



## **Distribution of mercury in the small forested catchment – locality Lesní potok, Central Bohemia**

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Mercury belongs into group of heavy metals, which are known to be toxic in even small concentrations. Current level and purposes of Hg usage caused increasing contamination of the environment. There is a small catchment Lesní potok in the area of National Nature Reserve Voděrády's beechwood in central Bohemia about 30 km from Prague. The research was made in two steps. First one was an experimental methodology setting. It included testing of sampling and measuring methods. The second part of the research was based on laboratory results and included field sampling and analysis. Water, soil, stream sediments, foliage and needles were sampled. Water from the Lesní potok stream was sampled into glass and Teflon bottles. All samples of water were measured using cold vapor atomic absorption spectrometry (CVAAS). Samples of water in Teflon bottles were also measured using cold vapor atomic fluorescence spectrometry (CVAFS). The concentrations of Hg in samples of water from the Lesní potok stream varied according to used analytical method. The CVAFS method showed variations of concentration between 6 and 9 ng.L<sup>-1</sup>. The CVAAS method Hg provided concentration from 3 to 21 ng.L<sup>-1</sup> in the same samples. The Hg concentrations in samples in the glass bottles ranged between 6 and 23 ng.L<sup>-1</sup>. An average concentration of mercury in sediments of Lesní potok stream was 80 μg.kg<sup>-1</sup>. Average Hg concentration in soils at the site was 67 μg.kg<sup>-1</sup>. The concentration of mercury in soils decreases with depth because of its positive correlation with humus content. The leaves were contaminated more than needles. Average concentration of mercury was 45 μg.kg<sup>-1</sup> in leaves and 31 μg.kg<sup>-1</sup> in needles. Maximum of the mercury (71 μg.kg<sup>-1</sup>) was found in oak leaves, minimum (26 μg.kg<sup>-1</sup>) in pine needles. Mercury is strongly bound to various organic materials. That is why the highest concentrations of mercury were found in stream sediments, humus-rich soil layers, foliage and needles.