

DECONTAMINATION METHOD AGAINST ¹³⁷CS IN ORCHARD SOIL BY COMBINING UNDERGROWTH AND LAYING MATERIALS

Wednesday, 25 May 2016 09:00 (9 hours)

Effects of decontamination method against ¹³⁷Cs in orchard soil by combining undergrowth and laying materials covering over soil surface were evaluated. Sheets containing zeolite or Prussian blue, root wrapping nets, revegetation nets, undergrowth, such as shepherd's-purse, deadnettle, bittercress and others, and grosses for Kentucky Bull Glass and white Clover, which were sowed seeds mixed 40 g/m² and 30 g/m² on the sheets on May in 2012 or March in 2014, were selected for investigation. Soil surface was covered with laying materials which is 60 or 190 cm in width. After nourishing the undergrowth in natural or grasses which were sowed seeds, laying materials were wound up with foliage and root of undergrowth or grass and rhizosphere soil for stripping the topsoil. Removal rate of ¹³⁷Cs(%, RR), which represented the following formula: $RR=100a/(a+A)$, a is ¹³⁷Cs content (kBq/m²) in removed soil, A is ¹³⁷Cs content in 3 cm soil layer under the topsoil stripped, was applied for evaluating the effect to decontamination of ¹³⁷Cs in soil. Revegetation nets with gross showed significantly higher RR, resulting in 16.7% by sowing on May and 35.7 to 53.3% (removed 45.9 to 60.6% ¹³⁷Cs compared with control) by sowing on March. RR of Kentucky Bull Glass with root mat developed sufficiently attained to 94.1%, indicating that decontaminating effect was due to development of the root mat layer. On the other hand, increase of RR was expected by increasing density of mesh of revegetation nets. A proportional relation expressed $y=6.07x$ in dry weight between removal weight of soil (x) and RR (y) was recognized significantly.

Country or International Organization

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Session Classification: Session 4B - Poster

Track Classification: Technical and Technological Aspects of Implementing Environmental Remediation Programmes