

Species-specific grazing impacts of copepod nauplii

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Copepod nauplii can be a dominant component of the microzooplankton, and are present year-round in subtropical ecosystems. However, little is known about species-level differences in grazing rates and trophic impacts across the naupliar assemblage. Our goals were to measure ingestion by two species of mid-stage (N3-N4) copepod nauplii in a subtropical embayment, evaluate species' differences in prey preferences, and estimate the trophic impact of naupliar grazing by each species. Five combined bottle incubation and seawater dilution experiments were performed over a two-week period where the *in-situ* 2-35 μm total cell biomass ranged from 37 – 158 $\mu\text{g C L}^{-1}$. Both *Parvocalanus crassirostris* and *Bestiolina similis* grazed a range of prey types and sizes, and shifted their selectivity of prey groups over the two-week period. In general, *P. crassirostris* grazed on a wider spectrum of prey than *B. similis*, which avoided the smallest potential prey (2-5 μm) across all dates. Both species had similar overall grazing rates as well as high daily carbon rations (at times >100%), and selected for the largest cells when they were more abundant. The trophic impact of each species was driven largely by *in situ* nauplius abundance, which was higher for *P. crassirostris*, from 0.8 to 8.9 nauplii L^{-1} , than for *B. similis*, which ranged from 0.2 to 0.8 nauplii L^{-1} . Our results suggest that the two species overlap in their potential prey, however *P. crassirostris* appears to target a wider variety of prey, while *B. similis* may prefer larger cells.

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