

The time-course of dilution experiments: Implications for the assessment of grazing by microzooplankton

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The dilution method is a standard to measure microzooplankton grazing upon phytoplankton in the ocean. Grazing experiments are normally performed during 24 hours in order to cover the diel cycle. However, there is no information about the time-course of grazing during incubation. In this study, we sampled each incubator every hour for picoplankton, every 4 hours for nanoplankton and every 12 hours for chlorophyll and microplankton. A rather important variability of grazing rates was observed through the experiment. During the first half of the experiment we observed a large variability and the highest values of grazing rates. By contrast, grazing was much more constant and close to zero during the second half of the experiment. These results could be explained as (1) the loss of natural conditions after 12 h of incubation, or (2) the stabilization of altered conditions after sampling, handling, and incubation. In any case, these observations have important methodological implications for the assessment of grazing.

Keywords: microzooplankton, grazing, dilution experiments, phytoplankton

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