

Effect of Habitat Differences on Morphology, Anatomy and Fecundity of Lichens

E.S.M. Edirisinghe¹, A.D.S.N.P. Athukorala^{1*} and K.B. Jayasundare²

*sarangiathu@pdn.ac.lk / sarangi_a@yahoo.com

¹ Department of Botany, Faculty of Science, University of Peradeniya, Sri Lanka

² Department of Chemistry, Faculty of Science, University of Ruhuna, Sri Lanka

The effect of habitat differences on morphology, anatomy and fecundity of the lichen species have been rarely studied. However, this would help understand the mechanisms by which some lichens thrive while some get eliminated from the habitat. The objectives of the study were 1) to identify the lichen species common to a site in the middle of the Kandy City (KC) and a site inside the University of Peradeniya (UP, 2) to compare their morphology, anatomy and fecundity of common species between sites. Lichen species were randomly sampled from tree barks and fallen branches and identified using standard keys. Morphological and anatomical characteristics of the lichen thallus, sexual and asexual reproductive structures such as number of apothecia, and ascospores were compared between 2 sites using hand lens, dissecting microscope and compound microscope. Among 39 species found in University premises and 15 species around the Kandy Lake, 5 species, *Physcia* sp, *Parmotrema* sp, *Lecanora* sp, *Graphis* sp, and *Lepraria* sp, were common to both sites. As expected, mean thallus area of 4 species, except *Lepraria* was significantly smaller in KC site than UP site. The change of colour in Thallus (green to grey) were significant in all species between KC and UP. Thickness of upper cortex (significant, $P=0.041$), medulla layer and lower cortex were higher in KC site than UP site in *Parmotrema* sp. while thickness of algal layer is smaller in KC site. A decrease in apothecial number was observed in *Lecanora* sp. at KC site compared to UP site. The current study showed that changes in certain morphological, anatomical and reproductive characteristics can be triggered by the changes in the environment and may attributed to recorded air pollution in KC site suggesting that such species can be used to monitor the quality of the environment.

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