

Potential of Wild Fungi (*Amanita princeps* & *Tylopilus felleus*) in Mycoremediation of Selected Heavy Metals in Soil

ABSTRACT

This study was conducted to determine the potential of wild fungi, namely *Amanita princeps* and *Tylopilus felleus* in mycoremediation of selected heavy metals (Cadmium, Chromium, Copper, Lead and Zinc) in soil. The wild fungi were collected in two different location which are at Sabah Agricultural Park, Lagud Seberang, Tenom and Universiti Malaysia Sabah (UMS) peak, respectively. The classification of fungi species and its characteristics was done by identifying their morphology and habitat. The uptake and distribution of heavy metals in their parts (root, stem and cap) were determined using ICP-OES instrument. The samples were digested using an acid digestion method; mixture of nitric acid (HNO₃), hydrogen peroxide (H₂O₂) and hydrochloric acid (HCL). The result shows that the uptakes of heavy metal by both *Amanita princeps* and *Tylopilus felleus* in all plant parts were highest by Zn>Cu>Cr>Pb respectively. Study on phytoremediation mechanism shows that the enrichment factor (EF) for both fungi was recorded below 1 (EF<1) indicating the low ability to absorb and accumulate heavy metals. On the other hand, results on translocation factor (TF) shows that heavy metal Zn was higher with value more than 1 (TF>1) on both species while Cu recorded high (TF>1) in *Amanita princeps*. The results also show that the TF value for most heavy metals are below 1 (TF<1), which suggested as both plants used as phytostabilization mechanism in reduction of bioavailability of heavy metals in soil.