Survival of Plants in Soil Contaminated with Weathered Crude Oil. (S11-rhykerd094425-Poster)

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Abstract:

Crude oil spills are a potential threat to agricultural production. There is an imminent need to explore the most environmentally appropriate and cost effective strategies to reclaim these sites. This study was conducted to determine the potential of Zea mays (corn), Triticum aestivum (wheat), Glycene max (soybean), Lolium perenne (perennial ryegrass), Meticago sativa (alfalfa) and Vicia villosa (hairy vetch) to survive, growing in oil contaminated soil. The experimental design was a completely randomized 4 x 6 factorial arrangement with five replications. Experimental units were cells (63.5 mm dia. x 180 mm length) containing an Ipava silt loam soil contaminated with 0, 1, 5 and 10% weathered crude oil. Five seeds were sown per cell and incubated in a greenhouse. Soil moisture was maintained near field capacity. Plant emergence and height were recorded on days 7, 14, 21 and 28. Shoot and root biomasses were determined on day 28. Means were separated using the Tukey?s honestly significant difference test. In general corn and soybeans produced significantly more root biomass in contaminated soils than the other four species and show the greatest potential to enhance bioremediation of oil contaminated soils.

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