

## Distribution of radiocesium in a small forest at Namie town in Fukushima Prefecture

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Fresh leaf/needle, litter, surface soil, stream water and bottom sand were monthly collected in a deciduous broadleaf forest and an evergreen needleleaf forest in Fukushima Prefecture during non-snowfall period. The concentration of radiocesium (<sup>134</sup>Cs and <sup>137</sup>Cs) was measured by commercially available NaI(Tl) scintillation detector.

The air dose rate at a broadleaf forest (5.64  $\mu$ Sv/h) was higher than that at a needleleaf forest (4.11  $\mu$ Sv/h) in November 2012. The average concentration of radiocesium in each sample was also higher at broadleaf forests than at needleleaf forests. The order of the concentration of radiocesium was litter > surface soil > fresh leaf/needle > bottom sand at both sites, indicating that radiocesium was accumulated in litter. Radiocesium was not detected in precipitation, throughfall, and stream water.

Surface soil samples at each sampling point were taken using a scraper plate in April and December 2013. Samples were taken with 0.5 cm increments for the depth of 0-5 cm and 1.0 cm increments for the depth of 5-10 cm. The maximum concentration was found at the surface at the broadleaf forest in April and December 2013. The maximum concentration was also found at the surface at the needleleaf forest in April 2013 but at 1-1.5 cm in December 2013, indicating that the radiocesium in surface soil penetrated deeply at the needleleaf forest. These differences were likely caused by the soil type and the composition of tree species at the sampling points.

A photostimulable phosphor (PSP) image plate was used to record a two-dimensional image of radioactivity distribution on the leaf/needle and root of the broadleaf tree samples. We used the CR<sup>x</sup>25P (General Electric Company). The image of the needleleaf sample of Japanese cedar showed some high intensity spots on the needles, indicating the presence of radioactive dusts attached onto the plant's surface. On the other hand, the image of the broadleaf showed uniform distribution, suggesting that contamination with radiocesium occurred internally.

In the presentation, we will also report about the runoff processes of the radiocesium with the stream bottom sand.