



Diatom fatty acid biomarkers indicate recent growth rates in Antarctic krill

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ABSTRACT: We investigated the relationship between nutritional condition (levels of specific fatty acids) and growth increment (percentage growth per intermoult period, percentage IMP²¹) for Antarctic krill (*Euphausia superba*) collected from the vicinity of South Georgia in the austral summer 2002. There were correlations between percentage IMP²¹ and the concentration (gram : gram dry weight) of the diatom biomarker fatty acids, 16 : 4(n-1) and 20 : 5(n-3) in tissues of individual krill, suggesting that the abundance of diatoms in the environment of the krill in the intermoult period prior to moulting was a key determinant of change in body length, a proxy for growth. This substantiates the view that diatoms are crucial for supporting high growth rates of krill, either as a direct food source or, indirectly, by enhancing production of microzooplankton and mesozooplankton based food webs.

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