

RESISTANCE OF POTATO VARIETIES TO Potato Tuber Moth (*Phthorimaea operculella* Zeller)

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Abstract (C2107)

Potato tuber moth (*Phthorimaea operculella* Zeller; PTM) is a major pest of potato (*Solanum tuberosum* L.) in the field and store, causing losses of up to 23-47 %. This study evaluated varietal resistance to tuber moth in potatoes with an aim of contributing to IPM strategies for the management of the pest. Five potato varieties were screened for natural resistance to PTM in the field and in storage. The varieties were grown at Kari Tigoni where actively growing plants were assessed for mines and larvae feeding in the mines. At harvest one thousand two hundred tubers from each variety were sealed in khaki bags and stored at room temperature in a wooden store at KARI-Tigoni. Destructive sampling was done to assess PTM damage, larvae and pupae per sample of ten tubers. There was a significant difference in plants foliage damage in the field during season one ($p \leq 0.01$) but not in season two ($P \geq 0.083$). Damage on tubers in storage for the two seasons was significantly different ($p \leq 0.007$). Desiree had the least PTM damage both in the field and store. Kihoro had the highest damage both in the field and storage. Yields were significantly different ($p \leq 0.018$). Desiree had the lowest yields in the two seasons whereas Tigoni had the highest yields in season one and Kenya Karibu had the highest yields in season two. Desiree showed resistance to PTM but has a disadvantage in yield while Kihoro was susceptible to PTM. This information can be used to feed into breeding programs to improve for pest resistance which can be used as an IPM strategy for management of the pest.

Key words: Potato, *Phthorimaea operculella*, *Solanum tuberosum*, tuber moth, resistance.