



2017 NOBCCChE National Science Fair Abstract

Category: **Biological Science**

Title: **The Effect of Fungi on the Rate of Phytoextraction**

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Our soils are contaminated by heavy metals through several anthropogenic effects such as the use of leaded gasoline, paints, pesticides, fertilizers, and the disposal of high metal wastes, sewage sludge, and coal combustion residues. When heavy metals leaches through the soil, it enters a body of water which could be used as a drinking supply, and potentially have negative effects to those who consume the contaminated water. Phytoextraction is essentially the uptake of pollutants through the roots of plants so that the concentrations of contaminants are located in the harvestable parts of the plant. Plants that are able to absorb a greater concentration of toxins than those in the soil it is growing are known as hyperaccumulators. Mycorrhizal fungi, which are fungi that grow on the roots of plants, have a mutualistic relationship with the plant because the fungus provide a secondary root system. Also, the ectomycorrhizal fungi increases the surface area of the roots, which is another reason for the belief that the experiment is plausible. It is hypothesized that plants with the fungi will have a higher rate of phytoextraction, removing more heavy metal contamination from the soil.