

Incidence of Aphid-Transmitted Viruses in Farmer-Based Seed Potato Production in Kenya

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Abstract: Field studies were carried out in farmer-based seed potato production to determine the incidence of potato aphids and potato aphid-transmitted viruses in two potato-producing areas of Kenya. Parameters determined included aphid population, virus disease incidence and tuber yield. Aphid population was monitored on leaves and in water-pan traps. Virus infection was determined based on symptoms and the viruses were identified in tubers sprouts by DAS-ELISA. Tuber yield was determined for plants showing virus symptoms and healthy-looking plants. Five aphid species were identified, with the most abundant being *M. euphorbiae* and *A. gossypii* on leaves and *M. persicae* and *A. gossypii* in water traps. The average aphid population was between 1.4 and 4.2 aphids per three leaves and 4.68 and 9.64 aphids per water pan trap. Farms with higher population of *M. persicae* had higher virus disease incidence. The most prevalent viruses were PVS, PLRV and PVM. Healthy looking plants had a latent infection rate 57.2% compared to 76.6% for symptomatic plants. Virus infection reduced the number and weight of tubers by 74 and 62.7%, respectively. However, virus infection increased the number and weight of the chats grade. The results indicated that aphid infestation and virus disease incidence were higher than the recommended for seed potato production. Therefore, there is need to create awareness among the farmers on aphid and virus symptom recognition and use of clean certified seed potato.

Key words: Aphids, seed potato, tuber yield, viruses
