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# POLLEN BIOLOGY AND STIGMA RECEPTIVITY OF *Osbeckia lanata* ALSTON. (MELASTOMATACEAE)

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*Osbeckia lanata* Alston. is an endemic, endangered shrub species found in few isolated populations in grasslands and montane forest edges at Horton Plains and Adam's Peak, Sri Lanka. Reproductive traits determine genetic diversity and population dynamics, thus playing a major role on the ecological status of a species. Therefore, understanding of these traits is a prerequisite to develop an effective conservation programme for a species. Reproductive characters of *O. lanata* were studied in order to identify the reproductive system of the species. Sampling was carried out at Thotupola Kanda mountain during the flowering season in 2019 between 09:00 and 12:00 h. Floral characters of developing flowers were recorded. Pollen viability was determined with 1% TTC staining, using *in vivo* and *in vitro* germination assays. Standard staining protocols were followed to assess stigma receptivity. Flowering was initiated in early November and continued till late February, 2020. Flowers were purple-red in colour, pentamerous and arranged solitary or in small clusters. Ten floral developmental stages ($F_1$ to $F_{10}$) from buds to fruit initiation were identified. In *O. lanata* fully developed flowers ($F_8$) had the optimum pollen germination, pollen viability and stigma receptivity. Also, 99 ± 0.2% of pollens were viable at $F_8$ stage. However, *in vitro* germination percentage was 62.0 ± 2.5. Stigmatic papillae were fully developed at $F_8$ stage and germinated pollens on stigmatic surfaces were observed through *in vivo* germination assays. Synchronized pollen maturity and stigma receptivity at $F_8$ stage indicates the possibility of self-pollination leading to inbreeding which may reduce the population vigor. Outcomes of the study generate essential information to develop further studies on pollination syndromes and recovery of *O. lanata* populations in Sri Lanka.

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