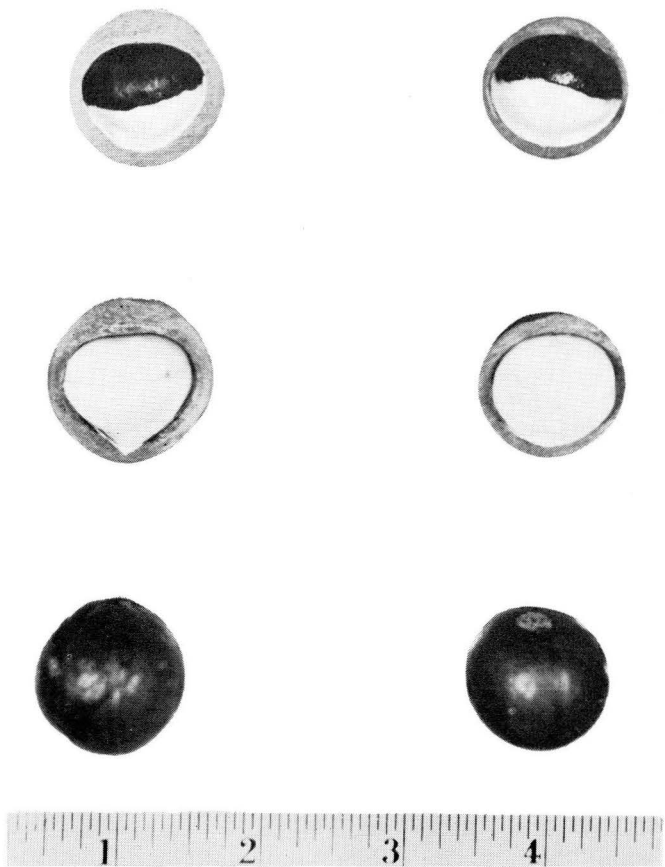


Figure 1. Left—Ikaiki; right—Wailua.

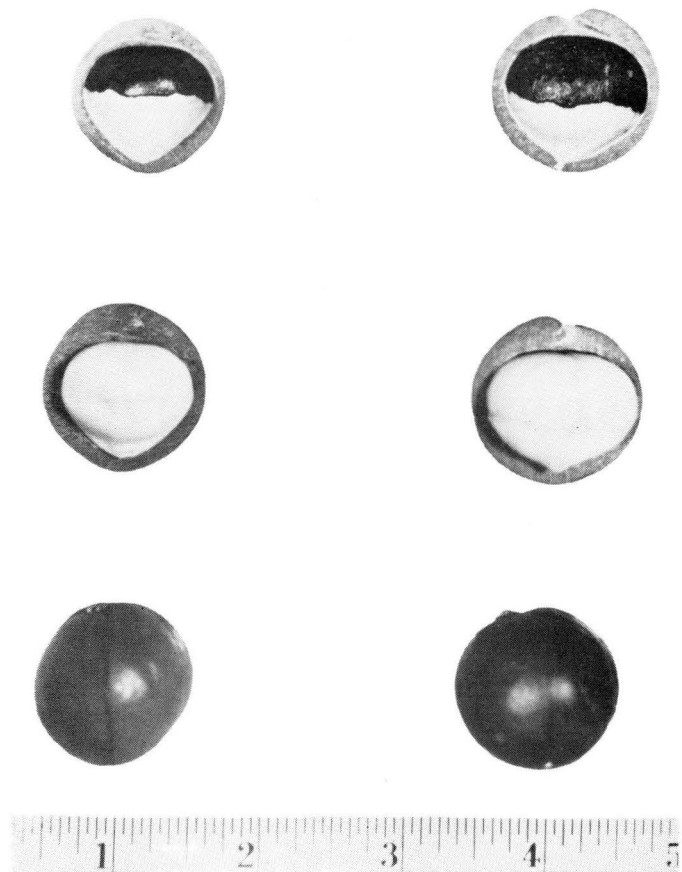


Figure 2. Left—Kakea; right—Keauhou.



Figure 3. Left pair of leaves—Ikaiki;
right pair of leaves—Wailua.

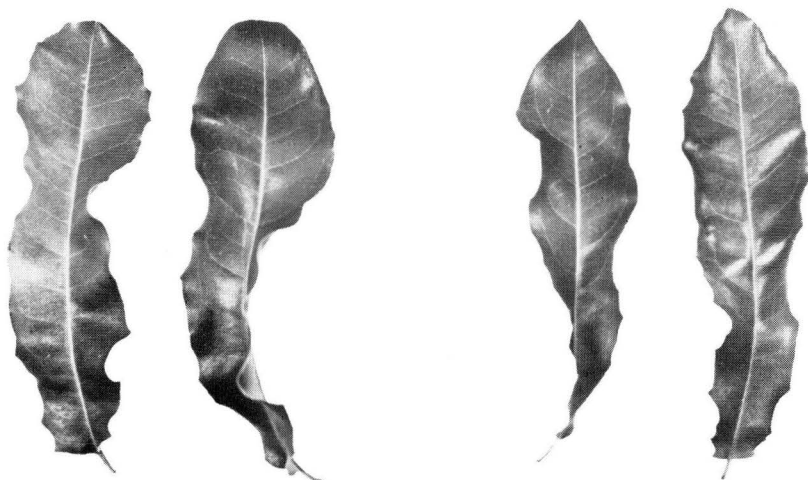
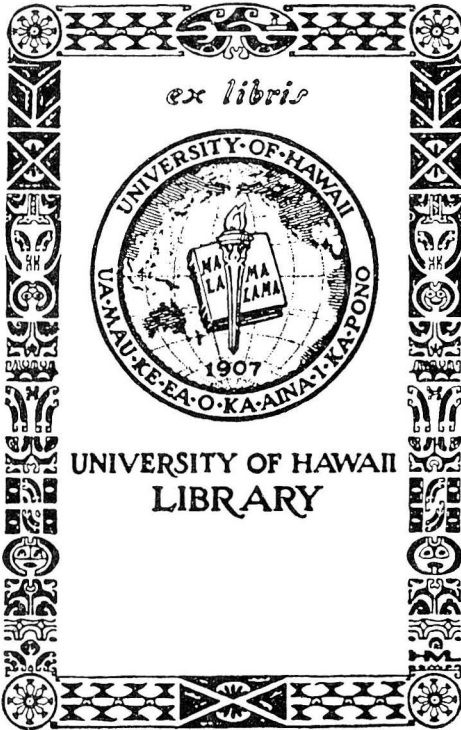


Figure 4. Left pair of leaves—Keauhou;
right pair of leaves—Kakea.



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