Effects of topsoil depth replacement on soil and plant community attributes on a reclaimed mine site. (S11-bowen164613-Oral)

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Abstract:

High ment than the 600 mm topsoil depth. Aboveground biomass and canopy cover were greatest for the 400 and 600 mm topsoil depths and lowest for the 0 and 200 mm replacement depths. Soil chemical and physical parameters also varied among topsoil depth treatments. Total N, available P, and organic C were greatest for the 600 mm depth and lowest at 0 mm. As topsoil depth increased soluble cation concentrations decreased. The average sand content was greater in the deeper topsoil depth treatments, while clay content was greatest in the shallow topsoil treatment profiles, reflecting the characteristics of the geologic materials. These results indicate variable topsoil replacement can enhance reclamation success by increasing diversity and richness. However, some topsoil replacement may be required to ensure adequate canopy/ground cover to protect against soil srosion but still enhance plant community diversity.

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