

Effects of Different Rates of Nitrogenous Fertilizer Application on Aphid Infestation and Yields of Kales in Embu County

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Abstract

Kale (*Brassica oleraceae* var *acephala*) is green leafy vegetable rich in vitamins and minerals. Management of nitrogen fertilizer has a direct effect on the aphid infestation of kales. Therefore, this research study has helped to establish appropriate nitrogenous fertilizer rates and application regimes so as to improve kales production and yields hence improving people's nutrition and enhancing food security in Embu County. A field experiment was carried out in University of Embu greenhouse. The research was conducted as from January to March, 2019, to study the effect of different rates of nitrogenous fertilizers application on aphids' infestation and yields of kales leading to low yield. The nitrogenous fertilizer was bought from an agro vet. The rates of nitrogenous fertilizers which include: 0 kg N/ha, 193 kg N/ha, 386 kg N/ha and 772 kg N/ha were evaluated with respect to the population of aphids. Kale seedlings were raised in a nursery and then transplanted to the greenhouse at a spacing of 30cm by 45cm with three replications. Randomized Complete Block Design method was used in the field. Data was collected three weeks after transplanting and introduction of aphids and continued for a period of 5 weeks. Data collected was on aphid population and yields, and was analyzed using ANOVA. Means was separated using LSD at 95% confidence level. From the results obtained, the mean incidence of aphids increased as nitrogen level increased which was significantly different among plants receiving different levels of Nitrogen. High levels of N application (772 kg N/ha) recorded significantly higher incidence of aphids and the same was also observed in mean yield. Therefore, Use of the optimum amounts of N in kale production is important for boosting vegetative growth and reducing its infestation by aphids hence reducing losses.