

# Effect of short-term hypoxia on feeding activity of intertidal nematodes

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We investigated the effect of short-term hypoxia (6 days) on the feeding activity of nematode from the intertidal Paulina in the Westerschelde Estuary, south-west Netherlands. Eight cores (i.d 10cm) were obtained from the intertidal area in September 2013. The cores were transferred to the lab, maintained in a temperature controlled room (16 °C) and topped with seawater (salinity 24) from the sampling site. Cores were randomly allocated to Control (2 cores), Oxic (3 cores) and Hypoxic (3 cores) treatments for 6 days. Overlying water was bubbled with N<sub>2</sub> to initiate Hypoxic conditions and with ambient air in both Oxic and Control treatments. To test the effect of short-term hypoxia on feeding activity of nematodes, <sup>13</sup>C pre-labelled diatoms were added to overlying water of the Oxic and Hypoxic treatments at the first day of experiment. The cores were further incubated in the dark to avoid additional diatom growth.

At the start and end of the experiment, sediment oxygen profiles were measured in all cores using Unisense oxygen micro sensors (type ox100) in vertical increments of 250 µm. Then, the upper two centimetres of sediment were sliced in 1cm intervals (0–1 and 1–2 cm) and each slice were sieved on 250 and 38µm sieves. All animals and sediment retained on both sieves were stored in –20 °C until further processing.

Investigation of the nematode community composition revealed four dominant genera (*Praeacanthoichus*, *Sphaerolaimus*, *Axonolaimus*, *Metachromadora*). Stable isotope <sup>13</sup>C composition will be investigated at the genus level for these genera, while the feeding activity of the other nematodes is treated as “bulk” group. From each sediment layer, the mentioned nematode groups were hand-picked up with a needle, counted and stored in clean embryo dishes with MilliQ water to remove adhering particles. Nematodes were then transferred to two drops of MilliQ water in 3.5\*5.0 mm tin cups. The cups were oven-dried at 60 °C, pinched closed and stored in 96 microwell plates in a vacuum desiccator till future (<sup>13</sup>C) analyses. The same procedure will be done for the nematodes retained on the 38µm sieve.

Our ongoing results will show possible differences in food uptake by nematodes under Oxic and Hypoxic treatments and also whether nematodes will reduce their feeding activity (adaptation) in hypoxic condition.