

**Seed Germination and Dormancy of *Psychotria gardneri*: as a Dominant Forest Species of Tropical Montane Forest in Sri Lanka****Athugala Y.S.<sup>1,2\*</sup>, Jayasuriya K.M.G.G.<sup>1,2</sup> and Gunaratne A.M.T.A.<sup>2</sup>**<sup>1</sup> *Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka*<sup>2</sup> *Department of Botany, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka*  
*\*yasoja2net@gmail.com***Abstract**

Tropical Montane forest in Sri Lanka is rich in endemism and biodiversity. However most of montane forests are degraded as result of natural and anthropogenic activities. Since *Psychotria gardneri* is a very dominant endemic species in Sri Lankan montane forest, knowledge of seed germination and seed Dormancy is very essential in restoration activities.

Fully ripen seeds of *P. gardneri* were collected from Hantana forest range (altitude: 1,000-1,250 m). Seed: embryo ratio was taken of ripen and germinated seeds, water imbibition of seeds of non-scarified and manually scarified were measured and tests of standard germination and gibberellic acid (GA) treatment were conducted to identify the dormancy classes. Seed germination under light/ dark and dark condition were tested to identify the germination requirement.

Embryo: seed ratio of ripened seeds and germinated seeds was 0.5 and 0.7 respectively. Water Imbibition pattern was similar in both non-scarified and manually scarified seeds. Seed started their germination within 15 days and 50% of seeds germinated within 65 days for standers germination. 53% of seeds germinated within 28 and 38 days respectively for 100 ppm and 500 ppm of GA. Under the fully dark condition 57% seeds germinated within 56 days.

*P. gardneri* has a combination of morphological and physiological dormancy. 100 ppm GA is a suitable treatment for breaking the physiological dormancy. Although Light is not a germination requirement, dark condition has enhanced the germination of *P. gardneri*. If we use bulk of seed to get seedling of *P. gardneri* for restoration purposes, treating of seeds with 100 ppm GA is a best option. If not seeds should be sown in more than 65 days in wet medium.

**Keywords:** Tropical montane forests, Seed germination, Seed dormancy, Morphological dormancy, Physiological dormancy