Sabal mexicana, Sabal minor, Sabal Palmetto, Sabal texana, Sabal umbraculifera, Sabal viatoris, Sabal Yapa, Trachycarpus Fortunei, Trachycarpus Martianus, Trachycarpus, Takil, Trachycarpus Wagnerianus, Trithrinax acanthocoma, Trithrinax campestris, Washingtonia filifera, Washingtonia robusta.

A Method for Germinating Palm Seeds

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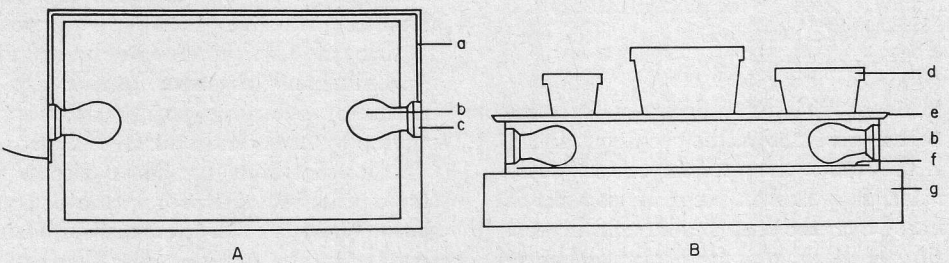
After ten years of importing palm seeds and trying various methods to germinate them, the author wishes to report a method for germinating palm seeds that should be useful and successful for the amateur. It is well adapted for small scale germination when a few seeds are received periodically as the fruits become available.

Previous seed treatments that gave negligible results or even total failure were: (1) Planting the seeds as received with no removal of the outer shell or pericarp when such was present; (2) No artificial heat provided; (3) Planting the seeds too shallow—one-half of the seed exposed above the surface of the sand; (4) Unfamiliarity with location of the micropyle with the seed in question. Many species have the micropyle, through which germination occurs, variously situated.

It is concluded from numerous trials that the most important factor for success in palm seed germination is the provision of artificial heat where the environment is cooler than 80°F. The removal of the pericarp is probably next in importance.

In order to develop a germinator in which bottom heat could be provided simply, a method was improvised to supply artificial heat with incandescent light bulbs. A rectangle box 19″ × 12″ × 3½″ was used as shown in Fig. 19. The size of the box may vary with one's individual needs. A light bulb socket is fastened to one end of the box or, if desired, one may be placed at each end to supply more uniform heat in larger boxes. With the box above, one 75-watt lamp provides sufficient heat. Two bulbs of lower wattage may be used in a larger box, such as a 40-watt lamp for each socket. The important thing is that the lamps provide continuous heat of about 80°F. near the seeds.

The larger the size of the germinator,



19. Layout for a source of bottom heat. Left, box with lamps for heat in top view; right, lateral view of the same on inverted flat with pots on aluminum sheet. a, light cord; b, light bulb; c, socket; d, pot of vermiculite with seeds; e, aluminum sheet; f, thin aluminum strip; g, inverted wire mesh flat.

the higher should be the wattage of the bulb so that enough heat will be distributed over the top. The wire cord is fastened along the side of the germinator and emerges from a hole at one end to be plugged in an outlet. A thin strip of aluminum may be placed in the bottom of the germinator; this is desirable to reflect the heat upwards.

A sheet of metal aluminum is then placed over the box. It is well to set the germinator on a slightly larger box, preferably an inverted wire-bottom flat, so that heat will not injure the surface on which it rests. The pots or other containers with the planted seeds are then laid directly on the aluminum metal sheet as shown in Fig. 19.

The 75-watt incandescent bulb supplies a steady bottom heat through conduction of heat on the metal aluminum sheet. The heat will necessitate frequent waterings of the pots.

Vermiculite has been used as a germinating medium in recent years because of the consistently good results obtained. It is excellent because of its relative freedom from pests and diseases, good drainage, porosity and at the same time high water-holding capacity. Also germinating seeds have been noted to develop well branched root systems in the vermiculite. Its use alleviates the danger of the development of anaerobic conditions. Because of the above factors the coarse grade of vermiculite is preferred to the finer grade.

The provision for drainage is of utmost importance in the seed containers, be they pots, tins, plastic or any other material. A broken piece of clay pot is placed over the drainage hole of the pots with the convex surface upward before putting in the vermiculite. If tins are used, drainage is easily provided by punched holes around the bottom edge. If the holes are about the diameter of an ice pick, no clay pot pieces are needed at the bottom as the vermiculite will not be lost readily.

The container is filled with vermiculite to about one inch from the rim; then the seeds, preferably with the pericarps removed, are placed on the surface. They are then covered with vermiculite till the seeds are buried to a depth of their own diameter. With larger seeds the container may be half-filled with vermiculite and the seeds then placed on the surface to be covered almost to the rim with vermiculite. As a result the top of the seeds will be covered with about one inch of the medium. The vermiculite should not be compacted by pressing down during the filling of containers since watering will result in additional settling.

The mode of insertion of the seeds in the vermiculite is worthy of mention. One may think when planting that it makes no difference how the seeds are placed. From observation it has been found that round seeds may be planted with less care than ellipsoid or ovoid seeds which respond best when the long axis is placed horizontally.

When the seeds are sown in porous clay pots, they may be watered from below, setting the pot in a receptacle of water and removing it when the top becomes saturated. This will prevent settling of the vermiculite and help maintain better aeration. Seeds planted in tins or other non-porous containers may be watered on the surface if care is taken to distribute the water evenly. A slow sprinkling will prevent the danger of dislodging the planted seeds. With surface irrigation, enough water should be applied to saturate the entire contents of the receptacle; this is apparent when the excess escapes as drainage water.