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In Vitro Germination of Chamaedorea seifrizii

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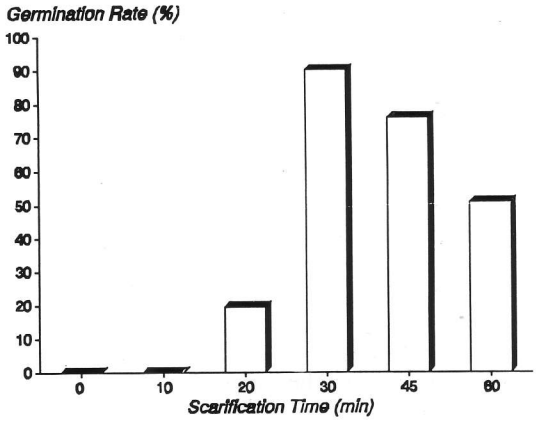
Chamaedorea seifrizii Burret is an elegant Mexican palm, which has been something of a collector's item but in recent years has become more common. It is indeed an attractive palm and one well worth growing in the garden or as an indoor plant (Jones 1984).

Ornamental palms are slow-growing plants and consequently, require more time and effort in their production than other plants. Difficulty and poor germinating rate in many species of ornamental palm seeds can delay this production. Germination of palm seed is a gradual process, occurring over a period of weeks or even months. In *Chamaedorea* the time for germination varies from 1 mo to more than 6 mo, depending on species and freshness of the seed. For *Chamaedorea pinnatifrons* it fluctuates between 115 and 125 d (Braun 1968). *Chamaedorea seifrizii* according to our experience in Cuba is similar. On the other hand, *Chamaedorea* palms bear seeds that remain viable for ≈4–6 wk (De Leon 1958). Several methods have been employed to increase the percentage of germination; bottom heat, scarification, and pretreatment with growth regulators are some (Nagao et al. 1980). This work points out the value of scarification of *C. seifrizii* seeds in reducing the germination time.

Mature fruits were collected during September and October, in the Moron Tree Nursery (Ciego de Avila, Cuba). The fleshy outer coats of the fruits (epicarp and mesocarp) were removed by hand friction under flowing water. These coats are an irritant to skin, so the use of gloves is recommended. Fresh seeds were treated with sulphuric acid (96%) for 3, 5, and 10 min. A control was established. Another group of seeds were allowed to dry at laboratory temperature for 7–10 d. Later they were treated with the same procedure but for different times (control, 10, 20, 30, 45, and 60 min). In both cases, after acid treatment, the seeds were washed with sterile water several times. The control seeds were disinfected with $HgCl_2$ (0.1%) for 3 min and washed with sterile water. All seeds were put under sterile conditions into glass flasks with MS (Murashige and Skoog 1962) solid medium. No growth regulators were used. The pH of the medium was adjusted at 5.6–5.7 before adding agar (0.8%) and then sterilized in an autoclave at 121°C for 15 min. Cultures were incubated in the light at 27°–28°C in the chamber. The percentage of germination was evaluated after 30 d. Fresh seeds did not germinate independently of treatment with sulphuric acid. The germination of *Chamaedorea seifrizii*, as in other palms, is delayed by moisture in fresh seeds. Rabechault et al. (1969) showed the embryo germination was found to be greatly influenced by seed-moisture content, previous duration of seed storage, and relationship between seed dormancy and water content. Figure 1 shows the germination percentages of treated seeds with sulphuric acid during several periods. Dry seeds in the 10-min treatment and the control seeds did



1. Percentage of germination of dry seeds, scarified at different periods with sulphuric acid (96%) at 30 d of cultures.

2. *Chamaedorea seifrizii* Burret plantlets under sterile conditions, at ≈60 d of culture.

not germinate. The best results were obtained when dry seeds were scarified with sulphuric acid for 30 min, washed several times with sterile water, and then put in the culture medium (Fig. 1).

Merlo et al. (1993) obtained 90% germination in *Chamaerops humilis* L. when manually scarified seeds were treated with concentrated sulphuric acid for 4.5 h and then put in a germination chamber. Germination percentages were lower when the time in acid was increased to 60 min, which could be explained because scarification leaves the embryo exposed to damage by strong acid. A longer exposure to acid could probably also destroy the embryo. The coats (mesocarp) of many species of palms contain substances that inhibit germination. *Chamaedorea seifrizii* is one of them. The scarification of the outer coat of the seeds with acid eliminates substances that delay the germination, gaseous exchange, and water imbibition. Plantlets were cultured in vitro (Fig. 2) for 60 d after seed scarification, until they reached ≈8–10 cm long, at first leaf stage.

From this study we can conclude that it is possible to shorten the germination time of *Chamaedorea seifrizii* seeds by a drying period followed by scarification with concentrated sulphuric acid.

Acknowledgments

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CHAPTER NEWS AND EVENTS (*Continued from p. 111*)

borine in southern Queensland. A brief business meeting was held. The group also enjoyed a year end break-up party. The weather was perfect and members were able to view the grounds and many interesting plants featured in Bill's garden.

News from the Sydney Branch, PACSOA, Chapter

The Sydney Branch of PACSOA and Chapter of the IPS met on January 16 at the Maiden