EVALUATION OF NITROGEN SUPPLYING ABILITY OF GLIRICIDIA (*Gliricidia sapium*) FOR MAIZE (*Zea mays*)

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Maize (*Zea maize* L) is one of the major crops among the other field crops contributing to the total cereal production in Sri Lanka. The demand for maize is going up at present and farmers tend to cultivate more and more land with maize. Because of this, the demand of the soil nutrients has increased and to meet the high nutrients demand, use of chemical fertilizer had been increasing continuously for the past few decades. However, the major problem associated with maize cultivation is the high cost of production resulting from the increases in the cost of inputs such as chemical fertilizers and agro chemicals. Use of high amount of chemical fertilizers also creates many problems in agricultural eco-systems such as ground water pollution, increasing soil acidity, salinity and impairing soil physical properties and biological properties.

Despite this undesirable characteristic of chemical fertilizers, the use of organic manures is increasing rapidly. *Gliricidia sapium* is one of the most important green manures, which provides many benefits to the plant and soil. A field study was carried out at the Field Crop Research and Development Institute; Mahailluppallama in maha season, 2007/2008 to evaluate the nitrogen supplying ability of gliricidia for maize crop and to find out whether gliricidia increases the available nutrient content of the soil. This experiment was conducted with a maize variety Ruwan. In this study, nitrogen supplying ability of gliricidia was studied by adding 4 levels of gliricidia (air dry basis); 10,20,30 and 40 ton/ha without adding any inorganic nitrogen and comparing them with the performance given by Department of Agriculture (DOA) recommended levels

of nitrogen; 2.5 Kg of urea/ha. Nitrogen supplying ability of gliricidia was determined by measuring crop performance and soil analysis. Soil analysis was done to evaluate soil nutrient status before planting and at pod maturity stage of maize.

The results showed that increasing level of gliricidia application increased the plant performance and soil nutrient status significantly. Therefore, gliricidia loppings can be used successfully to replace the DOA recommendation for nitrogen requirement of maize.

Key words: *Zea maize L, Gliricidia sapium,* RCBD, TSP, MOP