Development of biological control measures for management of striga weed in sorghum and screening sorghum for resistance to striga

Henry Nzioki[1] (silanzioki@gmail.com), Eliud Ngugi[2], Rachael Kisilu[1], David Sands[3], Peter Lueth[4], Claire Sands Baker[4], Simon Omondi[5]

[1] *CROPS, KALRO, Nairobi, Kenya* ; [2] *Department of Plant Science and Crop Protection, University of Nairobi, Nairobi, Kenya* ; [3] *Department of Plant Science and Plant Pathology, Montana State University, Bozeman, United States* ; [4] *Commercialization, Toothpick Company Limited, Kakamega, Kenya* ; [5] *CROPS, KALRO, N, Kenya*

Striga hermonthica is a major parasitic weed of sorghum and other cereals in western Kenya. The current striga management practices comprising mainly of striga resistant and striga tolerant sorghum varieties are not completely effective. Resistant varieties are not long lived as resistance breaks down due to presence of striga biotypes and climate change. Integrated management of striga comprising among others resistant and tolerant cultivars and biological control could be an effective means of managing striga in sorghum in face of climate change. Kichawi Kill™ is a striga bioherbicide recently registered in Kenya for management of striga weed in maize. The active ingredient is a native virulence enhanced *Fusarium oxysporium* sp. *strigae*, a specific pathogen of striga weed. The objective of this study was to evaluate Kichawi Kill for control of striga weed in striga resistant, striga tolerant and striga susceptible varieties, and screen forage, fodder and grain sorghum genotypes for resistance to striga. Field trials were conducted at Alupe in Western Kenya during long rains, 2022. Data on striga and agronomic maize parameters was taken at 6, 8, 10 and 12 week after planting. Results showed that Kichawi Kill significantly reduced emerged striga and enhanced grain yield in resistant, susceptible and tolerant varieties in treated plots compared to untreated plots. There were no significant differences in striga parameters in forage and fodder sorghum genotypes. Significant differences were noted in emerged striga plants, number of heads and grain yield in grain sorghum genotypes, with previously confirmed resistant, tolerant and susceptible varieties remaining resistant, tolerant and susceptible respectively. Future studies should focus on studies on compatibility of Kichawi Kill with cultivated sorghum varieties, and screening of more sorghum genotypes for resistance to striga in order to continuously develop up to date integrated striga weed management technologies which keep up with climate change.

References:

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