410

THE INFLUENCE OF TROPHODYNAMICS AND METABOLIC PROCESSES ON THE LIPID BIOCHEMISTRY OF ANTARCTIC EUPHAUSIIDS

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Lipids serve a variety of vital functions in organisms. As the major energy reserve they play an important role in many aspects of krill live history. Our study aimed at elucidating the relative importance of various food sources on the seasonal accumulation and depletion of storage lipids for different stages of *Euphausia superba*, *E. crystallorophias* and *Thysanoessa macrura*. In December 2006 krill was sampled during a "Polarstern" expedition in the Lazarev Sea along four transects between 60° and 70°S and 3°E and 6°W. The field studies included the collection of various developmental and maturity stages in order to determine their lipid contents and lipid class compositions. These data will help to characterise the physiological condition of krill specimens shortly after the critical overwintering period and during the energy demanding reproductive season and to clarify the role of lipids in the life history of these species. Specific dietary fatty acids were used as trophic markers to identify dominant food sources of the different developmental stages. In addition, various feeding and starvation experiments were conducted to help interpret these field data and to reveal potential differences in metabolic pathways during lipogenesis and the utilisation of energy reserves.