SEED DORMANCY AND STORAGE BEHAVIOUR OF SELECTED ECONOMICALLY IMPORTANT PLANT SPECIES FROM WET ZONE LOWLAND RAINFORESTS IN SRI LANKA

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Floriculture and traditional medicine are two main industries that depend on wild plant species heavily. Lack of knowledge on propagation of wild species is one main drawback in utilizing wild plants in these two industries. If the seed biology information of ornamentally and medicinally important wild plants could be elucidated, those findings would be useful in effective utilization of these plants in the commercial production. Thus, the main objective of this study was to determine the seed storage behaviour, dormancy and germination of fourteen selected plant species in wet zone lowland rainforests in Sri Lanka. Fruits were collected from four rainforest reserves in Sri Lanka; Sinharaja, Kanneliya, Yagirala and Pituwala. The study assessed seed germination, embryo length: seed length ratio, embryo morphology and effect of gibberellic acid (GA_3) on seed germination. Additionally, seed storage behaviour was experimentally determined through the hundred seed method. During the study, 6 non-dormant and 8 dormant species were identified. Seeds of 8 species had fully developed embryos, while 6 species had underdeveloped embryos including 4 morphophysiologically and 2 morphologically dormant species. Treatment with GA_3 indicated that 2 species exhibited physiological dormancy. Hundred seed method identified 2 desiccation-sensitive and 12 desiccation-tolerant seed-producing species. This study provides useful information on germination and dormancy breaking of 14 plant species which can be applied to develop suitable seed propagation systems for them. Most of the desiccation-tolerant species identified in this study also have high conservation value. As desiccation-tolerant seeds can easily be stored, seed banking can be recommended as an *ex-situ* conservation strategy for these species. As the studied species include five endemic plants which showed a limited distribution and are currently facing anthropogenic threats, the above information could be utilized in commercial cultivation of those ornamentally and medicinally important plants. Thereby, the pressure of over-exploitation of these species from their natural habitats can be restricted.

***Key words**: Seed germination, Seed dormancy, Seed storage behaviour, Traditional medicine, Conservation strategies.*