

Radioactive cesium distribution around paddy field in litate village, Fukushima

*Nihei Naoto¹, Yoshikatsu Ueda²

1. Graduate School of Agricultural and Life Sciences, The University of Tokyo, 2. Research Institute for Sustainable Humanosphere, Kyoto University

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.

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