

Efficacy of some selective herbicides against broad leaved weeds of wheat crop grown under moisture deficit conditions of Pakistan

Muhammad Asad¹, Muhammad Mudassar², Zahid Mahmood³ and Muhammad Rasheed¹

¹ Department of Agronomy, PMAS Arid Agriculture University Rawalpindi, Pakistan

² Department of Environmental Economics, Pakistan Institute of Developmental Economics, Islamabad, Pakistan

³ Wheat Wide Crosses Program, National Agricultural Research Centre, Islamabad, Pakistan

Summary Herbicides are mostly used to control weeds in irrigated areas, but neglected in rainfed areas due to uncertain and erratic rainfall patterns. A field experiment was conducted to investigate the efficacy of some herbicides for the control of broad leaved weeds in wheat crop during winter 2014–2015. Four herbicides, i.e., Ally Max (metsulfuron methyl + Tribenuron methyl), Lihua (chlorsulfuron), Wheat Star (chlorpyrifos + carfentrazone ethyl + tribenuron methyl) and Buctril Super 60% EC (bromoxynil + MCPA) were included in the study. Three different doses of each herbicide were used during the experiments. A non-treated control (weedy check) and hand weeded plots were also included in the study. All tested doses of the herbicides provided good control of broad leaved weeds by significantly decreasing their density. The results indicated that the hand weeding, with

minimum weed counts (14 m^{-2}) and dry weight (24.5 gm^{-2}) resulted in the highest weed control efficiency (77.85%) and mortality (81.77%). Among herbicides, Wheat Star with recommended dose observed the lowest weed counts (17 m^{-2}), dry weight (16.5 g m^{-2}) along with maximum weed control efficiency (74.25%) and mortality (63.37%). It was followed by Buctril Super with recommended dose resulting in weed counts (20.2 m^{-2}), dry weight (25 g m^{-2}) and weed index (-0.68%). Based on these results hand weeding can be recommended for small landholders having sufficient available family labour, while Wheat Star and Buctril Super at the recommended dose could be the best weed control option in areas where wheat fields are largely infested by broad leaved weeds.

Keywords Efficacy, broad leaved weeds, herbicides, moisture deficiency.