

Management of aphids and their vectored diseases on seed potatoes in Kenya using synthetic insecticides, mineral oil and plant extract

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Abstract

This study was conducted in two seasons of 2002 at Tigoni, Central Kenya to determine effectiveness of insecticides; neem extract and mineral oil in managing potato aphids and their associated virus diseases. The treatments were arranged in randomized complete block design (RCBD) with four replications. In each season, the number of aphids in five randomly selected plants per treatment was recorded in situ. Virus symptoms (incidence) were scored and expressed as a percentage to the total plant population per plot. Forty-five days after emergence, 10 plants each from guard rows and inner rows were randomly selected and serologically assayed for Potato Virus Y (PVY) and Potato Leaf Roll Virus (PLRV) using DAS ELISA test. Results showd that three aphid species *Aphis gossypii* (Glover), *Macrosiphum euphorbiae* (Thomas) and *Myzus persicae* (Sulzer) colonized on the variety with *A. gossypii* being the most dominant while *M. persicae* was least. Higher aphid population coincided with the short rains experienced in one of the seasons. Synthetic insecticides (Bifethrin and dimethoate) were the most effective among the treatments in reducing aphid infestation while the neem extract and mineral oil (DC-Tron) had no significant ($P < 0.05$) difference. However, mineral-oil treated plots recorded the lowest PVY incidence while bifenthrin-treated plots had the lowest PLRV incidence. It is suggested that a combination of synthetic insecticides and mineral oil could play a major role in reduction of the aphids and their associated vectors.