

Grazing by microzooplankton in the South Eastern Black Sea

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Grazing impact of microzooplankton on plankton < 200 µm was determined by dilution experiments in winter and early summer of 2011 in coastal waters of the South Eastern Black Sea. During the mixing period, nano- and microphytoplankton were the major protozoan food source, contributing nearly 65 % of the total consumed carbon (30.1 µg C l<sup>-1</sup>). Heterotrophic bacteria and heterotrophic nanoflagellates were the second most important food source, contributing 14 and 19 % of the total consumed carbon, respectively. *Synechococcus* spp. remained an insignificant portion of protozoan carbon consumption (2 %), probably due to its low contribution to the total autotrophic carbon biomass. On the other hand, during the stratification period, protozoan carbon consumption increased by 4 times (133.7 µg C l<sup>-1</sup>). Heterotrophic bacteria and microphytoplankton were the major carbon sources for protozoans, contributing 42 % and 45 % of the total carbon consumed, respectively, followed by heterotrophic nanoflagellates (10 %). In regards to nanophytoplankton, their contribution to total carbon consumed by protozoa decreased by 10 times (to 2.5%), possibly because of concurrent bloom of *Emiliana huxleyi* which is known to deter grazing of protozoan. Low mean daily removal of primary production (20 %) also suggest much of the primary production was not grazed, most likely removed by aggregation and sedimentation. In conclusion, these results suggest that the microzooplankton was responsible for channelling a significant fraction of plankton biomass, either from direct consumption of autotrophs or through consumption of heterotrophs, which would have been favoured by organic carbon from the crashing stocks of autotrophs.

Keywords: Grazing, primary production, phytoplankton, microzooplankton, Black Sea

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