

DIVERSITY AND UTILIZATION OF AQUATIC PLANTS IN THREE TANKS IN THE ANURADHAPURA DISTRICT, SRI LANKA

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Aquatic macrophytes have been used since ancient times to derive economic benefits. Anuradhapura district comprises of many man-made tanks most of which have a heavy growth of aquatic macrophytes. 'Mihintale', 'Maradankadawala' and 'Thibbatuwewa' tanks were selected as study sites. Little research has been done on these tanks in terms of aquatic plants. This study investigated the diversity of aquatic plants in the above seasonal tanks and also focused on investigating the utilization pattern of aquatic plants by locals with the aim of instilling in the locals the concept of sustainable utilization.

The study was conducted for a period of six months. Transects and quadrat sampling were done. The abundance of aquatic plants was measured using a modified Braun-Blanquet method. Representative specimens were collected for subsequent verification of field identification by comparing with the reference collections. Data were analyzed, using diversity indices. Information on utilization of aquatic plants was gathered by interviewing 500 people using a structured questionnaire.

Thirty-four aquatic plant species, representing 30 genera and 24 families, were encountered. 'Mihintale' (8.37 %) and 'Maradankadawala' (9.11 %) had a higher percentage of *Marsilea quadrifolia* and in 'Thibbatuwewa' a higher percentage of *Ceratophyllum demersum* (11.99 %) was observed. Species richness, based on Margalef's diversity index, was highest in 'Mihintale' tank (4.2180) and lowest in 'Thibbatuwewa' tank (3.1331). From the respondents, 30 % use aquatic plants for food, 27 % use flowers for temple offerings and decorations, 15 % in aquaria and ponds, 14 % for medicinal purposes, 09% as bio-fertilizers and 05% for weaving and thatching. The present survey revealed that the consumption of aquatic plants was low compared to the available resources in the study area. Most frequently consumed edible aquatic plants were *Alternanthera sessilis* (31 %), *Ipomoea aquatica* (27 %) and *Nelumbo nucifera* (19%). Some earned their living by cultivating (1.84%) *A. sessilis* and there were 92 respondents who sell this plant to vendors or directly to customers. *Baccopa moneri*, *Aponogeton* spp., *Nelumbo nucifera*, *Hygrophila schulli* and *Nymphaea* spp. have been recorded as medicinally important plants for the community. *N.nucifera* (41 %) and *Nymphaea pubescens* (31 %) were widely used for offerings and for decorations. But all these flowers are derived only from the natural stock.

The survey revealed that the residents near tank areas are willing to engage in culturing and selling aquatic plants, if the necessary resources are provided. These results indicate the high potential of developing industries related to aquatic plants in Anuradhapura, and by it promoting tank maintenance and sustainable utilization of the rich resource of aquatic plants.