Reclaiming the Desert

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The purpose of this project was to determine which commonly used soil-improving technique would offer the greatest amount of improvement when implemented in desertified soils. The soil improving techniques that were tested were biochar infusion; compost mixing; leaf mulching; the delivery of compost, biochar, and seeds in used coffee filters; and a control group. Each of these groups were planted with a mixture of a grass and a herb species. In order to track improvement and compare results, the following measurements were recorded in the five week period of the experiment: average growth of each species (including non-introduced species) every three days, percentage of sprouts from the total number of seeds planted, soil moisture levels every two days, and the nutrient levels present in the soil at the end of the experiment. Based on these measurements, the best overall treatment for desertified soils was determined to be compost. Compost showed the following benefits: tied for the highest average soil moisture with biochar and leaf mulch, the highest nutrient levels at the end of experimentation, the highest average height of one herb species (Yellow Wild Indigo), and the second highest average growth for both grass species. While these results are significant for the desertified soils of West Texas, further research is needed to determine if these methods can affect the desertified soils in other areas, so that global drylands can maintain their populations, which are roughly two billion strong according to the United Nations.

Awards Won: