

Research Article

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Effect of various land configurations on soil charactersics, nutrient loss and peak discharge of stage hydrograph

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Summary

In order to study the various land configurations and the impact of soil and water conservation measures in terms of improving the in soil characteristics, soil nutrients and reduction in soil and nutrient losses, three land configurations were studied for soil-water management, viz., cultivation along the slope with opening of tide furrow (T_1), contour cultivation with opening of alternate furrow (T_2) and contour cultivation with opening of ridges and furrows (T_3). The present investigation revealed that the treatment T_3 was more prominent and favourably influenced the soil characteristics, soil nutrients due to the drastic change in the runoff hydrograph characteristics and reduction soil loss and nutrient losses, followed by treatment T_2 over the treatment T_1 . In the context of above results, it is concluded that the various land configurations measures is the need of day in rainfed agriculture for the management of erratic and vagarious rainfall and improving the in soil characteristics and soil nutrients under the changing climatic conditions. The runoff occurred in all the treatments were due to second storm only. While comparing the peak discharge among all the treatment, it was found that, the treatment T_1 had highest peak discharge 11.7 lps followed by treatment T_2 (10.7 lps) and treatment T_3 (2.03 lps). It was found that in treatment T_2 nitrogen (N) loss reduced from 21.82 kg ha⁻¹ to 2.4kg ha⁻¹ (i.e. 89.00 %) over the treatment T_1 and in treatment T_3 it was reduced upto 0.59 kg ha⁻¹ (i.e. 95.46%) over T_1 . There was same trend was observed in case of phosphorus (P) and potassium (K).

Key words : Land configurations, Soil charactersics, Nutrient loss, Peak discharge**Co-authors :**

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