CARBON SOURCES SUPPORTING NEMATODE COMMUNITIES IN KENYAN MANGROVE AND SEAGRASS SEDIMENTS

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The benthos in intertidal and shallow subtidal coastal habitats typically receives a variety of carbon and energy inputs. In vegetated habitats such as mangroves and seagrass meadows, the local plant production generates important inputs of detritus, but microphytobenthos, epiphytes and imported phytoplankton remain potentially significant C sources for benthic invertebrates. The relative importance of different carbon sources for different consumer taxa under particular ecological settings often remains unclear. Clearcut information on endobenthic consumers in general, and on meiofauna in particular, is scant. In mangrove systems, the mangrove litter fall has long been considered as the major source of energy and carbon for benthic consumers. The aim of this study was to investigate the relative importance of different major carbon inputs for the meiobenthos in a mangrove-bordered creek at Gazi Bay, Kenya. We have sampled a range of stations from mangrove vegetations up in the high littoral down to seagrass meadows in the shallow subtidal. We have measured stable carbon isotope signatures of the predominant primary producers and of nematodes and oligochaetes. The deposit-feeding oligochaetes typically follow the *13C of sedimentary organic matter, suggesting little selectivity. Nematodes show a broad range of patterns. In the upper sediment cm, the relative importance of microphytobenthos and/or inwelled phytoplankton to their nutrition is large. Several dominant nematode genera, like Astomonema and Catanema, consistently exhibit very depleted *13C which can only be explained by a trophic link with chemosynthetic bacteria. Our findings challenge the old view that the benthos in mangrove systems completely relies on mangrove litter for its carbon and energy requirements.