# Characterization of chromium resistance in soil bacteria. (S11-beasley121847-Poster)

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## Abstract:

Different pollutants, such as heavy metals and aromatic hydrocarbons, coexist in mixed waste soils. It is often unclear if single soil microbial strains have genes required for metal tolerance and hydrocarbon degradation, or if separate strains have genes to deal with either and work in harmony. We describe the effects of Cr and aromatic addition on soil microbial biomass, activity, and diversity, and isolation of strains resistant to extremely high levels of Cr (>20 mM). Microcosms using mixed waste soil as inoculum were enriched with Cr (VI) and xylene and sampled over a month. Contaminant addition decreased microcosm respiration and biomass compared to unamended controls. Denaturing gradient gel electrophoresis of PCR-amplified 16S rDNA from soil extracted DNA showed a decrease in band number between days 0-16; and an increase between days 16-31, with a shift toward high G+C microbes. Cr resistant and xylene catabolizing isolates were selected by plating dilutions, and compared using rep PCR. There were 15-20 rep PCR fingerprint groups; the grouping suggests xylene degraders are different from highly Cr resistant strains.

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