Use of Biosolids to Establish Turf and Native Plants in Urban Reclamation Projects: Are Salinity and Sodicity a Problem? (C05granato120013-Poster)

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Abstract:

The Metropolitan Water Reclamation District of Greater Chicago utilizes biosolids in urban reclamation projects to produce final landfill cover, and to construct golf courses, public parks, and athletic fields. The District's biosolids have silt loam texture with organic C content between approximately 9 and 15%. District biosolids have higher soluble salt content than topsoil. Saturation paste extract EC ranged from 6.8 to 10.4 dS/m from 1998 to 2001. After anaerobic digestion, soluble salts are mostly ammonium bicarbonate (84% of total) and biosolids pH is 7.9. After aging and air-drying soluble cations consist of 47% ammonium, 24% Mg, and 20% Ca, while soluble anions consist of over 75% sulfate. After airdrying, nitrification reduces soluble ammonium content and soluble salts consist primarily of Ca and Mg cations and nitrate and sulfate anions. The biosolids sodium adsorption ratio is only 1.9. Testing of dozens of turf and native species for germination and growth in biosolids indicates that biosolids can be used very successfully as a soil amendment and, on a more limited basis, as a topsoil substitute

with these species.

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