NEMATODE MORPHOMETRY FROM THE SHELF TO THE DEEP SEA IN EUROPEAN MARINE WATER.

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We investigated patterns in nematode length, width and length/width ratio by analyzing the MarBEF-MANUELA database (morphometric data on 37733 nematodes from the shelf to the deep-sea). Generally, nematode individual biomass is decreasing from the shelf to the deep sea as a consequence of a decreasing length, confirming the hypothesis that an increase in length requires structural growth which is related to food availability. of sufficient food. Nematode length at the shelf seems to be influenced by food availability: nematode length in cohesive sediments rich in organic matter (OM) is significantly higher compared to permeable sediments. However, in sandbanks subjected to very strong currents where food availability is extremely low, we observed the longest average nematode length. This increased length from these nematodes probably prevents them from being eroded. In addition, we suggest that the ectosymbiontic bacteria observed on *Leptonemella* individuals provide additional organic matter for the nematodes. Nematode biomass and nematode length spectra shift towards lower values, both at the Aegean Shelf and on the sandbanks of the Belgian Continental Shelf where anthropogenic physical disturbance (beam trawling or sand extraction) occurs frequently.Nematode width decreases with depth in general and within most of the bathymetric transects sampled. However, large differences in nematode width occur at comparable depths, both at the shelf and the deep sea. High width values in the Aegean Sea coincide with short lengths, resulting in a stout nematode morphometry in this area.. We hypothesise that the increased width values are a result of storage of reserve products to overcome periods with low food availability. Therefore, we conlude that nematode morphometrics are influenced by food availability, biogeochemichal processes, hydrodynamic stress, mineralisation rates and physical disturbance.