Vol.3, No.3, pp.145 - 152, 2015 / J. Soc. Remed. Radioact. Contam. Environ.

Originals

# Effects of Soil Stripping and Dressing for Decontamination of Radioactive Materials on Soil Fertility of Agricultural Land

Namiko YOSHINO[1*], Hiroyuki KOBAYASHI[2],
Yoshihiko TAKAHASHI[1], and Kunihito SAITOU[3]

[1]Tohoku Agricultural Research Center, National Agriculture and Food Research Organization
(50 Harajukuminami, Arai, Fukushima 960-2156, Japan)
[2]Agricultural Research Center, National Agriculture and Food Research Organization
(3-1-1 Kannondai, Tsukuba, Ibaraki 305-0856, Japan)
[3]Naigai Engineering Co.,Ltd. (1-28-12 Higashiueno, Taito, Tokyo 110-0015, Japan)

## Summary

Farms that were highly contaminated with radioactive materials following the Tokyo Electric Power Company (TEPCO) Fukushima Daiichi nuclear power plant accident were decontaminated by removing topsoil and subsequently dressing with fresh soil. We investigated the chemical properties of soils following such decontamination on farms in Iitate village, Fukushima. The nitrogen content of dressed soil was considerably lower than that of the subsoil that was not stripped for decontamination, as a result of which the amount of dressed soil greatly affected the soil fertility of decontaminated farms. The potassium (K) content of soil differs markedly depending on the type of soil dressing material used; accordingly, the type of soil dressing material affected the soil K content on decontaminated farms. On most of the decontaminated farms where sandy soils were used as the soil dressing material, soil exchangeable K contents were less than 25 mg $K_2O$/100 g, which is the criterion value for inhibiting cesium absorption in rice and soybean cultivation. However, even in the soil dressing material from agricultural land, soil K content after soil dressing was generally lower than that before soil dressing. During fallow management and at the restart of cultivation on decontaminated farms, it is important to know in advance the chemical properties of soil and take the necessary measures based on this information.

**Key Words:** Farm decontamination, Soil dressing, Soil fertility, Potassium