

GERMINATION METHODS FOR BIRD-OF-PARADISE SEED

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Strelitzia reginae, commonly known as bird of paradise, has black spherical seeds with orange tufts. There are few authoritative publications on culture and seed germination of this species. References by growers state that seeds take about 2½ months to germinate. Unpublished results of a trial at the University of California at Los Angeles indicate that fresh-harvested seed will germinate in vermiculite at 75°F. In Leaflet 91, *Bird of Paradise* (Cooperative Extension Service, University of Hawaii), Donald P. Watson states, "If seeds are stored and reach the dry hard stage, soak them for five minutes in sulphuric acid, wash them carefully, and plant in shredded tree fern or a mixture of loam, manure, and black sand in a shaded place. Seeds that are kept moist after planting will germinate within a month."

The expected percentage of seed germination is not mentioned in available references. A local San Diego County grower says that 70 percent germination is good. Longtime bird-of-paradise growers have mentioned various methods of treating seed for improved germination including acid soaks, hot water soaks, and abrasion of the seed coat by rotating seed with sharp sand in a mixer.

An experiment was conducted in the fall of 1975 to gain more insight into the problems of bird-of-paradise seed germination. Fresh seed was harvested from an open field on October 1. Six lots of uniformly large seeds, 100 seeds per lot, were selected. Three lots were soaked in concentrated sulphuric acid for 5, 10, or 15 minutes. The seeds were immediately rinsed in cold water after the acid soaks. A fourth lot of seed was placed in hot water (142°F) for 30 minutes. Each seed in the fifth lot was abraded on one side with emery cloth to make an opening through the seed coat of about 2 mm diameter. The sixth lot of seed was an untreated control.

Immediately after treatment on October 24, the six lots of seed were sowed about 12 mm deep in flats of vermiculite and placed in a room of constant 75°F temperature with fluorescent lights. Emergence of the seed lots was recorded until the maximum germination was apparent.

RESULTS AND DISCUSSION

The table shows the emergence of seed. The first germination was on November 14 in the acid treatments with maximum germination on about December 15. The 5-minute acid soak resulted in 46 percent germination, the 10-minute soak 32 percent, and the 15-minute soak 20 percent. Apparently seed is injured by acid soaks in excess of 5 minutes. Seeds from the hot water soak germinated slightly later than those from the acid soaks, but germination was 59 percent. No seeds germinated in the treatment where seed coats were abraded on one side. Only one seed, out of 100, germinated in the untreated control lot.

An interesting, but unexplainable, phenomenon developed in the experiment. A bluish gray mold developed on the surface of the vermiculite in the three acid soak treatments. This mold caused some seedlings to die. A pure white mold developed on the

vermiculite surface in the abrasion and the untreated control treatments. Its effect on seedlings is unknown since only one seed germinated in these two treatments. No organism developed on the vermiculite surface in the hot water treatment. Hot water at 142°F is known to kill most disease organisms. This may be an additional benefit of treating bird-of-paradise seed with hot water.

CONCLUSIONS

Based on the results of this experiment, hot water at about 142°F appears to be the best method for improving the germination of bird-of-paradise seed. Hot water may also provide some sanitation and quite possibly may be less expensive than the use of acid.

The next best treatment was a 5-minute acid soak. Still unanswered are questions about the best media to use for germination, although vermiculite seemed suitable. The media temperature of 75°F is probably suitable. The importance of light is unknown. The fluorescent light in the germination room for this experiment has an intensity of only 100 foot-candles. However, new leaves from germinating seeds reached a height of about 4 inches and were bright green even at this low light intensity.

PERCENT BIRD-OF-PARADISE SEED GERMINATION AFTER SOWING ON OCTOBER 24

Treatment	Days after sowing						
	21	26	31	36	41	49	64
Acid soak, 5 min.	1	7	17	22	37	43	46
Acid soak, 10 min.	4	8	10	22	30	32	32
Acid soak, 15 min.	5	10	13	15	18	19	20
Hot water, 30 min.	0	1	5	21	40	55	59
Abrasion of seed coat	0	0	0	0	0	0	0
Untreated	0	0	0	0	1	1	1