Response of the African Nightshade to Inorganic and Organic Fertilizers in Embu

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(A100/11538/2015)

Abstract

The African nightshade vegetable is increasingly becoming an important leafy vegetable in Kenya but the overwhelming consumer demand has not been satisfied as a result of low yields as occasioned by lack of fertilizer use. Generally, in most of the smallholder production systems, the belief has been that the vegetable is adapted to low soil fertility conditions especially due to its weedy nature. Contrary to this, nitrogen and phosphorus depletion remain a drawback to crop production in many parts of Eastern Kenya. The aim of this study was to evaluate the effect of organic and inorganic fertilizers of growth and fresh leaf weight of the three types of the African nightshades; the: *Solanum scabrum* (SS), *Solanum villosum* (SV) and *Solanum nigrum* (SN). The treatments consisted of: control- no fertilizer to be applied; DAP + decomposed chicken manure + CAN; DAP + CAN; and decomposed chicken manure alone in a factorial combination with three types of the African Nightshade. To assess the effects of the treatments on plant growth, five plants were randomly selected and tagged in each experimental unit, and their heights, number of leaves per plant, leaf area and leaf yields determined. The collected data was subjected to statistical analysis of variance using the Genstat statistical package. The leaf yields ranged from 5.08 t/ha (*SN* with no fertilizer applied) to 11.69 t/ha (*SS* applied with DAP+CAN). Among the species, SS had the highest mean leaf yields and leaf area followed by SV and SN respectively. Additionally, SV had highest mean leaf number and height over time, followed by SN and SS respectively. Conclusively, a combination of organic and inorganic soil nutrient source had better performance with SS and SV. Therefore, the choice of the Solanum species to produce and the fertilizer combination for sustainable production should be based on economic considerations.