Poster 14

ACTIVE COLONIZATION OF ENRICHED AND UNENRICHED SEDIMENTS BY DEEP-SEA NEMATODES

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One explanation for high deep-sea species richness is the patch-mosaic model, in which small-scale patches of organic matter and disturbance create microhabitats in space and time, providing opportunity for colonization. To elucidate the functioning of such mosaic systems one must understand the mechanisms and rates of arrival of new organisms into patches. Given that, a small-scale laboratory experiment was conducted on board to investigate the ability of deep-sea nematode species to actively colonize enriched and unenriched sediments. A 500 µm mesh-covered cylinder filled with defaunated sediment was placed in plastic containers previously filled with sediments containing indigenous meiofauna collected from 1300 m water depth. The defaunated sediments were either enriched with the diatom *Thalassiossira weissflogii* or unenriched. Samples from the defaunated sediment were taken after 9 and 17 days. As controls, plastic containers containing the sediment with indigenous meiofauna, but without an internal cylinder, were also sampled at each time interval. After 9 days, nematodes had colonized both enriched and unenriched sediments and their density in the enriched treatment was significantly higher. Although the number of species did not differ between the treatments, the community structure in unenriched sediments was more variable. After 17 days, nematodes densities and number of species in the enriched sediment did not differ from 9 days, while in the unenriched sediment both measures had significantly decreased. Regardless of which treatment, the colonizers had a large body mass and were dominated by one species of *Sabatieria* and one of *Leptolaimus*. Over the course of the experiment, nematode densities and number of species in the controls did not differ from an a priori sediment sampling, nor did nematodes community structure, indicating the potential of short-term laboratory manipulative experiments with deep-sea nematodes. This study demonstrates that deep-sea nematodes can actively colonize defaunated sediments and that the presence of diatoms may enhance colonization rates. Our results also suggest that the size of the nematode may play an important role in their foraging success.