Weed control and soybean response to glyphosate plus foliar supplements (project 17), Carrington, 2008.
(Gregory Endres)

A field study was conducted at the NDSU Carrington Research Extension Center in cooperation with Loveland Products to examine weed control and soybean performance with glyphosate plus foliar supplements. Experimental design was a randomized complete block with three replications. The previous crop was spring wheat. The conventional-till trial was established on a Heimdal Emrick loam soil with 89 lb/A (0-24") nitrate-N, 15 ppm P, 231 ppm K, 8 lb/A (0-24") Cl (very low), 68 lb/A (0-24") S, 0.4 ppm B (very low), 0.72 ppm Zn, 64.6 ppm Zn, 12.4 ppm Mn, 0.68 ppm Cu, 425 ppm Mg, 2182 ppm Ca, 0% carbonate, 0.2 mmho/cm (0-6") and 0.26 mmho/cm (6-24") soluble salts, 15.1 meq CEC, 2.8% organic matter and 5.9 pH. Inoculated 'RG600RR' was planted in 7-inch rows at 200,000 seeds/A on May 19. Treatments were applied with a CO_2-pressurized hand-boom sprayer delivering 10 gal/A at 35 psi with 8001 flat-fan nozzles. The V2 soybean growth stage treatments were applied on July 1 with 83 F, 52% RH, 90% clear sky, and 9 mph wind to 4- to 5-leaf yellow and green foxtail,1- to -inch tall common lambsquarters, wild buckwheat, and prostrate and redroot pigweed. Weed density generally was medium to high with all weeds except wild buckwheat. R3 soybean growth stage treatments were applied on July 31 with 76 F, 72% RH, 40% clear sky and 9 mph wind. The trial was harvested with a plot combine on October 2.

No crop response was observed from herbicide treatments and physiological maturity was similar among treatments (data not shown). Soybean seed yield was similar among treatments (Table). Common lambsquarters control was excellent (93-96%), and foxtail and pigweed control were good (83-88%) while wild buckwheat control was fair (68-78%) when evaluated one week after application of the V2 treatments. Foxtail, common lambsquarters, and pigweed control were excellent (96-98%) about three weeks after the application of the V2 treatments, while wild buckwheat control ranged from 77-86%. The second herbicide application at R2 provided excellent control of all weeds when evaluated on August 14.

Table.

Treatment						Weed control (%)[1]											
No.	Name	Rate	Unit	Timing	Yield	7/8				7/22				8/14			
					bu/A	fota	colq	piwe	wibw	fota	colq	piwe	wibw	fota	colq	piwe	wibw
1	Mad Dog	32	fl oz/a	V2	16.6	85	94	87	73	98	97	98	77	97	96	99	88
	LI 177	2	fl oz/a	V2													
	Choice Weather Master	0.5	%v/v	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
2	LI 6266	32	fl oz/a	V2	20.1	84	95	84	75	98	97	98	78	98	98	99	91
	Choice Weather Master	0.5	fl oz/a	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
3	Mad Dog Plus	32	fl oz/a	V2	18.0	88	96	84	68	98	98	98	81	97	98	99	86
	LI 177	2	fl oz/a	V2													
	Choice Weather Master	0.5	%v/v	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
4	LI 6267	32	fl oz/a	V2	19.9	85	96	85	73	98	98	98	83	97	99	99	88
	Choice Weather Master	0.5	%v/v	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
5	Mad Dog	32	fl oz/a	V2	20.3	85	95	83	75	97	98	98	86	97	98	99	91
	Choice Weather Master	0.5	%v/v	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
6	Mad Dog Plus	32	fl oz/a	V2	18.9	87	96	86	75	97	98	98	82	98	98	98	87
	Choice Weather Master	0.5	%v/v	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
7	Mad Dog Plus	32	fl oz/a	V2	19.2	84	93	84	78	97	98	96	81	97	97	98	88
	LI 6268	16	fl oz/a	V2													
	Choice Weather Master	0.5	%v/v	V2													
	LI 700	0.25	%v/v	V2													
	Makaze	32	fl oz/a	R2													
	Choice Weather Master	0.5	%v/v	R2													
C.V. (%)					10.1	3.1	2.0	6.5	7.1	0.6	0.9	1.1	4.5	1.1	0.8	1.1	7.7
LSD (0.05)					NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1	NS	NS

[1]fota=yellow and green foxtail; colq=common lambsquarters; piwe=prostrate and redroot pigweed; wibw=wild buckwheat.