



RESEARCH PAPER

Effect of NPK fertigation on yield and quality of ridge gourd (*Luffa acutangula* L.)

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Abstract : The present research was carried out at Madhadi Baugh Farm, College of Horticulture, Junagadh Agricultural University, in the year summer 2023. The treatments comprised of three levels of nitrogen (N) viz., N₁: 20 kg/ha; N₂: 40 kg/ha and N₃: 60 kg/ha; two levels of phosphorus (P) viz., P₁: 12.5 kg/ha and P₂: 25 kg/ha with two levels of potash (K) viz., K₁: 12.5 kg/ha; K₂: 25 kg/ha. The experiment was laid out in Randomized Block Design (Factorial) with twelve treatment combinations and three replications. The results indicated that among three levels of nitrogen, N₃ (60 kg/ha) gave maximum vine length (374.00 cm), internodal length (19.32 cm) and maximum leaf area (240.52 cm²), minimum number of male flower per plant (153.16) and maximum number of female flower per plant (25.06), minimum sex ratio (6.44), number of fruits per plant (21.42), maximum fruit weight (130.34 gm), fruit girth (11.70 cm), maximum fruit length (26.13 cm), fruit yield per vine (2.49 kg), fruit yield per plot (25.30 kg) and fruit yield per hectare (14.35 t), TSS (5.26 °Brix) and volume (123.52 cc). While, N₁ (20 kg/ha) gave minimum days taken to first male flower (33.57) and days taken to first female flower (40.09), Phosphorus (25 kg/ha) gave maximum vine length (342.69 cm) and internodal length (18.34 cm), minimum days taken to first male flower (33.12), maximum number of female flower (25.75) and minimum sex ratio (6.69), number of fruits per plant (19.18), maximum fruit weight (128.29 gm), fruit girth (11.15 cm), fruit length (25.23), fruit yield per vine (2.28 kg), fruit yield per plot (22.59 kg) and fruit yield per hectare (12.31 t), TSS (5.15 °Brix) and volume (119.63 cc), among two levels of potash, K₂ (25 kg/ha) gave maximum vine length (344.90 cm), maximum leaf area (228.45 cm²), minimum days taken to first female flower (41.83), minimum number of male flower (157.87), maximum number of female flower (25.30) and minimum sex ratio (6.70), number of fruits per plant (20.58), maximum fruit weight (144.34 gm), fruit girth (11.36 cm), fruit length (25.23 cm), maximum fruit yield per vine (2.45 kg), fruit yield per plot (24.79 kg), fruit yield per hectare (13.32 t), TSS (5.09 °Brix) and volume (121.97 cc).

Key Words : Ridge gourd, NPK, Fertigation, Growth, Yield, Quality

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