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P023 ARSENIC AND CADMIUM CONTENTS IN EDIBLE MUSHROOMS

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Accumulation of hazard substances by mushroom has been known for a few decades and many papers describing toxic element contents in these fruit bodies have been published. The large accumulation of toxic elements like arsenic, lead, cadmium and mercury in some edible mushrooms is of great interest when considering human health. In this paper arsenic and cadmium contents in 20 samples of three species of edible mushrooms (*Agaricus bisporus, Pleurotus ostreatus, Lentinula edodes*) consumed by Brazilian population were determined by Instrumental Neutron Activation Analysis (INAA) and Graphite Furnace Atomic Absorption Spectrometry (GFAAS), respectively. For determination of As, about 200 mg of samples were irradiated for 8 hours under a thermal neutron flux of 10^{12} cm^{-2} s^{-1} in the IEA-R1 research reactor at IPEN/CNEN-SP. The precision and accuracy study was carried out by Mixed Polish Herbs (INCT-MPH-2) and Tea Leaves (INCT-TL-1) reference materials analysis. For Cd determination by GFAAS, the samples were digested in HNO_3 and H_2O_2 mixture in a PTF bomb. Arsenic concentrations varied from 10 ng g^{-1} to 394 ng g^{-1} and Cd varied from 9 to 1314 ng g^{-1} dry matter in the analyzed samples. The arsenic and cadmium concentrations differ widely among the mushroom species. For some edible mushroom species, the results are relatively higher than other foods, indicating that mushrooms can accumulate toxic elements. However, these levels are not yet health harmful as mushroom consumption is still low in Brazil.

P024 CHEMICAL COMPOSITION OF TOMATO SEEDS AFFECTED BY CONVENTIONAL AND ORGANIC PRODUCTION SYSTEMS

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The tomato is amongst the most consumed vegetables in the world, not only due to its culinary versatility, but also for its high nutritional value, being a source of vitamin A and C besides mineral salts like potassium and magnesium. In South America, Brazil is the major producer of tomato for industrial processing. The conventional tomato cropping system demands intensive utilization of pesticides, resulting in highly potential damages to the environment and to the human health. Because tomato is part of the basic diet of the population, consumers have shown a great interest regarding the product origin and safety for consumption. The organic tomato production has been a promising alternative for the consumer, offering a safer food in relation to environmental, social and human health aspects. Thereby this study intended to assess the elemental chemical composition of tomato seeds from the hybrid variety AP 533 for industrial processing produced in both conventional and organic systems. The tomato samples were obtained from farms located in Borborema and Urupuês cities, São Paulo state, Brazil. The seeds were removed, freeze-dried, milled and submitted to instrumental neutron activation analysis (INAA) for the determination of the chemical elements. The results showed significant differences ($p < 0.05$) in the concentrations of Br, Cs, Fe, K, Na, Rb, Eu, Mo and Sm for both systems, suggesting strong influence of the crop management adopted in the tomato production systems.

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