

## Selenium, cadmium and lead content in reindeer meat and liver samples

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The element selenium was discovered by Berzelius in 1817 and the first organic compound containing selenium was prepared 30 years later. In 1957 selenium was indentified as the essential trace element. Selenium has been shown to be effective in prevention and treatment of a number of necrotizing diseases of domestic animals. Low tissue selenium values have been reported in connection with hepatic lesions, cardiac myopathy, skeletal muscle myopathy, and other lesions attributable to a selenium-vitamin E deficiency. Both selenium and vitamin E have antioxidant properties. The selenium content in Scandinavian soils and plants is usually very low and selenium deficiency in humans has been shown to be associated for example with cardiomyopathy and cancer. The low selenium content in Finnish foods and fodder plants has made it necessary to add selenium compounds to feeds. In the present study selenium, cadmium and lead content in meat and liver of reindeer were studied during autumn 1984 in Kaamanen field station. Altogether 31 semi-domesticated reindeer (24 calves, 6 adult females and 1 castrated male) were used in the study. The reindeer were freely-grazing during summer and autumn before sampling.

Selenium content in reindeer meat was very high, means 0.86 mg/kg dry weight (range 0.65 - 1.05 mg/kg) in calves, 1.02 mg/kg (range 0.83 - 1.29 mg/kg) in adult females and 0.96 mg/kg dry weight in a castrated male. The values were

higher than previously measured in reindeer and about 20 times higher than that measured in Finnish cow. Selenium content in reindeer liver samples was also very high, mean 3.14 mg/kg dry weight (range 1.88 - 6.31 mg/kg) for calves and 2.42 mg/kg dry weight (range 2.16 - 2.82 mg/kg) for females. Cadmium content was very low in meat of calves (mean <0.01 mg/kg dry weight). Higher values were measured in liver of calves (mean 0.63 mg/kg dry weight) and females (1.57 mg/kg). The lead content was low in meat of calves (mean <0.02 mg/kg dry weight) and adult reindeer (mean 0.02 mg/kg). Higher values were measured in liver samples of calves (mean 1.13 mg/kg dry weight) and females (mean 1.09 mg/kg). Cadmium and lead values were much lower than found previously in Finnish moose samples.