



3rd Science for the Environment Conference
Aarhus Denmark 1-2 October 2015

DO FISH NEED HAIR CONDITIONER? RESULTS FROM A NORDIC SCREENING PROJECT

Lennart Kaj, Eva Brorström-Lundén

IVL Swedish Environmental Research Institute, Sweden

ABSTRACT

Quaternary ammonium compounds, QACs, are widely used as ingredients in household products including fabric softeners, detergents, disinfectants, preservatives, and personal care products. In a recent study effluent and sludge from waste water treatment plants (WWTPs) in seven Nordic countries together with sediment and fish from their receiving waters were analysed 17 QACs. The compounds belonged to three groups: alkyltrimethyl ammonium (ATAC), benzalkonium (BAC) and dialkyl dimethyl ammonium (DDAC). Effluent concentrations varied to a large extent, but effluents from several WWTPs showed, even after ten times dilution, concentrations of ATACs and/or BACs that could pose a risk to the aquatic environment. QACs sorb strongly onto suspended particulates. All compounds were found in all sludges. Detection frequencies in sediments were 65-100%. Behentrimonium (consisting of ATAC-C20 and ATAC-C22), recently described as a new emerging contaminant, was found in a majority of the samples, also in fish muscle and liver. The project was financed and supported by the Nordic Council of Ministers through the Nordic Chemicals Group and the Aquatic Ecosystems Group as well as the participating national institutions that performed sampling.

Reference:

Lennart Kaj, Petra Wallberg, Eva Brorström-Lundén 2014. Quaternary ammonium compounds : Analyses in a Nordic cooperation on screening TemaNord, ISSN 0908-6692 ; 2014:556 [dx.doi.org/10.6027/TN2014-556](https://doi.org/10.6027/TN2014-556)



AARHUS
UNIVERSITY

DCE - DANISH CENTRE FOR ENVIRONMENT AND ENERGY