

## Feeding behavior and prey selection of *Temora longicornis* fed on toxic dinoflagellates, *Alexandrium* spp.

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Reported responses of zooplankton grazers to toxic dinoflagellates are highly variable, even within species of both grazer and dinoflagellate. Here, we examined the grazing behavior of a copepod, *Temora longicornis*, to two similarly sized species of *Alexandrium* (*A. tamarense* and *A. pseudogonyaulax*) and three different strains of *A. tamarense* (Alex 5, Alex 2 and Alex H5) in comparison with grazing on a similarly sized, non-toxic control, the dinoflagellate *Protoceratium reticulatum*. The different species/strains varied in their toxicity (PSP levels and lytic activity). Using high-speed video observations of tethered copepods during 4 h subsequent to the addition of the algae we found four distinctly different response of the copepod: (i) the 'normal' behavior, in which the feeding appendages were beating almost constantly to produce a feeding current and most (90 %) of the captured algae were ingested (the control, algae *P. reticulatum* and Alex H5); (ii) the appendage beating activity was reduced by ca. 80 % during the initial 60 min, after which very few algae were captured and ingested (strain Alex 5); (iii) capture and ingestion rate remained high, but ingested cells were regurgitated (strain Alex 2); and (iv). the copepod continued beating its appendages and captured cells at a high rate, but after 60 min, most captured cells are rejected (*A. pseudogonyaulax*). The responses were related to PSP level and composition and, hence, may account for the highly variable feeding response to toxic algae reported in the literature.

**Keywords:** prey selection; prey behavior; copepod; *Alexandrium* spp.

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