Evaluation of the Efficacy of Botanical Pesticides for Fall Armyworm Control in Maize Production in Kenya

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Abstract

Fall armyworm (FAW) belongs, the group of Noctuidae that causes significant damage to maize, rice sorghum and other crops. FAW has caused highest monetary losses in agriculture worldwide. Since its emergence in Africa in 2016, FAW has spread rapidly and poses a severe threat to the food security and livelihood of millions of smallholder farmers in African continent. *Terminalia brownii* and *Prosopis juliflora, Nicotina tabacum* and *Ajuga spp* leave efficacies were compared to Cypermethrin insecticide for FAW control in maize. A Randomized Complete Block Design (RCBD) with four replications of maize variety "H 624" maize variety were used as a test crop. Ten FAW larvae were artificially introduced into the maize two weeks after planting followed by an application of insecticides for seven weeks after 20% infestation. Analysis of variance showed a significant difference ($p < 0.01$) in maize yields between the controls and all the treatments but not among the four treatments. Cypermethrin *(92%)* extract caused the highest reduction in the leaf damage, followed by *N. tabacum (87.5%), P. juliflora* (75%), *Ajuga spp* (70%) and *T. brownii 52.8 %. T*he highest larval mortality was obtained from Cypermethrin *(80%) and N. tabacum (80%),* followed by *Ajuga spp (60%), P. juliflora (60%) and T. brownii (40%).* It was concluded that the three botanicals' extracts were as effective as control measure for the FAW and recommended as alternative method for FAW control among small scale farmers.

Keywords: *Spodoptera frugiperda*, , ***Efficacy***, ***Maize***, ***Botanicals*** pesticides