

ABSTRACT

"RADIOCAESIUM CONTAMINATION OF EDIBLE WILD FUNGI AFTER THE CHERNOBYL ACCIDENT"

Seventeen years have passed since the Chernobyl Catastrophe and we wanted to find out in how far wild edible fungi are still radioactively contaminated.

Therefore we have analysed the ¹³⁷Caesium content in fungi from South Germany (most of them from Baden-Wurttemberg and Bavaria) and in soil from several locations - including samples from Belarus. We also have investigated different sorts of food from that region which had been strongly contaminated after the accident.

For measuring the radiocaesium contamination we have used a scintillation counter connected to a laptop which forms a multi-channel analyzer. The counter and the container with the samples are surrounded by a lead shield that minimizes the influence of external radiation.

In order to evaluate the complete activity of our samples exactly, the methods suggested by the production firm are not sufficient, because they are only valid for a completely filled container. So we have developed a new method of calibration by the use of a Monte Carlo simulation that can be used for different filling heights.

Consequently, we have still found two species of fungi (*Xerocomus badius* and *Cantharellus tubaeformis*) that were highly contaminated. The highest contamination levels have been found in samples from the Bavarian Forest and in samples from a region south-west of Munich.

Apart from that, in most of the other collected fungi from Germany and also in the food-samples of Belarus we have not been able to prove the contamination with ¹³⁷Cs.

We have found several biological reasons to explain this result and we have tried to estimate the potential effects on human health.