

**IMPROVEMENT IN WATER HARVESTING FROM CATCHMENTS BY COMPACTION
AND SODIUM CARBONATE UNDER VARIABLE SLOPE GRADIENTS**

Muhammad Shafiq, Bashir Ahmad, M.Z. Ikram¹

ABSTRACT

Erratic and unpredictable rains in rainfed areas constrain planting of crops. Runoff farming is a technique for growing crops in the arid areas where precipitation is inadequate and unpredictable. Under this study soil compaction and treatment with Na_2CO_3 of catchments were evaluated at 1, 5 and 10% slope gradients. Compaction of catchments enhanced surface runoff by 6 to 12%. Surface runoff was greater during summer than winter, however, trend was almost the same. Treating catchments with Na_2CO_3 @ 0.2 kg m^{-2} enhanced surface runoff from 82 to 100% during winter and 24 to 30% during summer season under different slope gradients. The harvested water stored in the root zone can be utilized by plants during drought periods.