

# Investigation of Phytochemicals, Nutritional Value and Antimicrobial Activity Found in the Leaves and Seeds of *Hygrophila phlomoides* Nees.

Hsu Poe Phyu<sup>1</sup>, Ei Ei Moe<sup>2</sup>, Maw Maw Htay<sup>3</sup>,  
Hnin May Zin Kyaw<sup>4</sup>, Thandar Hlaing<sup>5</sup>

## Abstract

*Hygrophila phlomoides* Nees. is one of the flowering plants belonging to the family Acanthaceae. In Myanmar, it was commonly known as Migyaung-Kun-Bat. These plants were collected from Chaung-Phyar-Kyi Village and Aung-Heik Village in Maubin Township, Ayeyarwady Region during January-May, 2022. In this research, the morphological characters of the vegetative and reproductive parts of the plants and the microscopical characters of the fresh specimens of leaves, stems, roots and dried powdered samples were studied. The sensory characters of the dried powdered sample has been examined and presented as a diagnostic characters. In morphology, the plants were herbs, racemose. Flowers were pink color with purple spotted, corolla bilabiate and seeds were pale green color and brown color when dry. In microscopical characters, diacytic types of stomata were found on both surfaces and more abundance on lower surface in leaves and also presented multicellular uniseriate trichomes and cystoliths on both surfaces. And then, the preliminary phytochemical investigation, physicochemical properties were tested to determine their important chemical constituents using the different reagents. The elemental analysis of the samples of leaves and seeds were analyzed by using EDXRF method and nutritional value of leaves and seeds were tested by AOAC method for evaluating their compositions. By EDXRF method, it was found that calcium was the most abundant element in the leaves and seeds. In nutritional value of *Hygrophila phlomoides* Nees. leaves and seeds were found high carbohydrates content than the other contents. In the study of antimicrobial activities, agar well diffusion method was utilized and tested by eight different test organisms.

**Keywords:** Morphological, microscopical, diacytic, EDXRF, antimicrobial.

---

<sup>1</sup> Demonstrator, Botany Department, Maubin University, Myanmar

<sup>2</sup> Demonstrator, Botany Department, Maubin University, Myanmar

<sup>3</sup> Demonstrator, Botany Department, Maubin University, Myanmar

<sup>4</sup> Demonstrator, Botany Department, Maubin University, Myanmar

<sup>5</sup> Demonstrator, Botany Department, Maubin University, Myanmar