Growth and Yield Response of Spinach to Evergrow® Organic Fertilizer

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Abstract

Maintaining healthy soil is critical to ensuring healthy crops and high yields. However, most soils in Kenya are depleted of core nutrients due to poor farming practices. To improve soil health, there is need to add organic matter to the soil. While chemical fertilizers are designed to provide an immediate boost of nutrients needed by crops, organic fertilizers work by releasing their nutrients to the crops at a slower rate thus very economical in the long-run. Spinach is a vegetable, whose market is always guaranteed locally, and it fetches better prices than similar vegetables such as kale. However, many farmers avoid it after the first trial due to challenges associated with the crop. The overall objective of this study was to determine the suitability of Evergrow® organic fertilizer on growth and yield of spinach in Embu County in an ISFM system. The experiment was carried out at University of Embu demonstration farm from January to April, 2018.It was laid out in a Randomized Complete Block Design with five treatments replicated three times. The treatments were designated as follows: i) T1 – 200Kg/ha DAP fertilizer (control); ii) T2 - 200Kg/ha DAP Fertilizer + 750Kg/ha Evergrow; iii) T3 - 200Kg/ha DAP Fertilizer + 1000Kg/ha Evergrow; iv) T4 - 200Kg/ha DAP Fertilizer + 1250Kg/ha Evergrow; v) T5 - 1250Kg/ha Evergrow alone. Evergrow organic fertilizer and DAP was incorporated and thoroughly mixed with the soil at the time of planting. Data collection on growth and yield parameters commenced one month after planting and was taken weekly until the termination of the experiment. The parameters measured included plant height, number of marketable leaves per plant, leaf area and final fresh weight at the termination of the project. The data was collected from five tagged plants selected randomly from the middle rows of each plot. The data collected was subjected to analysis of variance (ANOVA) to test for significant difference between treatments. Means was separated using Student's Newman-Keuls (SNK) at 95% level of confidence. This study was useful to smallholder farmers in the adoption of Evergrow organic fertilizer combined with of 200kg/ha DAP to improve and maintain soil fertility which in turn increase spinach production.