

Original

Validation Study on the Measurement of Radio-Cesium Activity in Enclosed Flexible Bag

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Summary

This study discusses validity of estimated activity of the removed soil in flexible container bags. As for the estimation method using the equation defined by Ministry of Health, Labor and Welfare, it is confirmed that the equation is not necessarily appropriate for the use of accurate estimation of the soil activity, since the conversion factor, which converts surface dose rate [$\mu\text{Sv/h}$] to activity [Bq/kg], is considered to set by using the soil density that is higher than the actual one. Then, in order to study on the validity of estimated activity of heterogeneously-contaminated soil in flexible container bags, surface dose rates of both several simulated sample bags and randomly-selected bags arose from decontamination work, were measured. Then average activity of each bag was estimated by the conversion equation defined by the actual measurement data as well as by the equation by the Ministry. The estimated activity of each bag by the Ministry was always higher than analysis value by Germanium (Ge) detector, and the estimated activity by the conversion equation based on the measurement was nearly equal to the Ge analysis value.

Key Words: Radioactive contamination, Activity estimation, Contaminated soil, Radioactive cesium,
Flexible container bag
