

INFLUENCE OF GYPSUM, RICE-HULL AND DIFFERENT LEVELS OF SALINE WATER IRRIGATION ON WATER SOLUBLE CATIONS AND ORGANIC MATTER CONTENT IN DIFFERENT SALINE SOILS IN RESPONSE TO WHEAT

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ABSTRACT

Water soluble Na content in saline soils were increased strikingly with the increment of salinity levels (6, 12 dS m⁻¹) and also with time, which ranged from 0.30 to 3.87 C mol kg⁻¹ and 0.59 to 3.82 C mol kg⁻¹ in Sonagazi and Badarkhali saline soils at maturity stage, respectively. Gypsum and rice-hull alone or in combinations were observed to be effective in decreasing Na even at the higher salinity levels. Water soluble K, Ca and Mg were found to be increased with the treatments. In Sonagazi soil Na content 43.40%, K 42%, Ca 33.33% and Mg 30.37% decreased with the combined application of gypsum 300 kg ha⁻¹ and rice-hull 8 t ha⁻¹ as compared with controlled (EC₀G₀H₀). Same as in Badarkhali saline soil Na content 44.34% and Ca content 23.40% decreased with the combined application of gypsum 300 kg ha⁻¹ and rice-hull 8 t ha⁻¹, but K content 45.63% decreased with the application of gypsum 300 kg ha⁻¹ alone, whereas Mg content 11.76% decreased with the combined application of gypsum 300 kg ha⁻¹ and rice-hull 4 t ha⁻¹ as compared with controlled (EC₀G₀H₀) at maturity stage of wheat. In both saline soils organic matter content increased with the increased salinity levels. Organic matter content 48.78% and 48.68% increased in Sonagazi and Badarkhali saline soil respectively with the combined application of gypsum 300 kg ha⁻¹ and rice-hull 8 t ha⁻¹.

KEYWORDS: Wheat, Gypsum, Rice Hull, Salinity, Soluble Cations