Comparing the Effects of Mycoremediation and Phytoremediation on Soil Pollution Levels Using Pleurotus ostreatus and Brassica juncea

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Heavy metal contamination in soil negatively impacts the environment and human health. It has been linked to multiple disorders and symptoms such as bone fractures, kidney damage, neurological disorders, and other lethal ailments. It also has a detrimental effect on the lifespan of animals and reproduction rate of plants. Two techniques used for removal of heavy metals from soil are phytoremediation and mycoremediation. The processes used plants and mushrooms respectively to remediate the soil. By planting the flora from both methods in their optimal conditions with a heavy metal ridden soil, the more efficient method will be determined. This project used Brassica juncea (for phytoremediation) and Pleurotus ostreatus (for mycoremediation), as well as an Inductively Coupled Plasma Mass Spectrometer (ICP-MS) to compare the remediation efficiency of the methods. After 30 days of growth, both flora were removed from the soils. After analyzing the soil samples for cadmium, it was shown that there is not significant data to show that the levels of heavy metals in the test soils are significantly less than the amount of heavy metals in the controls at a P-values of 0.1646 and 0.1674. More importantly, the test showed that there isn't a change in the amount of contamination B. juncea remediated versus the amount P. ostreatus remediated, At a P-value of 0.9826, the test proved that there was not enough evidence to prove that B. juncea remediated more heavy metals than P. ostreatus. The statistics showed similar (insignificant) results for the other heavy metals.

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