
Research Article

Horizontal distribution of intertidal nematode from Sabah, Malaysia

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ABSTRACT

The aim of this study is to determine the horizontal distribution of nematodes species density, species diversity and feeding types on the intertidal area of Lok Kawi beach, Sabah, Malaysia. The approach taken was to sample the nematodes and measured selected parameters of the hole water from high-water to low-water marks. The results show that the nematode feeding type non selective deposit feeders (1B) and epigrowth feeders (2A) groups, species diversity, evenness, species richness and species number increased towards the low tide level. The height of the beach did not clearly show their influence on the horizontal distribution of the nematodes. Pearson correlation coefficient shows that there is a significant correlation ($R = 0.64$, $p < 0.05$) between the height of the beach and the species diversity of the nematodes. However, the cluster and factor analysis of the stations did not show clearly about the influence of height of the beach on nematodes densities. Therefore, we conclude that there were no definite and universal causative factors, which controlled the horizontal distribution of nematodes species diversity in the intertidal

sandy and muddy habitats of the Lok Kawi beach, Sabah.

INTRODUCTION

Previous studies on horizontal distribution of nematodes have been carried out along salinity gradients in estuaries (Warwick, 1971), across intertidal sandy habitats (Blome, 1983) and with increasing water depth both onto the continental shelf and into the deep sea (Tietjen, 1976). Most of the studies were carried out in the temperate countries.

Several species groups have been suggested across the sandy intertidal habitats. Firstly, species often restricted to certain zones namely sublittoral fringe guild, secondly, eurytopic species (usually with their distribution centred on the lower shore) and thirdly, species confined to the upper shore (Coull, 1988). Four strata of meiofauna distribution was proposed during low tide on sandy beaches (McLachlan, 1980); namely, (1) a dry sand stratum – near the top of the beach where the upper sand layers are >50% desiccated; (2) a moist sand stratum, which underlies the dry sand stratum and extends seaward. It reaches until the depth of the permanent water table; desiccation is < 50% and oxygen levels are high (>70 % saturation); (3) Water table stratum crossing the beach and

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