

DIVERSITY OF MANGROVE LITTER INHABITING MICROARTHROPODS WITH SPECIAL REFERENCE TO THEIR FUNCTIONAL ROLE IN MIDNAPORE (EAST) COAST, WEST BENGAL, INDIA

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ABSTRACT

Microarthropods, an important faunal component in mangrove estuarine complex have been found to play significant role in nutrient cycling in mangrove ecosystem and exhibited spatial and temporal variation in respect of their density and distribution. The present paper deals with the diversity, seasonal variation of population density and community indices in relation to major ecological parameters in coastal estuarine environment of Midnapore (East), West Bengal, India. All total number 44 species under 18 genus 12 families of microarthropods have been recorded from different ecotones and litters of different mangrove species of the study areas. Maximum density and diversity have been shown at Nayachar Island followed by Dadanpathrabhar, Khejuri and Junput. A comprehensive laboratory studies on the role of different microarthropods in the decomposition of a selected mangrove plant species revealed successional occurrences of different microarthropods in different stages of decomposition. Microarthropodal materials from soil/litter were collected by stainless steel corer followed by an extraction process with Tullgreen faunal. Preserved sample (70% alcohol) have been identified and quantified under stereoscopic binocular microscope. The changes of physio-chemical parameters also studied viz. pH, organic carbon (%), salinity (ppt), total-N (ppm), total-P (ppm), available-K (ppm) to relate such changes with the changing pattern of species composition, density fluctuation of species composition and density fluctuation of microarthropods in different selected study areas.

Keywords: Microarthropods, Mangroves, Litter decomposition

INTRODUCTION

The mangrove-estuarine ecosystem represents one of the most productive ecosystems of the world because it combines two sub-systems—shallow water forest mangrove subsystem