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EFFECT OF ANTARCTIC COPEPOD FEEDING ON AN INDUCED PHYTOPLANKTON BLOOM DURING THE EUROPEAN IRON FERTILIZATION EXPERIMENT (EIFEX): *CALANUS SIMILLIMUS*, *RHINCALANUS GIGAS* AND *PLEUROMAMMA ROBUSTA*

S. Kruse, S. Jansen, S. Krägefsky, M. Teschke, U. Bathmann

Alfred Wegener Institute, Bremerhaven, Germany

Feeding behavior of the three Antarctic copepods *Calanus simillimus*, *Rhincalanus gigas* and *Pleuromamma robusta* and their response to an induced phytoplankton bloom were studied from samples collected during the European Iron Fertilization Experiment (EIFEX) in austral autumn 2004. The diet has been investigated by microscopical gut content analysis that does not, however, reveal soft-shell organisms like dinoflagellates and athecate ciliates. The number of food items ingested by *C. simillimus* and *R. gigas* increased with the developing bloom, whereas in *P. robusta* the particle abundance varied inside the fertilized patch. Outside the patch no significant differences in particle abundance for *C. simillimus* and *R. gigas* could be observed, however *P. robusta* showed lower values compared to the situation in the patch. Diatoms dominated the food composition in all copepod guts, with especially the pennate diatom *Fragilariopsis kerguelensis* being of great significance. The composition of the gut content was supplemented by tintinnids, which were continuously ingested by all three copepod species. Prior to the bloom and outside the fertilized patch, *C. simillimus* showed a preference for foraminifers, which were well represented in the biomass composition due to their high carbon values. *R. gigas* ingested some foraminifers as well, but showed also an additional uptake of acantharians during the course of the experiment. *P. robusta* contained the highest number of heterotrophic food items in the gut that included e.g. intact radiolarians. The ability to feed on a variety of different food items enabled these three calanoid copepods to respond with a change in feeding behavior to increasing food concentrations. The differences in their food selectivity allow a co-occurence of these copepod species in the Polar Frontal Zone of the Atlantic sector of the Southern Ocean.

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