

## Relationship between Environmental Variables and Marine Nematode Densities in Teluk Awar, Sarawak, Malaysia

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### Abstract

*A pilot study was carried out in Sarawak on the community structure of free-living marine nematode. The aim of this study was to determine the horizontal distribution of marine nematode associated with abiotic and biotic environmental factors. One-way ANOVA showed significant differences in the environmental variables (salinity, pH, dissolved oxygen, temperature, total organic matter) for both study transects. Chlorophyll *a* only showed significant difference in transect A. The mean densities of marine nematode was highest at Station 4 of transect A and Station 1 of transect B. Spearman correlation demonstrated that most of the environmental variables were positively correlated with marine nematode except for chl *a* in transect B. This study concluded that the food source availability probably contributes to the establishment of marine nematode community in Teluk Awar with the aids of several environmental factors such as salinity, temperature and dissolved oxygen.*

*Keywords:* marine nematode, horizontal, Sarawak, intertidal, subtidal

### Introduction

Ecological studies on the marine nematodes had shown the importance of their occurrence in marine environment (Yodnarasri *et al.*, 2008; Adão *et al.*, 2009; Hourtson *et al.*, 2009). In a review of the tropical meiobenthos, Alongi (1990a) outlined a picture with large geographical, biotropical and seasonal variations of the organisms. The tropics have greater range of meiobenthos due to various habitats such as carbonate sands on beaches and shelf regions, estuarine muds, mangrove thickets, and enclosed lagoons. In oligotrophic tropical seas, the abundance of littoral meiobenthos is very similar to that in temperate coastal areas, ranging from several hundred to several thousand specimens per 10 cm<sup>2</sup> (Alongi, 1990b; Vanhove, 1993). Giere (2009) showed that the dense populations of nematode are beyond the range of more than 10,000 per 10 cm<sup>2</sup> in Malaysian coast and 17,000 per 10 cm<sup>2</sup> in Indian salt marsh.