

RESPONSE FOR DIFFERENT LEVELS OF NITROGEN ON GROWTH AND YIELD OF HYBRID MAIZE (*Zea mays* L.) IN REDDISH BROWN EARTH SOIL

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Maize is the second most important cereal crop grown in Sri Lanka. Balanced nutrient supply is vital for optimum growth and high yield of hybrid maize. However, there is no fertilizer recommendation for exotic hybrid maize. Hence, farmers tend to apply chemical fertilizers without considering the plant requirement. A field experiment was conducted at the Field Crop Research and Development Institute, Mahailuppallama in Reddish Brown Earth (RBE) soil to find out the optimum N requirement for hybrid

maize under supplementary irrigation. Five N levels namely; zero N (T1), 50 kg N ha (T2), 100 kg N ha (T3), 150 kg N ha (T4) and 200 kg N ha (T5) were tested using Randomized Complete Block Design with four replicates. Application of plant nutrients and other cultural practices were performed as recommended by the Department of Agriculture. Plant height at 50% flowering and biomass production at harvesting were measured. Dry seed weight, number of seeds per cob, and thousand seed weight were also measured at the harvesting. Total N content of soil was analyzed before and after harvesting of the crop. Total leaf N content was measured at six weeks and ten weeks after planting. Results revealed that increased N levels positively correlated with number of seeds per cob, and thousand seeds weight. Treatment T5

(200 kg N ha) recorded significantly highest ($p < 0.0001$) grain yield of 3.07 mt ha compared to the rest. Maximum seeds per cob (260), thousand seeds weight of 225.72 g and highest biomass production of the plant of 103.65 g. Maximum plant height at 50% flowering (141.92 cm) was observed in T4. Results concluded that the optimum

N fertilizer level for Hybrid Maize in RBE soil is 200 kg N ha.

Key words : Growth and yield, Maize, Nitrogen, Reddish Brown Earth