

Atmospheric deposition of radiocesium in forest sites on the periphery of the Kanto plain

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TEPCO's Fukushima Daiichi Nuclear Power Plant (FDNPP) accident has resulted in emission of huge amounts of radioactive substances to the atmosphere. The radionuclides were transferred and influx as wet and dry depositions into the surrounding area. The objective of this study was to determine the atmospheric radiocesium (¹³⁴Cs, ¹³⁷Cs) depositions at forest sites on the periphery of the Kanto plain after the accident.

Bulk precipitation and throughfall samples were collected at 15 forest sites in Ibaraki, Gunma, Tokyo, Saitama, and Niigata prefecture. The sampling points were located between 120 to 250 km distances from FDNPP. Radiocesium (¹³⁴Cs, ¹³⁷Cs) of the dissolved fraction were measured by the gamma-ray spectroscopy with Ge detector. From all the samples collected during the period from 15 to 23 March 2011, radiocesium was detected. The total amounts of ¹³⁴Cs and ¹³⁷Cs depositions including this period by bulk precipitation ranged from 4,000 to 40,000 Bq m⁻², and those of throughfall ranged from 1,000 to 25,000 Bq m⁻².