REPRODUCTION AND GROWTH OF CALANUS GLACIALIS: TIMING TO ICE ALGAL AND PHYTOPLANKTON BLOOMS

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We investigated life history traits of the Arctic key herbivore copepod *Calanus glacialis* in Rijpfjorden, Svalbard (80?N). We studied its development, vertical distribution, dry weight, lipid content, and egg production from March to October in 2007. The fjord was ice-covered from February to July, with maximum thickness in June. In March most of the females were found in the upper 100 m and a limited egg production was detected. Ice algae were present in March, but high densities occurred first in April and June. Copepods with green guts were found in April, two months prior to the phytoplankton bloom. Highest egg production was found in June when ice algae started to sink out, and phytoplankton growth was initiated. From July to October too few females were found to measure egg production. In September-October the population consisted mainly of copepodite stage V, suggesting a 1-yr life cycle. Those that had descended to depth in September were twice as lipid-rich as those in the upper 50 m. In October most of the population had descended to overwintering depths. By utilizing both ice algae and phytoplankton, *C. glacialis* extend its growth season substantially, which can explain its rapid development in this high-Arctic fjord.