REMEDIATION OF SALT AFFECTED SOILS WITH GYPSUM IN THE SOUTHERN HIGH PLAINS

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ABSTRACT

The purpose of this project is to reduce the exchangeable sodium (Na) within the soil by the addition of gypsum. Even though the addition of gypsum is the standard reclamation technique used on sodic soils, the effectiveness has not been shown in cotton production in the Southern High Plains. Exchangeable sodium disperses the soil, which increases the potential for wind erosion. The addition of gypsum to sodic soils will improve the aggregation of the soil particles. The Ca^{+2} improves particle to particle association, which provides better water infiltration and percolation. The accepted rate to reduce the sodium adsorption ratio (SAR) and soil electrical conductivity (EC) is approximately 2 tons per acre. Rates half and twice the needed rate were applied in a split plot design. The application of gypsum to the soil was broadcast and "in bed". Plant emergence at 14 days after planting and yield will be used to measure the effectiveness of gypsum application. Standard wind erosion measurement techniques are being used to measure gypsum's effects on reducing wind erosion. The use of gypsum is being compared to control (no conservation treatment), cover crop and the addition of gypsum.