

**Seed Development, Dormancy and Germination of the Alien Invasive Species,
Lantana camara (Verbenaceae)**

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Lantana camara L. of family Verbenaceae, a native to West Indies, is considered as an invasive species in many tropical and sub-tropical countries including Sri Lanka. Information on seed biology is important in developing control strategies for invasive species. However, little information is available on seed biology of *L. camara* in literature. Thus, the main objective of this study was to gather preliminary information on germination, dormancy and development of *L. camara* seeds.

Seeds were collected from numerous *L. camara* shrubs in Kandy and Ambalangoda regions separately. Seed moisture content, imbibition and germination percentages of non-scarified and manually scarified seeds were determined. Effect of dormancy breaking treatments (Gibberellic Acid treatments [100 ppm and 500 ppm], dry storage) on germination was examined. Seed ontogeny was investigated using seeds collected from plants growing in the premises of the Faculty of Science, University of Peradeniya. Fruit length, width, mass, seed moisture content and germination were examined in developing fruits (1, 2, 3, 4 and 5 weeks after pollination).

Seed moisture content of *L. camara* was 12.9% suggesting that seeds are orthodox. Both non-scarified and manually scarified seeds imbibed water at a similar rate ($T = 1.39$, $P = 0.175$). Thus, *L. camara* seeds have no physical dormancy or combinational dormancy. Germination of non-scarified and manually scarified seeds in light/ dark and constant dark conditions was 0%, suggesting that *L. camara* seeds have dormancy. Seeds contained a fully developed embryo and this suggests that they do not have morphological or morphophysiological dormancy. Thus, *L. camara* seeds may have physiological dormancy. A very few number of *L. camara* seeds responded to dormancy breaking treatments used in the experiment ($F = 19.13$, $p < 0.001$) concluding that *L. camara* seeds have deep physiological dormancy. According to the ontogeny experiments, *L. camara* seeds attained physiological maturity and dispersal maturity by the 4th and 5th week after pollination, respectively. Since the germination percentage of seeds throughout the seed development period was 0%, it can be concluded that onset of dormancy occurs before seeds attained physiological maturity. According to the results obtained, *L. camara* seeds show the potential to remain in the soil seed bank for a long period of time.