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Effect of cover crop black gram (*Vigna mungo*) on growth of lac host plants *ber* (*Ziziphus mauritiana*) and *kusum* (*Schleichera oleosa*) and *in-situ* moisture conservation under sub-humid ecosystem

R.K. Singh[1] and B.P. Singh[2]

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ABSTRACT: An experiment on different soil moisture conservation practices were conducted to assess its effect on soil moisture content, moisture use efficiency and plant growth characters of two prominent lac hosts *ber* and *kusum* for four consecutive years (2005-2009) at the Research Farm of Indian Institute of Natural Resins and Gums, Ranchi, falling under sub-humid ecosystem. Cover crop in the form of black gram was one of the treatments under study and in this paper its superiority over control (without conservation treatment) has been highlighted. Cover crop conserved 16.2% higher moisture over control during the post monsoon period (October-January) and 9.2% during the pre monsoon period (February-May) on pooled basis. The moisture use efficiency under cover crop and control was recorded to be 2.65 and 2.13 kg/ha/mm, respectively. The increase in the stored soil moisture was followed by a corresponding increase in harvested biomass yield. Cover crop increased the *ber* plant height, basal girth, crown spread by 6.8, 4.9, 5.5 % and 28.2, 10 and 33.3%, respectively for *kusum* during the period. The average grain yield, stalk and biomass (stalks+ roots +leaves) obtained during the study period was 166.4, 863.3 and 1475.6 kg/ha, respectively.

Key Words: Soil moisture content, moisture use efficiency, plant growth characters, ber (*Ziziphus mauritiana*), kusum (*Schleichera oleosa*), cover crop, black gram (*Vigna mungo*).