

Measures for Radioactive Materials in Foods

Procedures for Inspections of Radioactive Materials in Foods

Inspections are to be conducted combining a rigorous inspection (i) and an efficient screening test (ii).

(i) Radionuclide analysis using germanium semiconductor detectors

(ii) • Screening by measurement of radioactive cesium using NaI scintillation spectrometers
 ← Introduced to inspect a larger number of samples in a short time

• Screening by measurement of radioactive cesium using non-destructive inspection techniques


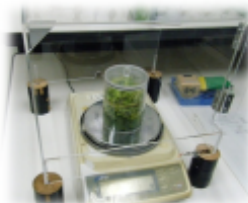

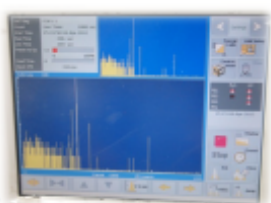
< Procedures >

Shredding

Weighing


Measurement

Analysis

* Non-destructive inspection techniques enable measurement without the process of shredding

Prepared based on the "Measures for Radionuclides in Foods and the Current Status" (updated in November 2021) by the Pharmaceutical Safety and Environmental Health Bureau, Ministry of Health, Labour and Welfare



This figure shows procedures for inspections of radionuclides in foods.

There are two ways to inspect foods, i.e., a rigorous inspection and an efficient screening test.

As a rigorous inspection, radionuclide analysis is conducted using a germanium semiconductor detector. After shredding a food sample, its weight is measured accurately. Then, the shredded sample is put in a prescribed container. The container is set in a detector, which is structured like a box covered with a thick layer of lead, and the amount of radioactive cesium is measured. Lastly, measurement results are analyzed.

For an efficient screening test, a NaI (TI) scintillation spectrometer is used. Screening using a NaI scintillation spectrometer is inferior to radionuclide analysis using a germanium semiconductor detector in terms of measurement accuracy, but can shorten the time required for inspections and is less expensive. Screening using non-destructive inspection techniques does not require shredding and mixing of samples. If the results of these screening tests suggests the existence of radioactive cesium exceeding the standard limits, an inspection is conducted again using a germanium semiconductor detector.

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