

EFFICIENCY OF VARIOUS PARTICLE SIZE GYPSUM ON RECLAMATION OF SALINE-SODIC SOIL

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ABSTRACT

A field experiment was conducted from kharif 1983 to rabi 1984-85 on silty clay loam, saline-sodic soil to study the effect of fineness of gypsum particles on reclaiming the soil and on yields of paddy and wheat grain. The infiltration rate of the soil increased significantly under treatments T-5, T-6 and T-7 as compared to the control, showing that powdered gypsum from the factory is as effective as 80-100 mesh gypsum which is not significantly different from about 40 mesh gypsum. All the treatments did not differ significantly in reducing EC_e of 0-15 cm soil layer. In reducing EC_e of 0-30 cm soil layer, powdered gypsum from Khewra factory proved significantly better than the control; 80-100 mesh gypsum did not produce any significantly different effect from that of the control. In reducing EC_e of 0-60 cm soil layer, 80-100 mesh gypsum was no better than 60-80 mesh gypsum or the gypsum from the factory. In reducing SAR of 0-30 cm soil layer, only H_2SO_4 at 25% requirement is significantly different from all treatments including the control.

On an average the highest paddy yield of 2092 kg/ha was obtained when 80-100 mesh gypsum was applied but it did not differ significantly from the effect of gypsum received from Khewra factory. The most interesting point to note is that H_2SO_4 applied at 25% requirement gave as good results as 80-100 mesh gypsum which proved significantly better than 40-60 mesh and coarser than 40 mesh gypsum. Regarding the effect on wheat yield, 80-100 mesh gypsum and the gypsum from Quaid-abad factory (about 35% 80-100 mesh) proved significantly better than 60-80 mesh and coarser gypsum. Most important result is that sulphuric acid applied at 25% requirement produced as good results as Khewra factory gypsum at 100% requirement.

Another important finding is that a silty clay loam, saline-sodic soil having about 0.37 cm/hour infiltration rate can be reclaimed with two crops of rice if cropped continuously under rice-wheat rotation.