
[EJ] Evening Poster | H (Human Geosciences) | H-CG Complex & General

[H-CG26]What scientists should do for reconstruction after Fukushima Daiichi Nuclear Power Plant Accident

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Seven years have passed since the Fukushima Dai-ichi Nuclear Power Plant accident on March 2011. Some local villagers have started returning their own home. Most of suspension on shipment of agricultural products from Fukushima has been released. Scientists temporarily concentrated on Fukushima-related issues are returning to their own research topics although we still need to solve various problems from application levels to pure scientific topics. For example, it is critical for farmers in Fukushima how to recover productivity of decontaminated agricultural lands. Radiocesium (Cs)-bearing microparticles having relatively high specific radioactivity (Bq/kg) had recently been discovered; however, the fate of the Cs-bearing microparticles, e.g., inert or not, is not well understood to date. It is about time for rural planning scientists to propose their own opinions rather than reporting case studies. We had preliminary discussion at ASA, CSSA and SSSA International Annual Meeting in Tampa, USA 2013 by driving a session of "Battles of Soil Scientists in Fukushima, Japan". In addition, we had "Battles of soil scientists for recapturing Fukushima land from Nuclear Power Plant accident. What can we do then?" last year. In this session, we are looking forward to presentations from soil and water sciences to social and agronomic sciences related to interaction of human and nature under the condition of post-nuclear power plant accident.

[HCG26-P08]Radioactive cesium distribution around paddy field in Iitate village, Fukushima

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Radioactive Cesium fell down to cultivation area around Fukushima prefecture by the accident of Fukushima Daiichi Nuclear Power Plant on 2011. We conducted various methods to clean up soil for agriculture. One of the major method is to strip topsoil up to 5cm. This decontamination method has been carried out inside highly polluted cultivation field by radioactive cesium and not on the levee around the field still now. We investigate the contamination variation around cultivation area by using the walking radiation measurement system KURAMA(Kyoto University RAdiation MApping system) and by direct measuring of radioactive cesium concentration. We also checked the radioactive cesium in irrigation water for checking the weather dependency.

We made map of radioactive cesium concentration on paddy fields (500m x 200m) by KURAMA. In the map, we can recognize there are still high level contamination on levees and in fields without stripping topsoil.

We checked the radioactive cesium concentration the surface of levee (condition-A) and the bottom of the levee at river side (condition-B) (about 1m below the surface). We measure four soil samples every 5cm (0, 5, 10, 15cm). As a result, high concentration of radioactive cesium has been measured in

condition-B. We found radioactive cesium transfer from levee to river side. And almost all of high concentration is measured up to 5cm surface.

We also checked the concentration in irrigation water on October 23, 2017, just after typhoon passed. There is no dependency of radioactive cesium concentration by per volume (L) but we found the dependency between downstream and upstream in irrigation by per weight (kg). This dependency difference means that particulate of radioactive cesium may transfer by irrigation water through paddy field.