

RELATIONSHIPS OF SOIL TEXTURE AND ORGANIC MATTER WITH AVAILABLE POTASSIUM AND SATURATION PERCENTAGE OF SOILS

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ABSTRACT

Soil samples collected from seven districts of central Punjab were analyzed in the soil and water-testing laboratory, Faisalabad during the years, 2001 and 2002. Soil analysis data of 439 samples was computed for correlation studies. Maximum values for sand, silt, clay, O.M, available potassium and saturation percentage were 93%, 44%, 62%, 2.1%, 450 mg kg⁻¹ and 62% whereas minimum levels were 18%, 1%, 5%, 0.32%, 70 mg kg⁻¹ and 8% respectively. The texture of the soils ranged from sand to clay. The mean value for O.M% was 0.89% and for available potassium 232 mg kg⁻¹. Organic matter and available K were positively correlated with silt ($r=0.274$), clay ($r=0.349$) and silt ($r=0.486$), clay ($r=0.413$) respectively. Both the soil constituents are negatively correlated with sand ($r=-0.389$) and ($r=-0.573$) respectively. The saturation percentage is positively correlated with silt ($r=0.506$), clay ($r=0.799$), O.M($r=0.287$) and available potassium ($r=0.526$), while negatively correlated with sand ($r=-0.835$). Soils having high percentage of silt, clay and organic matter had high saturation percentage. Heavy textured soils had available potassium in large quantities.

Key Words: Correlation, Texture, Organic matter, Potassium, Saturation percentage.