Distribution and habitat selectivity of deep-sea canyon nematodes

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Dispersal processes are known to influence assemblage dynamics of marine benthic invertebrates. Although without pelagic larvae and small in size, nematodes are found over wide geographical ranges and might be passively carried by water currents after resuspension events (caused by disturbance processes) and resettle as 'particles'. Such dislodgement is important for less-mobile taxa to achieve dispersal. The Whittard Canyon is a physically disturbed environment that receives high amounts of sediments and organic material coming from the shelf or surface waters, which could define the high abundances of meiofaunal groups found there. Selective settlement of nematodes was observed following a resuspension event under ex-situ experimental conditions using samples collected in the Whittard canyon at 812m water depth. Three different types of energy sources (algae, bacteria, and sulphides) and two different controls (empty and azoic sediment) were offered to a nematode community sinking through the water column in three independent, simultaneously running experiments. The significant differences ($p < 0.02$) between nematode assemblages demonstrated that nematodes are attracted by different energy sources. These experiments were combined with the analysis of the nematode community of the dominant species and the biogeochemical environment of background samples from the experimental site in order to study their habitat specificity and trophic interactions. The combination of background and experimental samples suggested that nematodes colonize empty patches selectively when descending in the water column, but whether they are attracted by food or by other attractants is still unclear.