UPSCALE

Performance of the third-generation push-pull against striga weed, stemborers and fall armyworm

To improve the resilience of the climate-smart push-pull technology (CSPPT) against climate change, we tested more adapted companion plants; Brachiaria cv. Xaraes and Desmodium uncinatum for their suitability in controlling maize pests and striga weed in a multisite comparison study in western Kenya. A new version of PPT, termed 'third generation PPT' (3GPPT) equally suppressed striga weed together with the recently emerged fall armyworm, just as much as the climate-smart PPT, and even much better than farmers` own practices. Control of stemborers was marginally poorer within the 3GPPT compared to the CSPPT, but higher than plots involving farmers own practices. In post-season evaluations, farmers rated the 3GPPT highly this preference was based on additional superior traits of mite resistance, higher biomass yield and drought tolerance in the fodder grass Xaraes and seed production. Desmodium incanum was preferred for improved drought tolerance and seed production, thereby addressing some of the major constraints within previous versions of the PPT. The 3GPPT therefore provides competitive advantages that improve chances for upscaling the PPT even to farmers within regions of limited rainfall.

Authors: Frank Chidawanyika (*icipe*)
Contact: fchidawanyika@icipe.org
Publisher: International Centre of Insect Physiology and Ecology (@*icipe*)
Date: April 2022
UPSCALE: Upscaling the benefits of push-pull technology for
sustainable agricultural intensification in East Africa.
Research and Innovation project 2020-2025.
Social Media: LinkedIn [UPSCALE] & Twitter [@upscale_h2020]

Further information
Cheruiyot, D., Chidawanyika, F., Midega, C. A. O., Pittchar, J. O., Pickett, J. A., & Khan, Z. R. (2021). Field evaluation of a new third generation push-pull technology for control of striga weed, stemborers, and fall armyworm in western Kenya. Experimental Agriculture, 57(5), 301-315. https://doi.org/10.1017/s0014479721000260