**Temporal trends of PFAAs contamination in sewage sludge**

**(2008 – 2013)**

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Sewage sludge can be a source of perfluoralky acids (PFAAs) to environment. Therefor in Bavaria sewage sludge from wastewater treatment plants (WWTP) with more than 1000 population equivalents has to be analyzed for PFAAs, if a recovery on agricultural soils is planned. Between 2008 and 2013 5291 sludge samples from 1362 different WWTP were analysed for 11 PFAAs compounds. During this period the PFAAs concentration in the sludge samples of 147 WWTP exceeded the precautionary limit of 125 µg kg-1 dm at least once. In 2008 5 % of the investigated WWTP exceeded the precautionary limit and in 2013 it was only 0.8 %. The percentage of uncontaminated WWTP increased from 35 % in 2008 to 65 % in 2013. PFOS was the predominant compound, found in 41 % of all sludge samples in concentrations higher than limit of detection (LOD). In addition PFDA was detected in 19 %, PFOA in 7 % and PFDoA in 5 % of all sludge samples. The maximum concentrations were 7600 µg kg-1 dm for PFOS, 597 µg kg-1 dm for PFDA, 1073 µg kg-1 dm for PFOA and 325 µg kg-1 dm for PFDoA. Very high PFAAs concentrations in sewage sludge were generally caused by firefighting foam containing PFAAs or emissions from metal plating, textile, leather or paper industries. Overall, the results of the five-year-period show that PFAAs contamination in sewage sludge clearly decreased.