

Does radiocesium leak out from the contaminated soil buried in paddy field? -Three year' s monitoring report of soil radiation doze in a paddy in litate Village, Fukushima

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Radiocesium released from Fukushima Daiichi nuclear power plant in March 2011 was accumulated in paddy fields within 5 cm of the surface soil layer. In order to remove this radiocesium, Japanese government carried out decontamination work to strip off surface layer soil. For this reason, the paddy fields of litate village of Fukushima Prefecture are filled with a lot of flexible container bags packed with contaminated soil. On the other hand, I have focused on the nature of radiocesium immobilization on clay particles, and developed a farmland decontamination method that farmers themselves can easily do in cooperation with a NPO and farmers. In December 2012, we conducted an in-situ burial experiment of contaminated soil at a paddy field in Sasu district in litate Village, Fukushima Prefecture. We stripped 5 cm of contaminated topsoil of paddy field (10 m ×30 m), and dug a trench (2 m wide, 30 m long, 1 m deep) in the center of the paddy field. Then we buried the contaminated soil at the depth of 50-80 cm in the trench, and covered the non-contaminated soil with a thickness of 50 cm onto the contaminated soil. In this paddy field, we plant rice every year from 2013, and confirm that safe rice can be produced by this decontamination method. In addition, in order to prove that radiocesium does not leak from this paddy field, we made a well of PVC pipe (inner diameter 10 cm, length 200 cm) with a bottom in a paddy field in May 2014, and we are measuring the soil radiation dose in the well every half year from March 2015. As a result, it has been observed that the soil radiation dose has a Gaussian distribution with a peak around a depth of 70 cm. The depth with its peak is almost same for the last 3 years. This result indicates that radiocesium does not migrate even if the paddy water penetrates into the ground.

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