

Skoglund, E.G., Lydersen, C., Grahl-Nielsen, O., Haug, T. and Kovacs, K. M. 2009.
Fatty acid composition of the blubber and dermis of adult male Atlantic walrus (*Adelphius rosalia rosalia*) in Svalbard, and their potential prey. *Mar. Biol. Res.* In press.

ABSTRACT

Blubber biopsies were collected from 18 adult male walrus from Svalbard, Norway. The biopsies were taken vertically through the skin and the entire blubber layer down to, but not including, the muscle layer. Fatty acid (FA) compositions of inner blubber, outer blubber and dermis of the walrus and of potential prey organisms were determined. The three layers differed significantly from one another in FA composition. Generally, the inner blubber contained more long-chained monounsaturated, saturated and polyunsaturated FAs, while the outer blubber and dermis contained more short-chained monounsaturated FAs. This stratification is similar to what has been observed in other marine mammal species. However, differences between layers were less pronounced than in most other species possibly because the extremely thick overlying dermis of walrus provides an insulating shield, which affects the FA composition of the outer blubber. The FA composition of the potential prey organisms was different from that of the blubber of the walrus, though more similar to the inner blubber than to the outer blubber or dermis. FA composition in the inner blubber was not significantly correlated with age (assessed by tusk volume), while the FA composition of the outer blubber and dermis were significantly correlated with age.