

Effect of seed abortion and seed storage on germination and seedling growth in *Aquilaria malaccensis* Lamk. (Thymelaeaceae)

Author(s): [Shankar, U](#) (Shankar, Uma)

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**Abstract:** The fruit of *Aquilaria malaccensis* is a bilocular dehiscent capsule, with each locule harbouring a single seed. If this species aborts a developing seed within a fruit, does the remaining seed benefit in terms of enhanced seed weight, and do heavier seeds confer germination and growth advantages over lighter seeds? As seeds mature in the middle of the rainy season when moisture is abundant in the soil, does desiccation in the storage of seeds reduce germination success? To test these predictions, 821 fruits were examined, including two-thirds fruits that were one-seeded and one-third fruits two-seeded. Fresh seeds varied-nearly fivefold in weight, from 28.8 to 134.8 mg. However, the mean seed weight did not vary significantly between the seeds from one- and two-seeded fruits. On storage at room temperature (28 +/- 2 degrees C), the seeds lost 40 +/- 1.2% moisture by the 5th day and 55 +/- 1.5% by the 14th day. Yet, the difference in mean seed weight was not significant between the seeds from one- and two-seeded fruits. Germination percentage of fresh seeds increased with increase in seed weight: seeds <40 mg failed to germinate, those between 40 and 80 mg resulted in 10.5% germination and those >80 mg germinated vigorously (54.8%). This trend was steady when seeds stored for 5 and 14 days were sown. Germination percentage of all seeds declined drastically with storage time: from 31 for seeds without storage to 25 for 5 days of storage and only 1% for 14 days of storage. Germination was epigeous and it was completed within 40 days from sowing. Time to germination was lesser for heavier than lighter seeds. Survival of seedlings and their growth from heavier seeds was significantly greater than those from lighter seeds. The study shows that the abortion of one of the two seeds does not enhance the weight of the remaining seed. Yet greater seed weight (>80 mg) is advantageous for better germination and seedling growth in *A. malaccensis*.

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Reprint Address: Shankar, U (reprint author), NE Hill Univ, Dept Bot, Shillong 793022, Meghalaya, India.

Addresses:

1. NE Hill Univ, Dept Bot, Shillong 793022, Meghalaya, India

E-mail Address: [arshuma@yahoo.com](mailto:arshuma@yahoo.com)

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