**Determination of the depth distribution of Cs-137 in forest soil profile in Austria**

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The Cs-137 concentration in Austrian soil results from its deposition during the Chernobyl accident in 1986 and to a minor part from its deposition during the nuclear weapon tests between 50’s and 60’s. Since this time the Cs-137 migrated into deeper soil depths. The Cs-137 concentration in the first 30 cm of Austrian soil was determined in the past in various projects. Nevertheless, just a few soils from forest environment have been analysed.

In 2022 a project started, in which soil layers of the forest environment down to 30 cm depth were analysed. It was financed by the federal ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management. Therefore, sampling sites were chosen regarding the interactive map of the soil contamination with Cs-137 [1] of Austria. This map is based on several hundred measurements taken after 1986, which were compiled. In the regions where no measurements were conducted the contamination was calculated by interpolation.

During the Chernobyl accident the contamination depended on the amount of rain at the specific location. Hence, some parts of Austria like Upper Austria still show higher contamination than other parts. The chosen sampling sites are located in the higher contaminated regions of Austria. In some cases, a high variability of the Cs-137 content has been observed in the first soil layer, even though the sampling was performed in close locations.

The results of the soil profiles show the migration of Cs-137 in the soil. Most of the Cs-137 is still located in the first 10 cm in forest soils. The results are presented in Bq/kgTr and Bq/cm². The values can be used to check if the data provided by the interactive map of soil contamination still fits reality. Additionally, they can be used to correct the data provided if necessary. This can happen when it was generated by an interpolation step between the measurement locations. Besides, this data can also be used to calculate transfer factors to plants, especially mushrooms, which are collected near these sampling sites.

[1] https://secure.umweltbundesamt.at/caesium/