

Title	PardNor - PARAmeters for ingestion Dose models for NORdic areas - Status report for the NKS-B activity 2009
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Abstract	<p>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, examinations have been made of the availability in each of the Nordic countries of soil characterisation data that could be used as a basis for a refined and location-specific approach for estimation of soil-to-plant transfer of contaminants. Large national gridded soil type databases were found to be available for most of the Nordic countries. In addition, for many of these countries, also a number of more detailed soil parameter values, such as local concentrations of various exchangeable ions, cation exchange capacity and soil pH are available on national grids. The feasibility of implementing each of two detailed crop uptake models in ECOSYS - The CoupModel and the 'Absalom' model - was investigated. Both models were found to have serious constraints in this context, and it was therefore recommended to apply a simpler soil classification. To this end, a review was made of state-of-the-art transfer factor data for different soil types, and for the Faeroe Islands, where gridded information is not available, a different approach was described. A preliminary study was also included, on using the Radiocaesium Interception Potential (RIP) as a transfer parameter, utilising the very low RIP values caused by the geological conditions in Iceland. Parameters describing the processes of incorporation and excretion by farm animals of ingested contaminants were also examined, and new datasets for transfer parameters and biological half-lives were derived.</p>
Key words	Foodchain modelling, ingestion dose, ECOSYS, transfer factors, radioactive contamination