Tropentag, September 16-18, 2026, hybrid conference

"Towards multi-functional agro-ecosystems
promoting climate resilient futures"

Drivers of push-pull pest management adoption among maize farmers in East Africa: A logit analysis

Joseph Mutungati Mugendi[1], John Mburu[1], Lucy Karega Njeru[1], Fredah Maina[2], Alice Murage[2], Beatrice Muriithi[3]

[1] *University of Nairobi, Dept. of Agricultural Economics, Kenya*
[2] *Kenya Agricultural & Livestock Research Organization, Kenya*
[3] *International Centre of Insect Physiology and Ecology (icipe), Social Science and Impact Assessment, Kenya*

Abstract

The recurrent incidences of pest and diseases and predominance of soil fertility depletion, exacerbated by the prevailing impacts of climate change calls for ecological integrated pest management approaches. The push-pull integrated pest management (PPIPM) technology offers a sustainable, cost-friendly alternative to pesticides for controlling fall armyworm, Stemborer and *Striga* weed constraints in maize production.

This study used Logit regression to analyse the drivers of plot-level adoption of PPIPM amongst 740 smallholder maize households operating on 1680 maize plots across both Kenya and Uganda obtained using multistage random sampling. The pooled results indicated that male gender, perceived technology benefits, access to trainings, group membership, land size under PPT, access to credit and distance to input stockiest positively influenced adoption of PPT, while age of the farmer, and education had a negative effect. However, in Kenya PPT adoption was influenced by access to training, land size and perceived technology benefits while in Uganda, PPIPM was significantly influenced by age of the farmer, male gender, perceived technology benefits, perceived technology effectiveness, access to training, group membership, land size as well as distance to input stockiest. Notably, farmer's access to training emerged as a crucial driver for increasing the likelihood of adoption of PPT in the maize farming plots with its effect being more in Uganda compared to Kenya. Similarly, the perceived PPT benefits had higher influence in Uganda compared to Kenya.

The study therefore concludes that perceived technology attributes and training are crucial drivers of technology adoption. The findings give compelling recommendations to policymakers to enhance number of training on PPT giving emphasis on the perceived technology benefits while targeting young farmers in groups dealing with agricultural activities disaggregated by male and female gender respectively.

Keywords: Adoption, integrated pest management

Contact Address: Joseph Mutungati Mugendi, University of Nairobi, Department of Agricultural Economics, 29053, 00625 Kangemi, Kenya, e-mail: josephmugendi0148@gmail.com