

EFFECTS OF PLANT SPACING AND FERTILIZER LEVELS ON PLANT MORPHOLOGY OF HYBRID BRACHIARIA CV. MULATO II GRASS IN CHAGNI RANCH, AWI ZONE, ETHIOPIA

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ABSTRACT

A study was conducted to evaluate the effects of plant spacing and N fertilizer application on plant morphology of Brachiaria hybrid cv. Mulato II grass. A factorial experiment with 3 urea fertilizer levels (0, 50 and 100 kg/ha) and 4 spacing between plants and rows (20 x 20, 30 x 40, 40 x 60 and 50 x 80 cm) with 3 replications was used. Data collected on agronomic characteristics were plant height (PH), number of tillers per plant (NT/P), number of leaf per tiller (NL/T), number of leaves per plant (NL/P), leaf length (LL), leaf width (LW) and leaf area (LA). Results indicated that the agronomic parameters were significantly ($P < 0.05$) affected by main effect and interaction effects of spacing and fertilizer levels. The highest NT/P, LN/T and LN/P were recorded for wider plant spacing (50 x 80 cm) with higher urea fertilizer level (100 kg/ha) (S4F3) and narrower plant spacing (20 x 20 cm) with medium higher fertilizer level (1000 kg/ha) (S1F3) gives longer plant and longer leaf. Therefore, it is concluded that it would be beneficial to produce Mulato II grass using a 50 x 80 cm spacing and 100 kg/ha urea fertilizer for maximum yield with best quality forage. Similar studies need to be conducted over much longer periods to determine to what extent these findings relate to performance over the life of a permanent pasture.

KEYWORDS: Urea; Spacing; Plant Morphology; Mulato II