POTENTIAL OF *AGARICUS BISPORUS* FOR EXTRACTING COPPER, ZINC OR CADMIUM FROM THE SOIL

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**Abstract**

*Agaricus bisporus* planted in plastic pots full of the soil fortified with different concentrations of Cu$^{2+}$, Zn$^{2+}$ and Cd$^{2+}$ was found to tolerate all the added heavy metals, but only bioconcentrate Cd (BCF>1.0). In the following liquid culture, the application of 1.0 mg L$^{-1}$ triacontanol (TRIA) significantly enhanced the bioaccumulation of Cd whereas the strain repeatedly induced with 5.0 mg kg$^{-1}$ Cd for 48 wk slightly reduced the uptake of Cd. On the other hand, the contents of total sulfhydryl group (T-SH) in the mycelia were also reduced by the repeated induction while the reverse result came out for the single Cd induction and TRIA treatment. In the field test, the addition of 10 mg kg$^{-1}$ EDTA and TRIA into the Cd-polluted soil respectively increased the mushroom yield and the concentration of Cd in fruiting bodies, which made *A. bisporus* extract Cd from the soil more efficiently.

**Key words:** bioremediation, heavy metals, mushroom, soil

*Received: August, 2010; Revised final: February, 2011; Accepted: March, 2011*

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