THE EFFECT OF METALLIC CONTENT OF SOIL ON THE ABSORPTION AND ACCUMULATION FOR SOME SPECIES OF FUNGI USED IN SOIL'S BIOREMEDIATION

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Abstract
The remediation of heavy metals polluted soil using biosystems involves the use of plants and fungi species for the extraction of metals from soil. To streamline the process of bioremediation of soil polluted with heavy metals using higher fungi, those species should be chosen with a high capacity to absorb metals and environmental factors can be controlled so that the accumulation of these elements to be favored. Heavy metal absorption by higher fungi is influenced primarily by the species, but also by soil pH and concentration of other metals in the soil. The interaction of chemical elements can be synergistic and / or antagonistic, and the reactions that lead to the creation of a chemical imbalance are a chemical stress for the fungi. The main correlations were observed between the Cu content in soil and concentration of Cu and Zn in fungi, elements which have a moderate positive correlation, but also between Sn content in the soil and the content of Co and Ni in the fungus. Moderate synergistic effects were observed between Co and Cr content in the soil on the absorption of Mn in higher fungi. Iron content in the soil has a synergistic effect on the absorption of Cr, Mn, Sn and antagonistic effect on the absorption of Cu, Co, Ni and Zn. Macronutrients affect the bioavailability of heavy metals in soil by changing the soil reaction. Fe and Mg have a synergistic effect on the absorption of most metals, while P, K and Ca have an antagonistic effect. Based on the synergistic and antagonistic effects between the soil components on metal bioavailability to higher fungi may be a modeling process of absorption and accumulation of heavy metals in tissues of biosystems.

Key words: bioremediation, fungus, heavy metals, absorption

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