Effects of aquaculture activities on meiofauna community structure in eastern middle Adriatic Sea

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Growing expansion of intensive marine aquaculture activities has raised growing concerns about the potential negative impacts on the marine environment. The goal of this study was to determine the effects of fish farm and mussel farm, situated in the different parts of the middle eastern Adriatic Sea on meiofaunal assemblages and biochemical composition of sedimentary organic matter in the surrounding area. Sediment samples were taken at two aquaculture stations, in the fish farm one was located at the edge of the cages (FF 1) and the other directly below the cages (FF 2), in the mussel farm one was located at the edge of the farm (MF 1) and the other directly below the farm (MF 2). Additionally, in both aquaculture sites sediment samples were also taken at one control station (CTRL FF and CTRL MF, respectively) situated at a distance of cca 700 m from the farms. Preliminary results suggested that the presence of the cages induced accumulation of proteins, lipids and biopolymeric carbon in the sediments, resulting in increased total meiofaunal abundances, but reduction in meiofaunal diversity under the cages. Furthermore, preliminary results showed that the presence of the mussel farm also resulted in increased total meiofaunal abundances under the farm, but caused a reduction in meiofaunal diversity under the farm. We hypothesize that these preliminary results revealed differences in meiofaunal community structure between aquaculture sediments and control ones, as the growing dominance of nematodes in comparison with the gradual disappearance of rare taxa below the farm.