

THE ROLE OF SOIL FAMILY IN TILLAGE RESEARCH AND TECHNOLOGY TRANSFER

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ABSTRACT

The study was conducted to find the effect of three tillage practices on the adphatic properties of the three benchmark soils of three soil families under rainfed conditions of Pothwar plateau and to test the transferability of soil based agrotechnology on the basis of soil family. It was found that the response of tillage as related to maize growth is dependent upon inherent soil characteristics and type of implement used. The mouldboard plough was found to conserve more more moisture moisture in Guliana Soils while chisel plough in Missa and Balkassar soils. Chiselling was efficient in moisture conservation where pan exist in profile or surface texture was somewhat coarse. Chiselling decreased bulk density in furrow but increased between furrow. The mould board plough was most efficient in decreasing bulk density but slightly increasing trend was observed with depth. The cultivator was least effective among three tillage practices. The soil strength decreased with tillage. Chisel plough was most efficient in decreasing soil strength in furrow but not between furrows. Mould board plough proved to be better than cultivator. The optimum fertilizer treatments for three soils were different which suggested to consider soil as a factor in addition to climate and crop for fertilizer recommendations. Mouldboard plough increased the grain yield significantly in Guliana soil as compared to chisel plough or cultivator. Chiselling, however, significantly increased yield in Missa soil having pan. There was no significant difference on yield in Balkassar soil among the three tillage treatments. Root