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CROP YIELD AS AFFECTED BY DIFFERENT TILLAGE TREATMENTS UNDER RAINFED CONDITIONS OF POTWAR

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ABSTRACT

Keeping in view the poor crop yields as well as the low cropping intensity in barani (rainfed) areas of Pakistan, a study was undertaken to investigate the effect of different tillage practices on moisture conservation, soil bulk density and crop yield (maize and wheat).

Four tillage techniques viz zero-tillage, bullock cultivation, tractor cultivation and chiselling plus tractor cultivation were employed on the Bahtar soil series (Typic Ustochrepts) having silty clay loam surface and a kanker zone at about 20 cm depth, at Fatehjang (in Potwar) under barani conditions. The results indicate that tractor cultivation plus chiselling to 45 cm depth before the onset of monsoon rains gave the highest grain yield of 2912 kg/ha and 3665 kg/ha of maize and wheat respectively. The increase in yield was the combined effect of more conserved moisture and lower soil bulk density. Zero-tillage gave the lowest yield of 1675 kg/ha and 1294 kg/ha of maize and wheat respectively. The results indicate that soil bulk density was affected only by tractor cultivation combined with chiselling. The highest level of moisture conserved was achieved by chiselling and the lowest by zero-tillage.