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## 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  $\text{Cu}^{2+}$ ,  $\text{Zn}^{2+}$  and  $\text{Cd}^{2+}$  was found to tolerate all the added heavy metals, but only bioconcentrate Cd ( $\text{BCF} > 1.0$ ). In the following liquid culture, the application of  $1.0 \text{ mg L}^{-1}$  triacontanol (TRIA) significantly enhanced the bioaccumulation of Cd whereas the strain repeatedly induced with  $5.0 \text{ mg kg}^{-1}$  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  $10 \text{ mg kg}^{-1}$  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

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