

ADÃO, H.; M. VINCX AND J.C. MARQUES-2004. Seasonal dynamics of free-living nematode communities in association with sediments of the *Zostera noltii* seagrass beds the sediments of seagrass beds in the Mira estuary (SW PORTUGAL). Twelfth International Meiofauna Conference, Ravenna, Italy, pp-122.

SEASONAL DYNAMICS OF FREE-LIVING MARINE NEMATODE COMMUNITIES IN ASSOCIATION WITH SEDIMENTS OF THE *Zostera noltii* SEAGRASS BEDS IN THE MIRA ESTUARY (SW PORTUGAL)

HELENA ADÃO¹, MAGDA VINCX², JOÃO CARLOS MARQUES³

¹IMAR-Institute of Marine Research-CIC, Biology Department, Évora University, Évora, Portugal.

²Marine Biology, Ghent University, Ghent, Belgium.

³IMAR-Institute of Marine Research-CIC, Faculty of Sciences and Technology, University of Coimbra, Coimbra, Portugal.

e-mail: hadao@uevora.pt

The temporal variability of the density, composition and population structure of meiobenthic communities, focusing on the ecology of free-living marine nematodes was studied at two sampling sites in sediments of *Zostera noltii* seagrass, and it was related with seasonal variability of the environmental factors. Nematoda taxon (87%) was the dominant genus, followed by Copepoda (6%), Kinorhyncha, Oligochaeta, Ostracoda, Turbellaria, Bivalvia and Amphipoda. Other taxa were always observed in low numbers: Gastropoda, Ciliophora, Gastrotricha, Halacoiridea, Cnidaria, Insecta and Acari. The analysis of the temporal variations of the meiofauna assemblages, at both sampling stations, indicated an evident seasonality, was possible to divide into seasonal groups: early summer 94, summer-autumn, winter-spring, and summer 95. However, the densities and seasonal patterns between sampling stations were different. It was not possible to identify any specific environmental factor to explain the seasonal variation and composition of meiofauna densities and composition. Abiotic differences between both sites studied seem not to be the main factors affecting the temporal changes of the meiofauna communities.

The study of temporal variation of the genera composition of the dominant taxon (Nematoda), with distinct life cycles and different relationships with environmental factors, allows the explanation of the structuring factors of the temporal dynamics of meiofauna communities observed in Mira estuary. *Terchellingia*, *Paracomesoma*, *Odontophora* and *Linhomoeus* were dominant genera. As expected, sediments were mainly populated by non-selective deposit feeders and epistrate feeders. The analysis of the temporal variations of the Nematoda assemblages, at both sampling stations, indicated an evident seasonality. It was possible to divide this into seasonal groups: early summer 94, summer 94, autumn, winter-spring, and summer 95. However, the densities and seasonal patterns between sampling stations were different. It was not possible to identify any specific environmental factor to explain the seasonal variation and composition of Nematoda assemblages, but it was possible recognize the combined effect of several environmental parameters related to the seasonality of the Nematoda.

Biotic factors such as food availability, life cycles and trophic conditions, may play an important role in structuring the seasonal changes obtained. In fact, the temporal variation patterns were closely associated with the seasonality of the populations and the evident changing of the trophic group dominance, suggesting changes in food availability.