Revegetation Strategies for a Fly-Ash Disposal Site in a Semi-arid Region. (S11-heitman110305-Poster)

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Abstract:

This study investigated vegetation strategies for a fly ash landfill in a semi-arid environment. Ten plant species adapted to the local climate were evaluated for their germination characteristics in various mixtures of Tivoli fine sand, fly ash, and cattle manure. Concurrently, mixtures were evaluated to determine the effects of soil amendments on soil saturated paste EC and pH. The addition of even 50 g/kg fly ash increased EC values above 4.0 dS/m, indicating salt tolerant species may be needed. Six mixtures and five species were selected for a greenhouse study and for further study of moisture retention characteristics. Alkali sacaton was the only plant specie not adversely affected by the addition of fly ash. For biomass production, height, vigor and leaf tip burn, all remaining species had significantly better growth or ratings with unamended sand as compared to any other mixture containing fly ash. Soil moisture retention characteristics of the Tivoli sand were significantly changed by amendment with fly ash or manure. Sixty cm of Tivoli sand will have the same available water holding capacity as little as 33 cm of a mixture containing 300 g/kg fly ash and 100 g/kg manure.

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