

C2129. EFFICACY OF NICOSULFURON IN THE CONTROL OF WEEDS IN MAIZE

Ariga¹, E.S.; R. Narla¹, P. Amuyunzu², Kirimi², R. Nyankanga¹ and R.W Michieka¹

¹Department of Plant Science and Crop Protection, University of Nairobi, P.O. Box 29053-00625, Nairobi, Kenya

²Twiga Chemicals Industries Ltd., Division of Agriculture, P.O. Box 30172-0010, Nairobi, Kenya.

Corresponding author: esariga@yahoo.co.uk

Abstract

Maize is the main staple food for majority of Kenyans. Weeds are the major constraint in maize production. In search of an effective weed control method, a trial was carried out at the University of Nairobi farm, Kabete, to determine efficacy of Nicosulfuron in weed control in maize. Old and new stock of nicosulfuron at 100 and 125 g/ha with or without a surfactant (Agral 90 at 0.2% v/v) was used. These treatments were compared with post directed paraquat at 0.5kg/ha (farmer's practice) and weed free and no weeding controls. Results revealed that both old and new stock of nicosulfuron at 100 kg/ha⁻¹, applied without surfactant, were equally effective in controlling weeds across weed species. The most difficult weeds to control in both cases were *Cyperus rotundus* and *esculentus*. The herbicide prevented weed regeneration as shown by low weed count, by species, three and a half months after application. Paraquat controlled *Amaranthus hybridus* and *Galinsoga parviflora*. The rest of the weeds were scorched up to four weeks after application then the weeds recovered and population increased till senescence. Old stock of nicosulfuron was slightly more toxic than new stock at the same rate in both seasons. Increasing the rate of nicosulfuron from 100 g with Agral to 125g/ha with Agral significantly increased its toxicity to maize in season two ($p < 0.05$) but not in season one. Treatments did not have significant effect on grain yield. Yield ranged from 3.0 to 4.6 t/ha in season 1 and 2.5 to 4.4 t/ha in season 2. The presence of weeds in maize throughout the second season reduced maize yield by 36 percent compared to weed free throughout the season. Nicosulfuron is effective in controlling broadleaf, grasses and sedges in maize at the recommended rate of 100g/ha with Agral 90 0.2% v/v.

Key words: Efficacy, nicosulfuron, weed control, phytotoxicity, maize