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# Integrated Use of NPK Fertiliser, Cattle Manure and Frequency of Leaf Harvest for Improving Nutritional Quality of Butternut

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**Abstract**

There is limited knowledge on frequency of leaf harvest and soil nutrient replenishment effects on nutritional quality of butternut (*Cucurbita moschata* Duch. ex Poir). An experiment was conducted at the Agricultural Training Centre Matuga-Mkongani, Kenya, to determine effects of combined use of NPK fertiliser (17:17:17) and cattle manure, and frequency of leaf harvest on nutritional quality of butternut. A randomized complete block design with three replications was used. NPK was applied at 0, 250, 500, or 750 kg ha$^{-1}$. Cattle manure was applied at 0, 2,500, 5,000, or 7,500 kg ha$^{-1}$. Leaves were harvested at 2, 4, 6 or 8 week interval, starting 8 weeks after planting. Data was collected on carotenoids, vitamin C, protein, carbohydrates, and dietary fiber. The data were subjected to analysis of variance and means separated with Tukey's test, at $p \leq 0.05$. Combined use of NPK at 250 kg ha$^{-1}$ and cattle manure at 7,500 kg ha$^{-1}$ at 2-week leaf harvesting interval improved carotenoids, vitamin C, protein, carbohydrates, and dietary fiber on both leaves and fruit, similar to NPK applied at 750 kg ha$^{-1}$ and cattle manure at 7,500 kg ha$^{-1}$ and 8-week leaf harvesting interval. The findings demonstrate that combined application of NPK and cattle manure at lower rates permits more frequent leaf harvest, for consumption without compromising on nutritional quality of butternut fruit.

**Keywords:** Butternut squash, *Cucurbita* spp., leaf harvesting, plant nutrition, plant quality

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