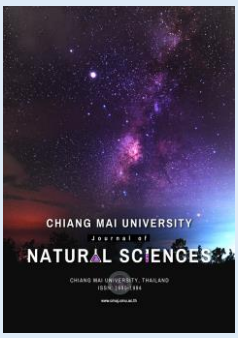

Editor:
Wasu Pathom-aree,
Chiang Mai University, Thailand

Article history:
Received: October 7, 2020;
Revised: December 22, 2020;
Accepted: December 25, 2020;
Published online: March 18, 2021

Corresponding author:
Arunothai Jampeetong,
E-mail: arunothai.2519@gmail.com

Research article

Pollen Morphology in Various Life-form of Aquatic Macrophytes

Ratchaneekorn Sangsuk[1], Henrik Baslev[2], and Arunothai Jampeetong[1,*]

1 Department of Biology, Faculty of Science, Chiang Mai University, Mueang, Chiang Mai, 50200, Thailand
2 Department of Biology, Aarhus University, Ny Munkegade 114-116, DK-8000 Aarhus C., Denmark

Abstract Ability of angiosperms to produce flowers and seeds for the sexual reproduction is important also in aquatic plants. Pollination in aquatic plants is facilitated by insects, wind, and water, however, pollen morphology related to the plant's life forms and pollen dispersal are not well described. This study investigates pollen morphology of selected aquatic macrophytes. Plants were collected and preserved as dried specimens. Mature pollen grains of each species were separated from the anthers and then placed on glass slides and mounted with distilled water. Pollen shape and size were observed under a light microscope (LM). Number of apertures and exine ornamentation were examined using scanning electron microscope (SEM). Closely related plant species had similar pollen morphology. Among the 28 species studied, pollen size varied from small to very large (range 10–200 µm) and their shapes were prolate-spheroidal, prolate, oblate, suboblate, and oblate-spheroidal. Some species had inaperturate pollen grains; the remainders were monoaperture, triaperture or polyaperture. Both colpate and porate apertures were found. The pollen surfaces were echinate, fovelate, granulate, lophate, plicate, regulate, regulate-fovelate, reticulate, striate, and verrucate, respectively.

Keywords: Aquatic plants, Palynology, Pollen ornamentation, Pollination, SEM

Funding: This research was partly supported by Chiang Mai, University, Thailand. HB acknowledges support from the Carlsberg Foundation (CF14-0245) to study the Thai flora.

Citation: Sangsuk, R., Baslev, H., and Jampeetong, A. 2021. Pollen morphology in various life-form of aquatic macrophytes. CMUJ. Nat. Sci. 20(3): e2021050.