

RADIONUCLIDES OF FOODS IN JAPAN AND UPTAKE OF RADIO/STABLE ELEMENTS BY TERRESTRIAL FOOD, MICROORGANISM

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According to our recent investigation from 2000 to 2003, radiocesium concentrations of foods in Japan imported from various foreign countries were low levels (<1 Bq/kg) the same as those of Japanese food products, yet only several saprophytic mushrooms showed higher ^{137}Cs concentrations. And also, we obtained the data that wild mushrooms collected from four points of Japanese forests in 2002 had been still contaminated by ^{137}Cs (<0.47 - 958 Bq/kg). The pH values of these soils were 4.2 – 6.5. Since the fact of these results and the previous reports, it is important to continue clarifying the characteristic and the speciation of radio/stable cesium in mushrooms. We assumed that the transfer of ^{137}Cs to mushrooms is both a direct path way from soil and an indirect path way from the cells of soil microorganisms. We performed the culture experiments of the saprophytic edible mushroom (*Pleurotus ostreatus*) mycelia and one of the representative soil microorganisms isolated from wild mushroom substrata, using several stable elements. On the isolation of soil microorganisms from mushroom substrata, the appearance frequencies of planktonic bacteria and filamentous actinomycetes were affected by pH of isolation medium. Cs tolerance of the planktonic bacteria and the filamentous actinomycetes showed considerable difference; as far as tested 13 soil samples, planktonic bacteria being able to grow in the presence of 50mM CsCl were present in all the samples at a higher density but no filamentous actinomycetes could grow in the presence of 50mM. Accumulation of Cs in filamentous actinomycetes (*Streptomyces* sp. K202) were two to eight times higher than those in bacteria when they were incubated in the presence of 5 mM CsCl.