

Table 3. The Chi Square Test of Independence 2×2 contingency table for *P. roebelenii* O'Brian palm seed germination, scarified vs. 24-hour water soak seed treatment after 72 days.

Treatments	Germination	%	Non-Germination	%	Total
Scarified	65	53.7	56	46.3	121
24-hour soak	20	16.5	101	83.5	121
Total	85	35.1	157	64.9	242

$\chi^2 = 36.71^{**}$; $\chi^2 .05, 1 \text{ df} = 3.84$; $\chi^2 .01, 1 \text{ df} = 6.63$

Of the 121 seeds presoaked, 99 sank and 22 floated. Of the 99 seeds that sank, 19 germinated. Likewise, of the 22 seeds that floated, 1 germinated. The Fisher Exact Test was used rather than the Chi Square Test because the number of floating seeds expected to germinate was less than the number required for the Chi Square Test. Under the Null Hypothesis, of no relationship of germination to sinking or floating, the probability of obtaining germination of either 0 or 1 of the seeds that floated was at the .079 level. These data suggest that 92.1 percent of the time floating seed will not germinate. However, it is not statistically significant at the 95 or 99 percent level.

This study indicated that seed scarification did enhance germination but 24-hour presoak treatments did not. Although not statistically significant at the 0.05

probability level, floating seeds did not germinate as well as seeds that sank.

LITERATURE CITED

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PALM BRIEF

The Hawaii Tropical Botanical Garden has opened to the public in the lush setting of Onomea Bay on the Island of Hawaii. This 17 acre Nature Preserve is the newest Botanical Garden in the Hawaiian Islands and shows promise of being an outstanding example of tropical horticulture.

Among the collections presently on inventory at the Garden is a surprisingly diverse collection of palms. With the help of many friends and supporters the collection includes *Areca triandra*, *Elaeis guineensis*, *Hyophorbe lagenicaulis*, *Reinhardtia gracilis*, and *Veitchia winin*. At press the inventory showed 44 genera represented by 74 species. A further inventory of currently unidentified species

will increase the listing as well as the steady acquisition of other species adaptable to the cultural conditions of this tropical valley.

The Hawaii Tropical Botanical Garden began in 1978 as the dream of Dan and Pauline Lutkenhouse. Retiring to Hawaii from San Francisco they fell in love with the unspoiled charms of the 'Big Island' (Hawaii) and made plans to preserve at least a small part of it for future generations. Establishing the Nature Preserve and Botanical Garden required hundreds of hours of dedicated labor and a considerable amount of money (nearly a million dollars). As the years went by the garden began to emerge from an untamed jungle into a series of micro-climates enhanced by the ever-growing collections of tropical and exotic species. Graceful palms created overstories for other genera and highlighted the paths and ponds in the Garden. Literally hundreds of plants were collected from the gardens of Asia, donated by residents of Hawaii, and acquired from institutions across the United States. Finally, in 1984 the Garden had reached the state where it could be opened to the visiting public. In the few months it has been open, the Garden has been enjoyed by several

hundred visitors from the United States and nearly every other country in the world.

The Garden is a federally approved Non-Profit Organization funded entirely by donations and admission donations. A restriction on the number of visitors that are allowed in the Garden each day helps to preserve the peaceful environment of the Garden while still providing the finance needed for basic operations. All expansion projects and special programs are based on other donations.

A permanent staff of four oversees the Garden operations. Gary A. Powell, formerly of the Waimea Falls Park on O'ahu, has accepted the position of Curator for the new Garden and Terence Takiue, who has overseen the physical development from its inception, is the operations manager.

Dan and Pauline Lutkenhouse remain as the Directors and are very active in the day-to-day affairs of the Garden. Their foresight and dedication will enable future generations to enjoy and perpetuate the beauty of Onomea Bay and the Hawaii Tropical Botanical Garden.

LOIS ROSSTEN

The 1986 Biennial Meeting

- 1) The agenda for the 1986 Biennial was enclosed with your January issue of *Principes*. Please emend the schedule to include a tour of the Dr. Mardi Darian Botanical Garden, one of the best in the U.S., Saturday, June 28, 12-4 pm.
- 2) For the Biennial tours we need to know: will you need transportation or will you have room for extra persons and if so how many? Please respond on the registration form or phone: Jim Wright, (619) 276-5295.
- 3) Please submit your registration form promptly.