

Efficacy of some new herbicides on both grassy and broadleaf weeds in wheat at Peshawar, Pakistan

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Summary Field studies were conducted at NWFP Agricultural University, Peshawar during winter 2002–03 to investigate the effectiveness of different herbicides including new molecules tribenuron-methyl and thifensulfuron-methyl against grasses and broadleaf weeds. The experiment was laid out in a randomised complete block design with four replications. The experiment comprised 11 herbicides and a weedy check.

The herbicidal treatments were post-emergence applications of Rocket 15 WDG (thifensulfuron-methyl) at 0.037, Rocket 75 WDG (thifensulfuron-methyl) at 0.05, Tribenuron-methyl 50 WDG (tribenuron-methyl) at 0.05, Logran Extra 64 WDG (triasulfuron + terbutryn) at 0.15, Buctril-M 40 EC (bromoxynil + MCPA) at 0.45, Isoproturon 50 WP (isoproturon) at 0.01, Affinity 50 WDG (carfentrazone ethyl ester) at 0.013, Agritox 50 DF (MCPA) at 0.49, and Aim 40 WP (chlorfluazuron) at 0.96 kg a.i. ha⁻¹.

Ghaznavi-98 wheat variety was planted during the third week of October 2002 in plots of 5 × 1.5 m in size. Data were recorded on the weed density, number of spikes m⁻², number of grains spike⁻¹ and grain yield

(t ha⁻¹). The weeds infesting the experiment were: wild oats (*Avena fatua* L.), littleseed canarygrass (*Phalaris minor* Retz.), annual bluegrass (*Poa annua* L.), curly dock (*Rumex crispus* L.), *Ammi visnaga* (L.) Lam., fumitory (*Fumaria officinalis* L.), field bindweed (*Convolvulus arvensis* L.), milk thistle (*Silybum marianum* (L.) Gaertn.), and Indian sweetclover (*Melilotus indica* (L.) All).

The broad spectrum herbicide Affinity proved to be the most effective in controlling weeds, with only 18.2 weeds m⁻² as compared with 250.5 weeds m⁻² in weedy check plots. The density of weeds in this top scoring treatment was however, statistically comparable with Buctril-M and Logran Extra, demonstrating the preponderance of broadleaf weeds in the experiment. The highest grain yields of 4.133, 3.866 and 3.599 t ha⁻¹ were also recorded in Affinity 50 WDG, Buctril-M 40EC and Logran Extra 64 WDG respectively, as compared with only 2.133 t ha⁻¹ in the weedy check. It was concluded that the newly introduced sulfonylurea herbicides tribenuron-methyl and thifensulfuron-methyl were less effective in increasing grain yield than currently available herbicides.