

^{137}Cs Accumulation by Edible Xylotrophic Mushrooms That Are Promising Producers of Medicinal and Biological Active Substances

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Some higher basidial mushrooms are currently regarded not only as a good source of proteins but also as an ideal starting material for medicine production as well. At the same time the fact that fungi are enhanced accumulators of radionuclides capable of finding their way into medicines should be taken into account.

This article provides data on ^{137}Cs accumulation by fruiting bodies of *Pleurotus ostreatus* (Jacq.: Fr.) Kumm. and *Lentinus edodes* (Berk.) Sing. cultivated in forest stands under artificial microclimatic conditions. The results obtained show that ^{137}Cs accumulation in carpophores of cultivated edible xylotrophic mushrooms is dependent on the radionuclide content in substrata, substratum composition, mushroom species, and strains. By the extent of the substrate-to-fungi uptake of ^{137}Cs , the substrata used may be arranged in the following order: wood > sawdust substrata > straw substrata.

It is suggested that methods for lessening the input of radionuclides into mushrooms should be divided into practical and technological. Among practical methods are the selection of substrata in nonradioactive-contaminated regions; the execution of close radiometric controls over starting substrata, water, air, and terminal products (fruiting bodies); and the strict observance of rules of the mushroom cultivation procedure that precludes the ingress of contamination into the technological chain. Among technological methods is the use of strains exhibiting minor ^{137}Cs accumulation factor values, the maintenance of specific parameters of substrata (chemical composition, physical state, etc.), and the creation of cultivation conditions that minimize adverse effects and the devising of special-purpose techniques for treating the starting material in order to decrease the content of deleterious constituents.