

MICROZOOPLANKTON HERBIVORY IN THE VICINITY OF WESTERN BOUNDARY OF CANADA BASIN

Eun-Jin Yang, Ho-Kyung Ha, and Kyung-Ho Chung

Korea Polar Research Institute, Songdo Technopark, Incheon 406-840, Korea

Using the dilution technique, we measured phytoplankton growth and microzooplankton grazing rate in the vicinity of western boundary of Canada basin during July/August 2010. A variety of environmental condition and trophic condition were encountered, from heavy sea-ice cover to no sea-ice cover, and from low chlorophyll- a ($<0.1 \text{ ug L}^{-1}$) to diatom blooming ($> 3 \text{ ug L}^{-1}$). Phytoplankton growth rate varied from 0.13 to 1.81 d^{-1} , on average 0.72 d^{-1} . Microzooplankton grazing rate varied from 0.12 to 1.52 d^{-1} , on average 0.64 d^{-1} . Grazing rate was significantly correlated only to phytoplankton growth rate ($p < 0.001$), and not to initial chlorophyll-a concentration or other measured environmental factors. Microzooplankton community grazed from 19.1 to 181.4 % (average 92.1 %) of daily chlorophyll-a production and from 11.3 to 79.4 % (average 43.0 %) of initial standing stock. In this study site, microzooplankton grazing and phytoplankton growth were high compared to rates reported summer 2004 in western Arctic sea. Microzooplankton communities are clearly important in determining the fate of phytoplankton during the early summer in the study area.