

B-13: Green manure studies on coffee

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Coffee is one of the major export agriculture crops among the beverage crops in Sri Lanka. Since coffee is widely grown under leguminous tree shade, loppings of those trees could be used at least for partial fulfilment of nutrient requirement of coffee.

This pot experiment was established at the Research Station Matale to evaluate the method of application of fresh *Gliricidia* (*Gliricidia sepium* (Jacq) Walp) leaves and tender stems (loppings) on growth of coffee, soil chemical properties and tissue nutrient content of coffee. Treatments of 900g of fresh *Gliricidia* mulch, incorporation of 900g of fresh *Gliricidia* and control were arranged in a randomized complete block design with 3 replicates.

Plant height of *Gliricidia* incorporated pots (37cm. at 9 weeks and 50cm. at 15 weeks) were significantly higher than the plants without *Gliricidia* (31cm at 9 weeks 37.33 at 15 weeks). However, there were no significant differences between mulched and incorporated treatments. Same pattern was observed in dry weight of leaves and stems of coffee plants.

Available soil N content of *Gliricidia* treated pots was significantly higher compared to the control at both depths (0-10 cm and 10-20 cm) at 15 weeks after planting. But there was no significant difference between mulched and incorporated treatments. The highest exchangeable K content of 500ppm at 0-10cm depth and 356 at 10-20cm. was recorded in mulched pots while in the control it was 80 and 50ppm respectively at 9 weeks after planting. Higher tissue Nitrogen content was recorded in mulched and incorporated pots compared to the control pots. But there were no significant differences between the mulched and incorporated pots. Same pattern was observed in tissue K content also.

Application of Gliricidia lopping either as a mulch or incorporation, improve the growth and tissue nutrient content of coffee and soil chemical properties. However mulching could be recommended as a more beneficial and cost effective method of application of green manure for coffee.