

Control of Potato Tuber Moth (*Phthorimaea operculella*) using Integrated Pest Management in Kenya

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ABSTRACT

Potato tuber moth is the most important pest of Irish potatoes in the world. The most economically important damage occurs predominantly through the PTM larvae's feeding on the tuber. The larvae excavate tunnels throughout the potato tuber, often leaving mounds of fross near the tunnel entrances. The research was initiated with the aim of finding varieties that can be tolerant to PTM. Experiments were laid out in randomized complete block design with four replicates, and randomized complete block design with three replicates in split arrangement. At 112 days after emergence plant height, number of tubers, biomass, and harvest index, was measured. Results indicated that Kenya Karibu (116.5) was the variety with the highest plant height, while Asante had the lowest (80.75), Komesha had the highest number of tubers (29.75), Kenya Mavuno had the highest biomass (1.493), and the least was Dutch Robjyn (0.892). The highest harvest index was in Dutch Robjyn (0.83) Kenya Karibu had the lowest (0.575). At 160 days, measurements on; the weight of infested tubers, results showed that the most susceptible variety was Kenya Mavuno. Zangi, a farmer preferred variety is the most tolerant to PTM. In terms of earthing up to control PTM it was evident from the results that earthing up reduced the PTM incidences and also improved the marketable yields and hence economical returns to the farmers. There were significant differences among the varieties in terms of marketable weight. The second earthing up significantly reduced the unmarketable tubers, green tubers, rotten tubers, and increased the total number of tubers per variety. The third earthing up had the highest number of ware potato tubers; Earthing up was found to reduce the incidences of rotting, improving on the incidences of PTM.