

COMPARATIVE EFFICIENCY OF GLYPHOSATE AND HAND WEEDING ON WEED IN MAIZE PRODUCTION

Ita, B.N¹, Michieka, R².W, Ariga, E.S² and Muiru, W.M².

1 Kenya Agricultural Research Institute, KARI, NARL, BOX 14733,00800 NRB

2 Department of Plant Science and Crop Protection, University of Nairobi

*Corresponding author email: alfroita@gmail.com

Abstract

Weed management practices used by small scale farmers determine maize productivity. This study was conducted in Kigumo district during the long and short rains in 2010 to compare effectiveness of glyphosate and hand weeding on weed management in maize (*Zea mays* L.). Treatments were two maize varieties DUMA SC41, DK8031 and three weed management practices, glyphosate (zero tillage), hand weeding (conventional tillage) and no tillage (control). Plots sizes were 5 x 3 m laid out in a randomized complete block design, replicated three times with maize spaced at 75x30 cm. Glyphosate plots were sprayed five days prior to planting, hand weeding and no tillage plots were dug and leveled using jembes. An area of 3 x1.5m in each plot was used for data collection, weed count was done five times on monthly interval at 3 weeks after planting (3WAP), 7WAP,11WAP, 15WAP and 19WAP. Biomass dry weight was achieved by drying the weeds in an oven at 60 0 C for 72 hours. Gen stat computer software package was used for data analysis, effects of weed management practices on weed counts, biomass, maize grain yield were assessed by ANOVA, treatments means were separated by Student- Newman Keuls Test. There was no significant difference at $P < 0.05$ in weed count between the two weed management practices , hand weeding and glyphosate. There was no significant differences between the two weed management practices in biomass, maize grain yield at $P < 0.05$, but the two maize varieties significantly differed in grain yield. Although there was no significant differences between the two weed management practices in biomass and maize grain yield, glyphosate had lower weed biomass and higher maize grain yield than hand weeding, therefore a better weed management practice.

Key words: Small scale farmers, weed management, maize productivity

STUDIES