

EPIPHYTIC LICHEN DIVERSITY IN DIFFERENT AREAS OF NAKHON RATCHASIMA, THAILAND

Waewdao Dathong*

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Abstract

Lichens are accepted as bioindicators of air quality and biomonitors of environmental changes. This work aimed to identify epiphytic lichens in Nakhon Ratchasima, Thailand in 2015 by comparing six areas i.e. the center of Mueang district, four directions (N, W, E, S) and at the Boong Ta Lua Water Park. Lichens were investigated and collected on 180 tree samples based on the Verein Deutscher Ingenieure (VDI) protocol. Fifty-four taxa were identified from the 1,044 samples; they belong to 16 families and 30 genera. The highest frequency was *Pyxine cocoes* for 111 followed by *Hyperphyscia adsendes* for 81. There were six species found all study plots; *Dirinaria applanata*, *Hyperphyscia adsendes*, *Laurera megasperma*, *Pyxine cocoes*, *Graphis* sp.1 and *Graphis* sp.2. The species that found only one site were *Hyperphyscia flavida*, *Hypogymnia hypotrypa* and *Hypotrachyna osseoalba*, which found only at the south direction of the city, *Myriotrema microporellum*, *Ocellularia crocea*, *Rinodina intrasa* and *Sarcographa* sp., which found only at the park area. The species richness and Shannon-wiener diversity index were highest at the park for 44 and 3.66 respectively and showed significant different from other sites ($p < 0.01$), whilst the evenness was highest at the north of the city. The Sorensen's similarity coefficient showed the highest value between the park site and the north sites for 77.22 and lowest between the north and south areas for 33.33. For the correlation between lichen frequency and the physiological condition found lichen diversity have a negative correlation with the distance from road. The species that found specific in one sites are interested for using as bioindicator of air pollution in this area.

Keywords: Lichens, biodiversity, bioindicator, environmental quality

Biology Program, Faculty of Science and Technology, Nakhon Ratchasima Rajabhat University, Nakhon Ratchasima 30000 Thailand. E-mail: waewdao.d@nrru.ac.th

* Corresponding author