Weed control and crop response in glyphosate-resistant canola. (Hendrickson and Valenti) The study was conducted at the NDSU Carrington Research Extension Center on a loam soil with a 6.7 pH and 3.3% organic matter. Glyphosate-resistant canola 'DKL223' was seeded May 3, 2002 into 7-inch rows at 5 lb/A. Individual plots were 10 ft by 25 ft and arranged in a randomized complete block design with three replications. Herbicide treatments were applied with a CO_2 pressurized hand-held plot sprayer at 10 gal/A and 26 psi through XR80015 flat fan nozzles. EPOST herbicides were applied on May 31 with 75º F, 24% RH, 0% cloud cover, 7 mph wind, and 64º F soil temperature to 2- to 3-leaf canola, emerging redroot pigweed, 1- to 2-inch common lambsquarters, and 2-leaf green and yellow foxtail. MPOST herbicides were applied on June 7 with 56º F, 49% RH, 100% cloud cover, 9 mph wind, and 64º F soil temperature to 2.5- to 4-leaf canola, 0.5-inch redroot pigweed, 2- to 4- inch common lambsquarters, and 3-leaf green and yellow foxtail. LPOST herbicides were applied on June 17 with 69º F, 66% RH, 0% cloud cover, 9 mph wind, and 66º F soil temperature to 4-leaf to bolting canola, 2- to 4-inch redroot pigweed, 3- to 6-inch common lambsquarters, and 5-leaf green and yellow foxtail. The canola was harvested on August 5.

Roundup Ultramax was applied EPOST at 0.56 lb ae/A but was deleted from analysis due to a misapplication. The EPOST and MPOST applications provided 85 to 100% weed control when evaluated 6/11 and 6/20 (Table). The LPOST application was required to control later emerging weeds. None of the treatments caused visible crop injury (data not shown). Canola seed yield was similar among treatments, likely due to low weed densities and low seed yield. Oil content was greater in the treated plots when compared to the untreated check.

Table. Weed control and crop response in glyphosate-resistant canola.

			Weed control												Canola	
			Redroot pigweed				Common lambsquarters				SETSS[c]				Oil	Seed
Treatment[a]	Rate[b]	Timing	6/11	6/20	7/1	7/17	6/11	6/20	7/1	7/17	6/11	6/20	7/1	7/17	content	yield
	lb/A		%												%	lb/A
Roundup Ultramax	0.375	EPOST	100	100	72	70	100	98	82	98	100	85	30	65	39	895
Roundup Ultramax	0.375	MPOST	-	99	72	75	-	98	72	77	-	94	38	70	38	1002
Roundup Ultramax	0.56	MPOST	-	98	85	82	-	97	88	90	-	98	78	78	41	1160
Glyphomax Plus+ Stinger	0.375+ 0.089	MPOST	-	100	87	92	-	99	93	98	-	100	45	70	40	1280
Roundup Ultramax	0.375	LPOST	-	-	100	98	-	-	98	100	-	-	88	83	42	1194
Roundup Ultramax	0.56	LPOST	-	-	100	98	-	-	100	100	-	-	94	88	43	1267
Roundup Ultramax / Roundup Ultramax	0.375 / 0.375	EPOST / LPOST	100	100	100	99	100	100	100	100	100	85	90	93	42	1030
Untreated check	0	-		0	0	0		0	0	0		0	0	0	29	937
LSD (P=.05)			0	2	17	19	0	5	17	11	0	6	46	25	7	NS

[a]All treatments included ammonium sulfate at 16.7 lb/100 gal.

[b]Roundup Ultramax and Glyphomax Plus=lb ae/A, Stinger=lb ai/A.

[c]SETSS=green and yellow foxtail.