CURRENT STATUS AND CHALLENGES FOR CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

Editors

S. SHEEBA

N. RATHEESH

9 789353 968717

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SREE NARAYANA COLLEGE KOLLAM
Kollam- 691001 KERALA
www.snckollam.ac.in
E-mail: snckollam@gmail.com

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CHAPTER 47

A GLANCE TO AQUATIC ENTOMOFAUNA OF SASTHAMKOTTA LAKE IN SOUTHERN KERALA

Munisha Murali S*, Sheeba S and Lichu Thampi
PG and Research Department of Zoology
Sree Narayana College, Kollam - 691001
*Correspondence E-mail: munishamurali@yahoo.co.in

ABSTRACT

The aquatic insects in Sasthamkotta Lake were signified by 16 families under five different insect orders. Amongst the entomofauna order Diptera was dominant and diverse with seven families. The highest mean value of Shannon-Wiener diversity index(1.886) recorded during June and low (0.6616) in March. The higher richness index (2.401) was observed in June and low (0.4809) during March. The overall dominance index of aquatic insects in Sasthamkotta Lake was 0.1886.This initial study on entomofauna indicates that lake is under slow pollution and endorses conservation steps for protection.

Keywords: Aquatic insects, Sasthamkotta lake, Diptera, Diversity indices

Introduction

Aquatic insects spend a part or entire life cycle in water. These insects are used as indicators of water quality in freshwater ecosystem. The natural and anthropogenic stress experienced by the water can be measured by the different tolerance level of these organisms. Knowledge on distribution and diversity improve the understanding on the health of the aquatic ecosystem. Entomofauna play an important role in the proper maintenance of the freshwater aquatic ecosystem. Sasthamkotta Lake, the largest fresh water lake in Kerala, is the sole water furnishing system to the Kollam city. On this background it is necessary to note the condition of the water with reference to aquatic insects in the lake.

Materials and Method

The present investigation was carried on the diversity of aquatic insects in Sasthamkotta Lake in Kollam district in Kerala. Sasthamkotta Lake is located between 9°0'-9°5' N latitude and 75°35'-76°46' E longitude. The lake has a catchment area of 934.56 hectares and surface area of 373 hectares. The samples were collected randomly from six stations during the months from February 2016 to June 2016. Aquatic insects were collected using D-frame aquatic net(1 x 1 m area, mesh size 500 μm) and drift net. The 30m expanse of reach between the stations was taken during the collection. The samples from each station were pooled together and preserved in 80% alcohol. The specimens were sorted, observed and identified up to the best possible taxonomic level using appropriate field keys (Peterson *et al*., 1981; Tonapi, 1983; Morse *et al*., 1994; Subramanian and Sivaramakrishnan, 2007). The biodiversity indices of aquatic insects were determined with the help of Past Software.

Result and Discussion

A total of five different insect orders belonging to 16 families were found during the study. Diversity of aquatic insects collected from Sasthamkotta Lake was illustrated in Table1. The orders were

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