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

Intiaz Khan, Gul Hassan, Muhammad Ishfaq Khan and Ijaz Ahmad Khan
Department of Weed Science, North West Frontier Province Agricultural University,
Peshawar 25130, Pakistan

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.