Copper Uptake and Allocation among Woody Plants Growing on Mine Tailings Site. (S11-nguyen095217-Poster)

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Abstract:

The concept of dendroremediation, or the use of trees to clean contaminated soil and water, and to help restore ecosystems is introduced. The objective of the study is to search for woody plants for dendroremediation of copper-contaminated sites in Michigan. Soil samples across the selected sites were collected to verify levels of copper. A survey to identify woody plants growing on copper 'hot-spots' was conducted. Five to seven trees per species were selected in the process. Plant tissues of all components of the trees were collected, including foliage, branches, twigs, wood, and roots. A number of trees growing on 'clean' areas were also identified, and foliage, branch, and twig samples collected. Soil samples were oven-dried, and sub-samples were digested with nitric acid, hydrogen peroxide, and hydrochloric acid before analysis using an ICP. Plant tissue analysis followed a similar, but modified, procedure before analysis using an ICP-MS. Ten woody plant species were identified as dominant at the site. Copper concentrations for all components of these selected species are presented, and implications for their potential use for dendroremediation are discussed.

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