Title	PardNor - PARameters for ingestion Dose models for NORdic areas - Status report for the NKS-B activity 2010
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Abstract

The ECOSYS foodchain model is built into the European standard decision support systems ARGOS and RODOS, which are integrated in the preparedness for radiological events in the Nordic countries. However, a review has revealed that a number of parameters in ECOSYS do not reflect the current state-of-the-art knowledge, and do not adequately represent Nordic conditions. Improved and country/region specific data is required for ECOSYS to give trustworthy results. It is the aim of the PardNor activity to collect new data, and thus enable reliable use of ECOSYS for scenarios involving contamination of Nordic food production areas. In the reported work period of the PardNor activity, the parameters governing the contaminant deposition processes were revised, and an important point here is that contaminant particle sizes were taken into account, which has so far not been the case in ECOSYS. Both dry and wet deposition processes were addressed. New datasets were derived for dry deposition, whereas for wet deposition (washout, rainout, snow scavenging), which can not be addressed directly in ECOSYS, but must be dealt with elsewhere in the ARGOS and RODOS decision support systems, a new methodology was suggested on the basis of available measurement data. Also parameters governing the natural weathering processes of contaminants on crops and bare soil were revised, and it was demonstrated that precipitation has a strong influence on the weathering half-life, which should be included in ECOSYS. Both for deposition and weathering parameters, a special effort was made to retrieve measurement data of Nordic origin. A series of calculations were made with the ECOSYS model to show the effect of introducing new and improved parameter values for dry deposition and weathering processes. The parameter revision was found to have great effect on the ECOSYS estimates of food contamination levels for a 'Chernobyl-like' NPP accident scenario, and the effect could well be even greater for other conceivable types of release scenarios. Finally, the dependence of measured global fallout contamination levels on precipitation rates was highlighted in a separate section.

Key words Foodchain modelling, ingestion dose, ECOSYS, transfer factors, radioactive contamination