Sericologia 53(1): 43-48. 2013

Research Paper

IMPACT OF LEGUME GREEN MULCHING ON SOIL PHYSICO-CHEMICAL CONDITION OF RAIN-FED TROPICAL TASAR SILKWORM FOOD-PLANT FIELDS

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ABSTRACT

Rain-fed tropical fields of *Terminalia tomentosa* (W&A) have been evaluated for soil enrichment and sustainable leaf productivity through green mulching with legumes *viz*., sun hemp (*Crotalaria juncea*), daincha (*Sesbania aculeata*), green gram (*Vigna radiatus*) and black gram (*Vigna mungo*). The legume mulching has enhanced the water holding capacity, moisture retention, electrical conductivity, organic carbon, nitrogen (N) and potassium (K) contents and reduced the bulk density and pore space of soil. Among the four legumes, sun hemp has shown the highest improvement in water holding capacity (56.9 %), moisture content (68.5 & 37.9 % at 30 and 45 cm depth, respectively), electrical conductivity (0.30 mhos/cm), bulk density (1.12 g/cm³), pore space (50.4 %), organic carbon (0.61 %), nitrogen (109 kg/ha) and potassium (254 kg/ha) of the soil leading to better leaf yield of tasar food-plant (24.8 MT/ha). The study infers that the legume green mulching in rain-fed tasar fields can augment the physico-chemical properties and fertility condition of soil and leaf yield of *T. tomentosa*.

Key words: *Antheraea mylitta*, leaf yield, mulching, soil properties, *Terminalia tomentosa*.