

Liberty-resistant Canola Herbicide Trial, Carrington, 2000.

B. Henson, G. Endres and J. Schneider

The experiment was conducted on a minimum-till field and Heimdahl-Emrick loam soil with 6.2 pH and 3.3% organic matter at the NDSU Carrington Research Extension Center. The experimental design was a randomized complete block with three replicates. Herbicide treatments were applied to 5 by 25 ft plots with a hand-boom or hooded bicycle-wheel plot sprayer. PPI treatments were applied at 18.4 gal/A at 35 psi through 8002 flat fan nozzles on May 1 with 69 °F, 23% RH, 90% clear sky, and 8 mph wind on a dry soil surface and incorporated with a roto-tiller at a 3- to 4-inch depth. ‘InVigor 2573’ canola was planted at 700,000 PLS/A on May 3 in 7-inch rows at a 0.5- to 1-inch depth. POST treatments were applied at 9.2 gal/A at 35 psi through 8001 flat fan nozzles. POSTA treatments were applied on June 2 with 50 °F, 77% RH, clear sky, and 8 mph wind to 3-leaf canola, 3- to 4-leaf foxtail, 1- inch tall to flowering wild mustard, and other annual broadleaf weeds were 1- to 3-inches tall. POSTB treatments were applied on June 16 with 51 °F, 74% RH, 95% cloudy sky, and 11 mph wind to 6- to 8-leaf canola, 3- to 6-inch tall yellow and green foxtail, 6- to 15-inch tall common lambsquarters, 10- to 15-inch tall horseweed, 12-inch tall kochia, 1- to 4-inch tall redroot and prostrate pigweed, 6-inch tall Russian thistle, 2- to 15-inch tall wild buckwheat, and flowering wild mustard.

Visual crop injury was absent or negligible with all herbicide treatments (data not shown). Few differences in weed control were evident among herbicide treatments with the first and second visual evaluations (Table).

The third evaluation (canola at physiological maturity) indicated that control of all weed species present was good to excellent (84 to 99%) with treatments that included trifluralin (Table). Weed control generally was similar between application timings of glufosinate, but an advantage existed with early application of glufosinate for Russian thistle control. Sequential applications of glufosinate generally provided similar weed control as single applications. Glufosinate at 0.44 lb/A generally did not improve weed control compared to glufosinate at 0.36 lb/A.

Treatment ¹	Herbicide		Weed control							
	Rate lb/A	Timing	Fota ²	Colq	Howe	KOCZ	Piwe ³	Ruth	Wibw	Wimu
Evaluation 1 (10 to 12 d after last POST herbicide application):										
Untreated			0	0	0	0	0	0	0	0
Trif/Gluf	0.75/0.36	PPI/POSTA	99	99	99	99	99	99	99	97
Gluf/Gluf	0.26/0.26	POSTA/B	99	79	75	99	99	98	76	99
Qufp-P+Gluf	0.04+0.36	POSTA	83	75	91	91	95	90	81	90
Gluf	0.44	POSTB	93	73	75	99	99	93	81	99
Qufp-P+Gluf	0.03+0.36	POSTB	98	96	88	98	99	91	94	99
Seth+Gluf	0.04+0.36	POSTB	66	50	73	96	99	62	63	99
Trif/Seth	0.75/0.36	PPI/POSTA	91	97	98	98	99	95	99	57
Seth+Clpy	0.10+0.19	POSTB	96	35	88	98	98	0	68	98
LSD (0.05)			34	38	37	8	3	14	36	10

Evaluation 2 (26 to 28 d after last POST herbicide application):

Untreated			0	0	0	0	0	0	0	0
Trif/Gluf	0.75/0.36	PPI/POSTA	99	99	99	99	99	99	99	99
Gluf/Gluf	0.26/0.26	POSTA/B	99	79	75	99	99	98	76	99
Qufp-P+Gluf	0.04+0.36	POSTA	86	95	77	98	99	94	77	96
Gluf	0.44	POSTB	88	76	76	99	96	96	66	99
Qufp-P+Gluf	0.03+0.36	POSTB	96	91	86	86	98	94	88	99
Seth+Gluf	0.04+0.36	POSTB	89	40	60	79	99	79	62	99
Trif/Seth	0.75/0.36	PPI/POSTA	98	96	99	99	99	96	99	55
Seth+Clpy	0.10+0.19	POSTB	88	48	86	88	96	61	57	99
<i>LSD (0.05)</i>			18	31	34	26	4	23	31	29

Evaluation 3 (canola at physiological maturity):

Untreated			0	0	0	0	0	0	0
Trif/Gluf	0.75/0.36	PPI/POSTA	98	95	99	99	99	99	89
Gluf/Gluf	0.26/0.26	POSTA/B	85	83	72	89	95	92	68
Qufp-P+Gluf	0.04+0.36	POSTA	70	80	76	88	95	99	72
Gluf	0.44	POSTB	84	73	77	88	93	78	66
Qufp-P+Gluf	0.03+0.36	POSTB	84	94	92	99	94	84	80
Seth+Gluf	0.04+0.36	POSTB	79	66	55	77	97	67	58
Trif/Seth	0.75/0.36	PPI/POSTA	99	87	99	99	97	88	84
Seth+Clpy	0.10+0.19	POSTB	81	65	98	72	92	71	78
<i>LSD (0.05)</i>			13	13	32	18	8	11	13

¹Glufosinate treatments include AMS at 3 lb/A; Sethoxydim treatments include MSO (Scoil) at 2.5% v/v.

²Fota=yellow and green foxtail.

³Piwe=Redroot and prostrate pigweed.