Population Study of *Osbeckia lanata* Alston: Towards Its Conservation

R.M.K.S. Randeniya[1]*, E.H.C.M. Eeriyawala[2], A.M.T.A. Gunaratne[1], K.M.G.G. Jayasuriya[1], A.M.A.S. Attanayake[3] and H.A.C.K. Ariyarathne[1]

[1]Department of Botany, Faculty of Science
[2]Postgraduate Institute of Science
University of Peradeniya, Peradeniya 20400, Sri Lanka
[3]Royal Botanic Gardens, Peradeniya 20400, Sri Lanka
**k.s.randeniya@gmail.com*

Osbeckia lanata Alston. is an endangered endemic species inhabiting montane zone of Sri Lanka. Although studies on population ecology are important to comprehend the conservation status, there is no published record on ecology of this species. Thus, we investigated the ecology and seed biology of *O. lanata*. Four field sites (Thotupola, Kirigalpotta, Adam's peak, and Horton Plains) were selected for the study. In each site, four 5 m x 5 m quadrats were randomly laid where *O. lanata* occurred and percentage cover of all species and microhabitat factors were recorded. The phenology was recorded from March 2019 - March 2020 at monthly intervals. Seeds were collected for seed germination studies. In all the sites, *O. lanata* was recorded in areas with 62.0-90.0 % of relative humidity, 16.2-25.7 ^{0}C temperature, and 0-3.9 m/s wind velocity. The soil pH varied between 4.68-5.70. Soil moisture content was 17.5-33.83%. The soil colour was dark yellowish-brown or dark greyish-brown. The highest mean percentage cover of *O. lanata* (60% and 5.5%) was recorded in Thotupola and in Adams peak, respectively. Flowering of *O.lanata* started at the beginning of October 2019 and highest mean percentage of flowering was recorded between December 2019 and January 2020. At the peak flowering, 50±0.5 flowers bloomed on a single plant. The highest mean number of seed pods (33±0.5) were recorded between March-May 2019. Out of ten floral visitors, two were identified as *Xylocopa* sp. and *Ceratina* sp. Two different coloured seeds (brown and black) were observed in a single pod. Zero percent germination was recorded for black seeds under all germination treatments, while 13.8-22% of germination was recorded for brown seeds under light/dark treatment. This study stresses the importance of further research on pollinators, seed dispersal mechanism and propagation of *O. lanata* to fine-tune its conservation plan.

Keywords: *Osbeckia lanata*, Ecology, Seed germination

Financial assistance from Royal Botanic Gardens, Peradeniya and Ministry of Mahaweli Development and Enviromnent is acknowledged.