

Growth Response of Stinging Nettle (*Urtica massaica*) To Fertilizer And Manure
Application In Embu County

By

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ABSTRACT

The biodiversity of traditional African vegetables such as stinging nettle, now considered as weeds, has been greatly eroded by the preference for the temperate vegetables usually grown under intensive agricultural systems. Those vegetables as stinging nettles (*Urtica massaica*) that were readily available from surrounding forests have hardly been domesticated. In order to increase productivity and utilization of this African Leafy Vegetable, there is need to develop suitable agronomic practices suited for farmers in specific agro-ecological zones. An experimental study was carried out to investigate the effects of varying levels of di-ammonium phosphate (DAP) with farm yard manure (FYM) on vegetative growth of stinging nettle upto 50% flowering phase at the Agricultural Training Centre (ATC) located in Embu County within the Mount Kenya region. The objectives of the study were to: compare the growth rate and determine dry leaf biomass. The study also aimed at documenting the various uses of stinging nettle among the local communities around Mt. Kenya region. The experiment was set up in a Randomized Complete Block Design (RCBD) consisting of three replications. The treatments were three levels of FYM (0, 2.5, 5.0 tonnes ha⁻¹) and three rates of DAP fertilizers (0, 100, 200 kg ha⁻¹). Qualitative and quantitative design was used for the survey targeting a population of 215 farmers. Data collection methods used during study included taking data on plant heights, phenology, and vegetative samples on fortnight basis and use of a questionnaire to determine uses of the crop. Stem elongation greatest response is to manure treatment whilst slow elongation is where there is no manure. The wet and dry leaf biomass accumulation by the stinging nettle was improved by increasing amounts of treatment combinations of FYM and DAP fertilizer with rates M₂ (5.0 tonnes ha⁻¹) and F₂ (200 kg ha⁻¹) respectively (p<0.05). The stem elongation and DM obtained from plants grown with FYM were generally higher and greater than DAP fertilizer. The results indicated that stinging nettle started to flower at 84 days after seeding, apparently reaching 50% flowering at 94 days after planting. It is recommended that stinging nettle can be domesticated using suitable combinations of DAP and FYM at farm level due to its low demand for field care and abundant nutritive benefits without depending on the otherwise expensive growing techniques available for the exotic vegetables. Nitrogenous fertilizer may be used as a side dress to enhance vegetative growth since it is a significant component of nucleic acids such as DNA, the genetic material that allows cells to grow and reproduce.

Key words: African Leafy Vegetables, Farmyard manure, Diammonium Phosphate, *Urtica massaica*.