EFFICACY OF LOCALLY AVAILABLE MATERIALS AND BIO-CONTROL AGENTS IN THE MANAGEMENT OF POTATO TUBER MOTH (PTM) (*Phthorimaea operculella*) (Zeller) IN THE STORE

Koech, A[1]., Olubayo, F[1]., Nderitu, J[1]. , Were, S[1]., and Kilalo, D[1].
Department of Plant Science and Crop Protection, P.O Box 29053- 00625, Nairobi.
*Corresponding author email: **anekoech@yahoo.com**

Abstract (C2036)
Potato (*Solanum tuberosum)* ranks as the second most important food crop after maize playing an important role in national food security and income generation in Kenya. Potato production is limited by pests and diseases with potato tuber moth (PTM) being the most important insect pest in storage. This study was conducted to evaluate locally available materials and bio-pesticides for management of PTM. The experiment was conducted for two seasons and was laid out in a complete randomized design with four replicates. Potato tubers in store were treated with Carbaryl, *Bacillus thuringiensis* (Bt), *Beauvaria bassiana*, rice husks, wood ash, sawdust, sand and with untreated control. Mines caused by larvae were assessed to estimate PTM damage. The average PTM Larval reduction varied; Carbaryl 98.5% emerged as the best in controlling PTM recording the least damage in terms of mines and larval infestation. Bt and rice husks 76% came second followed by wood ash 50% and saw dust 50% all with significant effect on PTM over untreated control ($p \leq 0.001$). Sand did not have a significant effect on PTM. Bt and rice husks are effective alternatives to carbaryl in controlling PTM in store. Sawdust, *Beauvaria bassiana* and wood ash have the potential to manage PTM in store. These results provide alternatives that will enable farmers preserve both seed and ware potato.

Key words: *Bacillus thuringiensis*, Rice husks, Sawdust, *Beauvaria bassiana,* wood ash, PTM larvae, *Solanum tuberosum*.