

**Flower Initiation Pattern, Developmental Stages, and Seed Morphology of
Paraphalaenopsis Labukensis P.S. Shim, A. Lamb & C.L. Chan, An Endangered
Orchid in Sabah**

ABSTRACT

Background: *Paraphalaenopsis labukensis* P.S. Shim, A. Lamb & C.L. Chan is a monopodial epiphytic species that can only be found in Sabah. *P. labukensis* orchids have unique characteristics in that it has a long floral lifespan as compared to other orchid species. The flower developmental pattern of *P. labukensis* greatly influenced capsule formation and seed maturation. Objective: The present research was conducted to record the initiation of flower initiation, and floral morphology, and to observe the flowering and capsule development, as well as the effect of different capsule ages on asymbiotic seed germination. Methods: A total of three individual plants of *P. labukensis* were observed. The flowering stages were characterized by quantitative parameters such as length of inflorescence, diameter, and length of buds, the number of flowers produced, and the length of the capsule formed. All the data were recorded through direct observation. Results: Overall, twelve morphological landmark that define each stage of floral development was recorded. Based on the observation, *P. labukensis* inflorescence was asymmetric and in the shape of a panicle. The number of flowers varied among inflorescences, ranging from 3–5, that blossomed at different times. Furthermore, early capsules appeared 40–90 days after pollination (DAP). Then, 120 DAP of the capsule was selected as the most suitable capsule age for germination as it had reached its maturation period. Conclusion: Identifying the duration of the whole flowering developmental process will aid in the production of capsules to attain a reliable and adequate seed source for in vitro seed germination.