Germination of Palm Seed

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One question often asked of me is: "How long does it take a palm seed to germinate?" This is one question I do not know how to answer. Is there an answer? Can you answer it?

For several years I have kept careful germination records. I now submit them to The Palm Society in hopes that they may help someone, someday, to find the answer. Here are my data:

Name of palm*	No. of days
Acrocomia mexicana (2)	440
A. sclerocarpa (3)	878
Actinorhytis Calapparia	71
Aiphanes acanthophylla (1)	91, 43 & 95
A. caryotaefolia (1)	71, 60 & 61
A. erosa (1)	58 & 110
Allagoptera campestre (1)	62 & 62
Archontophoenix Cunninghamiana	90
A. sp.	53
Areca Aliciae	41
A. Catechu (1)	55, 25 & 30
A. concinna (1)	42 & 61
A. Langloisiana	114
A. sp.	31
A. triandra (1)	33 & 41
Arenga Engleri (1, 4)	111, 506, 626, 283 & 83
A. microcarpa	261
A. obtusifolia (1)	374, 232 & 238
A. pinnata	189
A. sp.	181
A. tremula	103
A. undulatifolia	268
A. Wightii	298
Arikuryroba schizophylla (1)	51 & 107
Astrocaryum aculeatum	1044
A. sp.	65
A. Standleyanum (1)	68, 47 & 96
A. vulgare (1)	413 & 334
Bactris Gasipaes	69
B. major	188
B. rhaphidacantha	197
B. sp. (Moore # 9529)	150
Bentinckia nicobarica (1)	85, 82 & 74
Borassus sp. (1)	283, 265 & 273
Brassiophoenix drymophloeoides	245
Butia capitata	149
B. capitata var. *capitata*	161
B. eriospatha (1)	673 & 230
Calamus sp. (1)	107 & 408
Calyptrocalyx spicatus	19
Carpentaria acuminata	78
Caryota Cumingii (1)	142 & 114
C. mitis	149
C. urens	198
Chamaedorea cataractarum	82
C. costaricana	41
C. elatior	118
C. erumpens (1)	235 & 194
C. glaucifolia	244
C. metallica	197
C. microspadix (1)	105, 98 & 65
C. monostachys	148
C. oblongata (1)	40 & 117
C. oreophila	214
C. Seifrizii (1, 5)	138, 203, 220 & 69
C. Tepejilote	41
Chamaerops humilis var. *arborescens*	67
C. humilis var. *humilis*	124
Chelyocarpus sp. (Moore # 9548)	179
Chrysalidocarpus Cabadae (1)	127 & 78
Clinostigma Gronophyllum (1)	113 & 127
Coccothrinax acuminata	49
C. alta	63
C. argentata	76

* Numbers in parens following name refer to key at end of list.

Note: Some time ago a fellow came into the nursery and handed me a bag of palm seed and told me he had just come from the Amazon the day before. The seeds were all mixed up and I could see 11 different species. He didn't know anything about palms.

KEY

(1) more than one planting.
(2) *Acrocomia mexicana* 440 days total; after removing from the hard shell, 138 days.
(3) *Acrocomia sclerocarpa* 878 days; after removing from the hard shell, 373 days.
(4) *Arenga Engleri* (111, 506, 626) all from the same planting and the same inflorescence.
(5) *Chamaedorea Seifrizii* (203, 220) divided seed in half, planted ½ in muck and ½ in Perlite.* 203 in muck and 220 days in Perlite.
(6) *Geonoma membranacea* 48 days fresh seed, 141 dried seed.
(7) *Hyphaene* sp. (290, 96) both plantings were fresh seed from the same tree.
(8) *Raphia* sp. old seed, all planted together at the same time.
(9) *Scheelea Preussii* (86, 304) all from the same planting; 2 seeds germinated at 86 days, no more until 304 days.

One must recognize that there are many variables which can affect germination: temperature, type of planting medium, humidity, and probably most of all, freshness of the seed. We know that palm seed should be planted as soon as possible after maturity.

In southern Florida we have found that seed appears to germinate more rapidly and in greater numbers if planted in Perlite. Some of the tougher seed such as *Borassus*, *Cocos nucifera*, *Hyphaene*, and *Veitchia* will germinate in soil without much difficulty.

There is much variability in palm seed from the same inflorescence, as noted in *Arenga Engleri*. Is there any reason why there should be a difference of 515 days in the germination of seed from the same inflorescence?** These seeds were fully mature and all planted together at the same time.

A group of *Copernicia macroglossa* seed with pericarp removed germinated and the leaves were in long curls. Seed of the same species without the thin paper shell on them had straight leaves as in *Sabal*. Why would the thin shell make a difference such as this?

Scheelea Leandroana germinated with much confusion. Of the 157 seeds planted 22 seeds germinated double, 8 germinated triple, and 1 quadruple. Multiple germination has been noted here, but nothing compared to this.

It is my hope that some of the many so far unanswered questions may be resolved by members of The Palm Society pooling their information on germination.

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* Perlite is a trade name for a volcanic rock expanded by heating, then ground into tiny white "pearls." Very light and porous, it aids in aeration while retaining some moisture. It may be used alone, mixed with peat moss or soil. Since it contains no nutrients, plantlets should be placed in good soil at an early stage of growth.

** August Braun suggests a reason in *Principes* 12: 54, 1968: "A most peculiar phenomenon and one typical for the palm family is the delayed germination of the seed at certain intervals. Early-germinating seeds, usually few in numbers, are followed at intervals by more groups of germinating seeds. Frequently, but depending on the species, the second batch represents the majority of seedlings. Delayed germination continues, but in reduced numbers. Often the last seedlings appear when the first seedlings have developed into strong young plants. There is an obvious benefit to the plant in delayed germination, especially in the natural habitat. Losses caused by climatic influences or herbivorous animals thus may be replaced by late-germinating seeds." Even assuming this to be a correct analysis, however, the mechanisms controlling the phenomenon seem not yet to be understood. ED.