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Introduction

On-site inspections are an integral part of the characterisation and verification of potential nuclear testing events. As fresh radioactive fallouts are concentrated in the first millimetres of the soil, any anomaly of the topsoil depth distribution and content of radionuclides can provide information about potential past events which could have been unnoticed.

Created by the SWMCN Laboratory of the Joint FAO/IAEA Division, the Fine Increment Soil Collector (FISC) was originally developed to facilitate the precise determination of soil depth distribution of anthropogenic and naturally occurring radionuclides for use in soil degradation investigations. The FISC, through its characteristics and *modus operandi,* facilitates standardized on-site sampling and collection of high resolution (millimetres precision) topsoil samples.



Fine Increment Soil Collector (FISC): A standardized and accurate sampling device for on-site inspection and verification purposes after a nuclear incident

Modus operandi



Insert FISC soil extraction cylinder into ground. Teflon cover protects from soil compaction







Mount collected sample and cylinder onto tripod and remove Teflon cover. Adjust FISC to desired soil collection depth



Gather soil with a clean brush and collect materials in sample bags



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Extract FISC soil cylinder from ground using a flat tool, such as a shovel

Using a levelling tool, scrape off top of soil to collector rim on FISC

radionuclide determination

Advantages and benefits

- or later at the laboratory;

- resolution;

The Teflon covers (1) facilitates sample transportation and (2) ensures that the soil on the surface is not compacted during the extraction process, leading to more accurate and finer resolution readings during measurement.



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Incremental sample collection can be performed on-site

Tool is adjustable up to mm resolution;

Simple to set-up, one-man operation possible ;

Allows precise evaluation of radioactivity at mm vertical

Sample size can be tailored to analytical requirements.