The nematode assemblage as a tool for the assessment of fish farming effect, Limski kanal Bay (Northern Adriatic Sea, Croatia)

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For the last decades, spatial and/or temporal alteration of nematode assemblages structure have been successfully used as a tool to assess various anthropogenic impacts. Recently, they have been increasingly examined as indicators of the Ecological Quality Status (EQS). This study was conducted in order to explore the suitability of alterations in nematode assemblage structure as a tool for the assessment of fish farming effect, and to evaluate selected descriptors as an indicators of the EQS. Sampling was carried out at seven sites in Limski kanal bay: four underlying commercial fish farms, one under the quarantine cage unit, and at two control sites located 25 m and 1 km away from the farming area. Samples were collected in two contrastive periods related feeding rate and biodeposition (summer *vs*. winter). The results of multivariate analyses based on taxonomic composition clearly separated the nematode assemblages underlying fish farms *vs.* outer control site, as well as assemblages from the farm sites in two contrastive seasons. The results of univariate analysis using coenological descriptors was in accordance with the previous finding, confirming nematodes as a suitable tool of environmental monitoring and indicators of EQS. The results related functional indices did not permit a clear and unequivocal interpretation of the interaction between main anthropogenic and natural factors controlling structural and functional diversity of nematode assemblages. The results of this study suggest that use of functional indices as indicators of EQS should be adjusted, with class boundaries set up specific for muddy and sandy sediment types.

Poster presentation

Open section, I am going to submite the paper for the Proceedings publication