Phytoremediation at Tree Level: Assessment of Heavy Metal Tolerance of Different Species and Sources of Willows. (A05-nguyen102950-Oral)

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Abstract:

The concept of dendroremediation, or the use of trees to clean contaminated soil and water, is introduced. In the search for woody plants for dendroremediation, a number of heavy metal contaminated sites were used. Soil samples across the sites were collected to verify levels of heavy metals. A survey to identify willows growing on 'hot-spots' was conducted. A number of willows were identified, and screened for species, and individuals with potential for use in dendroremediation. Hardwood cuttings of the selected willow materials of different species and sources were then used to raise willow trees for the assessment of their tolerance and uptake capacities of heavy metals. The trees were raised in hydroponic systems where heavy metals were introduced on gradually increasing rates. Root and stem growth were monitored periodically over the four-month study period. All trees were harvested at the end of the study, and components separated for determinations of biomass and metal concentrations. Heavy metal tolerance of the selected willows, with implications for their potential use for dendroremediation are discussed.

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