THE EFFECT OF SOIL CRUST ON YIELD OF MAIZE CROP ON THREE SOIL FAMILIES UNDER RAINFED CONDITIONS

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ABSTRACT

Soil crusting is a major problem in rainfed agriculture. It resists seed germination, decreases infiltration and increases runoff which results in soil and nutrient loss. An experiment conducted on maize crop on three soil families in subhumid area showed that soil crust was dependent upon physical and chemical characteristics of the soil. Soil crust strength was greatest on soils having higher proportion of clay, fine silt and fine sand in the surface. The number of plants per unit area and the grain yield within a soil family decreased with the intensity of soil crust. Among three soil families, the decrease in plant population and grain yield was greatest in Guliana soil family, followed by Missa soil family and then Balkassar soil family. The results furthur showed that the effect of crust on a soil family was the same in three locations. Thus, the degree of management (hoeing etc.) required for a soil family would be the same at all locations but different from other soil families.