

LIFE CYCLE, POPULATION BUILDUP AND SURVIVAL OF APHIDS ON STORED POTATO TUBERS

Munyua L.¹, F. Olubayo² and E. Obutho²

¹Kenya Plant Health Inspectorate Service (KEPHIS), P.O. Box 49592-00100, Nairobi, Kenya.

²University of Nairobi, Faculty of Agriculture, Department of Plant Science and Crop Protection, P.O Box 29053 - 00625, Nairobi, Kenya.

*Corresponding author email: l.mbura@gmail.com

Abstract (C2124)

Monitoring of aphid life cycle and population buildup on stored potato tubers aims at contributing towards development of a viable and sustainable aphid and virus management strategy. Potato storage protects potatoes from undesirably high air temperatures and correspondingly low relative humidity and reduces opportunities for pests to aggravate losses. Duration of storage and aphid infestation of potato seed are positively correlated. Certified sprouted Asante and Tigoni variety tubers were used between January and May 2005 to assess life cycle, population buildup and survival of aphids under storage conditions. Treatments were replicated three times with newly borne 2nd instar *Macrosiphum euphorbiae* being introduced onto three hundred sprouted tubers per treatment arranged in Completely Randomised Design (rephrase sentence on design and treatments, if possible). Aphid counts were done for thirty days per treatment with moulting period and the birth rate recorded. Morphological changes, colour, size, length of nymphal cycle was recorded as were temperature and relative humidity. *Macrosiphum euphorbiae* had four different life stages and each life stage showed two significant distinct peaks per variety. *Macrosiphum euphorbiae* life cycle was nine and seven days on Asante and Tigoni varieties, respectively and survived on sprouted tubers as new generations developed. *Macrosiphum euphorbiae* a vector of Potato leaf roll virus multiplies and thrives well on stored potato tubers under temperatures of 18°C to 25°C and high relative humidity of 75% to 90% and low relative humidity of 44% to 55%. Stringent aphid and virus management measures should target reduced seed degeneration since aphid vectors can infect stored sprouted tubers. Expensive results of several years of seed multiplication are rapidly lost if no attention is directed to aphid transmission of severe viruses during storage. Adoption of semi-diffused light stores technology could lead to reduced seed degeneration due to virus infection.

Key words: Asante, Tigoni, Potato varieties, temperature, relative humidity