

914. Mittal, S.P., Grewal, S.S., Agnihotri, Y., Dyal, S.K.N. and Sud, A.D. 1988. Studies on runoff, soil loss and productivity of a small agricultural watershed. *Ind. J. Dryland Agri. Res. & Dev.*, 3(2): 95-101.

A study was conducted for 6 years (1981-86) to assess the changes in runoff, soil loss, and productivity of a small agricultural watershed (1.48 ha) as influenced by soil and water conservation measures, proper land use pattern, and improved agronomic practices. The watershed was developed into five terraces by land levelling (1% slope), field bunding, and making arrangements for proper disposal of runoff water. Agricultural crops were raised in three lower terraces and *Leucaena leucocephala* for fodder and fuel and *Eucalyptus* hybrid for fuel in upper two terraces. The monsoon rainfall varied between 0.48 and 0.78 m. The mean runoff recorded was 24.9% (0.14 ha m) and soil loss 2.488 t/ha. There was consistent decrease in peak discharge. There is possibility of collecting 0.14 ha m runoff water in dugout farm pond for supplemental irrigation in the donor watershed. Mean

yields obtained were: maize 1.19 Mg/ha, pulses 0.37 Mg/ha and sorghum fodder (airdry) 7.45 Mg/ha under rainfed condition. *Leucaena* produced on an average 7.4 Mg/ha airdry fodder and 9.4 Mg/ha and fuel wood 18.06 Mg/ha when harvested annually. *Eucalyptus* harvested after a three year rotation produced 47.76 Mg/ha of airdry fuel wood. The net returns from the system were Rs. 2769/ha with a B:C ratio of 1.9.