Control of Yellow Sugarcane Aphids using Entomopathogenic Fungi

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Abstract:

This study aimed at assessing the efficacy of entomopathogenic fungi in controlling the infestation of yellow sugarcane aphids. Experimental trial was established at Kilombero Estate Agriculture, field 520A having variety NCo376, known to be prone to YSA. Experimental plots dimensions were 18 rows spaced at 1.8m and 300m length. Experimental design was Randomized Complete Block Design with five treatments; *Beauveria bassiana* at 0.5 and 1.0 kg/ha, *Lecanicillium lecanii* at 0.5 and 1.0 kg/ha, tested against a negative control where nothing was applied. Treatments were applied using DJI-Agras T30 drone at 120 l/ha spray mix cruising 3 m above the crop every week for 4 consecutive weeks between 28th September and 26th October 2024. Scouting for YSA and beneficial organisms was done before each spray and one week after the last spray. Data collected were analysed using Minitab™ Statistical Software. Results showed that there was no statistical significance between the treatments (p-value 0.135), while the coefficients for the weeks indicated significant decreases in the percent infestation over time at 0.05 significance level. Multiple Regression Model suggested that both treatments and weeks have significant effects on percent infestation, with weeks having a stronger linear effect and both variables having quadratic effects that modify the overall relationship. Entomopathogenic fungi holds a significance promise for managing insect-pest in sugarcane. However, the timing of application plays a big role in increasing efficiency, therefore, application just at the economic threshold level should be advocated, and high humidities should also be considered for continuous fungal growth.