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Seasonal variation in thiamine (Vitamin B₁) content in zooplankton, phytoplankton and bacteria from the Baltic Sea.

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For several decades, top predators in the Baltic Sea have been suffering from a deficiency syndrome called M74, caused by low levels of vitamins (thiamine). However, the reason for these low levels remains unresolved. Alterations in community composition in the pelagic food web have been suggested to have an effect on the production and availability of vitamins in the Baltic Sea ecosystem. Hence, seasonal variation in production, content and transfer of thiamine between trophic levels was assessed in field samples of zooplankton, phytoplankton and bacteria collected from the Baltic Sea from November 2013 to December 2015. Our preliminary results indicate that there is a seasonal variation in absolute thiamine content in zooplankton as well as a species specific accumulation of the compound in zooplankton. Additionally, the chemical composition of the different forms of thiamine varies with season. Furthermore we hypothesize that there is a relationship between zooplankton and phytoplankton when considering thiamine content.

Keywords: Thiamine, Food web, Copepod, Deficiency syndrome

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