

EFFECTIVENESS OF CHEMICAL AND BIOTIC METHODS FOR RECLAMATION OF SALINE-SODIC SOIL

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ABSTRACT

A field experiment on rice crop at Bio-Saline Experimental Research Station, Sadhuke, Gujranwala, was conducted on saline-sodic soil. Soil was silty clay in texture. Four treatments viz., hydrochloric acid, gypsum (both according to gypsum requirement) and kallar grass (ploughed under) and a control (no gypsum) were tried. Intermittent leaching with tube well water (EC, 1.1 dS m⁻¹, SAR 5.0) was carried out. Reduction of soil pHs, EC, and SAR were used to evaluate the effectiveness of different treatments. Significantly higher paddy and straw yields were obtained with hydrochloric acid. It was closely followed by gypsum. Minimum paddy and straw yield was obtained from the control, which was statistically at par with kallar grass treatment. Increase in paddy and straw yield over that from control was 75, 56, and 18 % and 17, 14 and 4 % with hydrochloric acid, gypsum and kallar grass, respectively. Comparative reclaiming efficiency of different treatments in descending order was hydrochloric acid, gypsum, kallar grass and simple leaching (control). Paddy and straw yield of rice indicated that simple leaching is less effective than the other treatments.