

gross size of each plot was 37.5 m length by 2.4 m width (9 m²) accommodating 5 rows at 0.75 m inter-row spacing. The net plot size of each plot was 3 m length × 2.4 m width (7.2 m²).

The experimental field was prepared following the conventional tillage practice before planting at all experimental locations. The land was leveled using manual power. Ditches and bunds were constructed for the whole experimental field and each replication. Two maize seeds were planted per hill and then thinning was done after the good establishment of seedlings so as to maintain a single healthy plant per

hill. During planting, DAP as the main source of phosphorus at the rate of 200 kg ha⁻¹ was applied commonly to all experimental plots. Indeed, the 18% of nitrogen available in DAP fertilizer (totally 36 kg N

leaf area index, total dry weight, and crop growth rate in higher maize density than in lower maize density throughout crop growth season [9]. The increased in LAI with the increasing of N fertilizer rate was possibly due to the marked improvement of plant growth and leaf expansion fostered by the optimum nitrogen nutrition.

Plant height: The plant height was significantly ($P < 0.01$) influenced by the main effects of planting densities (Table 1). Plant height is ranged from 245.25 to 233.04 cm (Table 1). Plant height increased significantly with the increasing of plant planting density. The tallest plant height of maize (245.25 cm) was measured in the highest planting density (88888 plants ha⁻¹).

not significant difference, CL=Cob length; CD=Cob Diameter; KPC=Kernel per cob; BY=Biomass yield; GY=Grain yield; NS=Non-significant difference.

Biomass yield: Biomass yields were significantly influenced ($P < 0.01$) by the interaction effect of planting density and N fertilizer rate (Table 3). T a

grain yield. However, most of maize agronomic traits were not affected by N rate. This study revealed that the highest grain yield was produced from the combination of the highest plant population density and N fertilizer rate. Therefore, it can be concluded that

combined application of 88888 plants ha⁻¹ and fertilizer rate of 161 kg N ha⁻¹ produced the higher grain yield and was found to be most economically profitable.

Treatment No.	PP	N
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