**‘Forever chemicals’ in a changing environment: Temperature-dependent accumulation and effects of per- and polyfluoroalkyl substances (PFAS) to plants**

<https://msevp.uantwerpen.be/Mediasite/Play/a41b8ead0bf8492793107ee62f71c3781d>

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Per- and polyfluoroalkyl substances (PFAS) are bioaccumulative and persistent chemicals that are globally distributed in the environment and biota, including humans, where they cause toxic effects. Due to numerous regulatory measures, some PFAS have been banned or phased-out, resulting in a replacement of these chemicals with shorter-chained PFAS, as well as other emerging alternatives (e.g. HFPO-DA; GenX). Especially these shorter-chained PFAS are considered to be less bioaccumulative as they are water soluble. However, this gives implications for plants, which take up nutrients through water and are hence exposed to these chemicals. The extent to which different plant species are exposed to PFAS is still unclear, as most studies have been conducted on cereals and differences in uptake among species are expected.

Changes in temperature, for example due to climate change, may impact the physicochemical properties of chemicals, as well as the physiology of organisms, consequently resulting in changes in contaminant uptake by biota. The role of ambient temperature, as well as temperature changes predicted by climate change scenario’s on the uptake of PFAS by plants is still unknown.

In this project, exposure experiments will be conducted to examine the accumulation and effects of PFAS on plants, grown in different temperature conditions. The focus lies on plants that are cultivated in private gardens for human consumption, in order to also investigate potential human exposure through consumption. The accumulation and effects of PFAS on plants will be examined in different plant compartments, and multiple endpoints (e.g. growth, chlorophyll fluorescence, oxidative stress, and plant hormones) will be related to PFAS accumulation.