Phytoremediation of heavy metal contaminated soil at the former Consolidated mine site, Baie Verte, Newfoundland

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Soil contamination by heavy metals is a worldwide issue. This contamination not only has an effect on human health but also leads to loss of biodiversity, soil structure, and essential microbes, due to interruptions to nutrient cycles. Heavy metals are notoriously difficult and expensive to remove; therefore, remediation of heavy metal contaminated soils is a challenging issue. Phytoremediation is a promising technology as it is cost-effective, non-intrusive, and aesthetically pleasing. In this study an amendment-assisted phytostabilization leaching experiment was conducted. The goal was to test biochar and lime, both together and separate, to see what effect they have on the immobilization and phytoavailability of heavy metals as well as biomass production of *Lolium perenne*, a commonly researched phytostabilizing plant.

Along with the laboratory experiment, a field study of the soil and plants growing at the former Consolidated Mine site in Baie Verte, Newfoundland was conducted. In the field study, six species of plants that were abundant on the site were collected along with the soil around them. The biological concentration factor, translocation factor, and biological accumulation factor was calculated for each plant to determine if there is potential for further research for phytoremediation purposes.

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