

IS THERE ANY SEASONAL VARIATION OF MARINE NEMATODE WITHIN SEDIMENT AT INTERTIDAL ZONE ?

SUPAPORN YODNARASRI¹, SHIGERU MONTANI², KUNINAO TADA¹, SEIICHIRO SHIBANUMA² AND TOSHIRO YAMADA³

¹ Department of Life Sciences, Faculty of Agriculture, Kagawa University, Ikenobe, Miki, Kita, Kagawa, 761-0795

² Graduate School of Environmental Science, Hokkaido University, Kita 13, Nishi 8, Kita-ku, Sapporo, Hokkaido 060-8628

³ Nishimuragumi Co Ltd, 133 Sakaemachi, Yubetsu, Monbetsu, Hokkaido 099-6404

The present study was carried out at Hichiripu tidal flat at Akkeshi, the eastern part of Hokkaido. It covers an area of 3.56 km², with a mean depth of one meter and a maximum depth of two meters and sediment temperature ranges from -3°C to 25°C in a year. The nematode assemblage and seasonal variation were investigated in the intertidal sediment, also determined the relation of nematode with the environmental parameters of sediment. The samples were collected at 5 stations in intertidal zone on April, June, August, December 2003 and February 2004. The fauna samples were investigated nematode composition (abundance, species composition, biomass, diversity and feeding structures) in sediment surface to five centimeters sediment depth, using by plastic tube (area 5.304 cm²) with two replications of each station. The surface sediment (0-0.5 cm depth) was measured the sediment physicochemical characterizations (media grain size, chlorophyll *a*, acid-volatile sulfide content, total phosphorus, total organic carbon and nitrogen). The data of nematode community were analysis using PRIMER analysis to identify the nematode assemblages of each sampling period with a similarity community composition. The correlation analysis was used to test the correlation between nematode community and environmental parameters. Sediment parameters varied during a year. Fifty-four species of marine nematodes distributed in the intertidal sediment at Hichirippu lagoon, ranged from 35 to 41 species during one year. The lowest and highest abundances of nematode were 305±151 to 1021±905 ind 10cm⁻² in June and December, respectively. The lowest and highest biomass of nematode were 1.18±3.46 to 3.04±1.98 mgWW 10cm⁻² in February and December, respectively. Nematode assemblages showed seasonal variation tested by PRIMER analysis. Two dominant species; *Chromadora* sp. and *Ptycholaimellus* sp showed clear seasonal variations in the intertidal sediment of this lagoon, ranged in 4-40% and 2-33% of total density, respectively. The highest and lowest densities of *Chromadora* sp. were found in December and June, respectively; while the highest and lowest densities of *Ptycholaimellus* sp. were found in August and December, respectively. Also, trophic structure had seasonal variations. The test of correlation analysis was not found the correlations between sediment parameters and abundance of nematode in this study. Perhaps, the one of important factor was sediment temperature (range of -2 to 24°C during the sampling period) that induced the different dominant species of nematode at each sampling period.