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Application of the Selected Countermeasures for Animal Products to a Dynamic Food Chain Model in a Nuclear Emergency

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Abstract

The methodology for the application of the principles of radiation protection on the selected countermeasures in linking with a dynamic food chain model DYNACON was studied using the cost and benefit analysis and its application results were analyzed in terms of net benefit. The considerations focus on the simple and easy countermeasures to carry out in the first harvest after the deposition for animal products, such as the ban of food consumption and the substitution of clean fodder. The net benefit of the selected countermeasures depended on a variety of factors such as foodstuffs, radionuclides, starting time and performing duration of countermeasures. The methodology used in this study may serve as a basis for the planning and preparedness of long-term countermeasures as well as the rapid decision of countermeasures against the contamination of agricultural ecosystems in a nuclear emergency.