

Timing of weed control in soybean, Carrington, 2013. Greg Endres and Mike Ostlie. The study is being conducted to build a North Dakota database documenting response of soybean to initial timing of weed control. Experimental design was a randomized complete block with four replicates. The field trial was conducted at the NDSU Carrington Research Extension Center. 'DSR0404' Roundup Ready inoculated soybean was planted at 200,000 seeds/A in 15-inch rows on May 28. Herbicides were applied with a hand-held boom sprayer delivering 14 gal/A at 35 psi through 8001 flat fan nozzles to the center 6.7 ft of 10- by 25-ft plots. PRE Zidua at 4 oz wt/A plus metribuzin at 0.33 lb/A was applied on May 28 with 72 °F, 50% RH, 10 mph wind on a dry soil surface. Rain totaled 0.8 inches one wk after application of PRE herbicides. Table 1 provides POST application details for glyphosate (Roundup Powermax at 32 fl oz/A plus Class Act NG at 2.5% v/v). The trial was harvested for grain yield on October 1.

Table 1. POST glyphosate application details for soybean response to timing of weed control, Carrington, 2013.										
Application date	POST treatment	Soybean <sup>1</sup>		Average weed height	Weed density <sup>2</sup>		Environment			
		Stage	Plant height		Grass	Broad-leaf	Air temp.	RH	Wind speed	Clouds
			inches	inches	square foot		F	%	MPH	%
21-Jun	A	V1	x	2	16	19	74	71	9	100
3-Jul	B	V3	x	6	9	17	75	43	7	0
10-Jul	C	V4-5	x	10	x	x	70	71	3	0
<sup>1</sup> Soybean density on June 21 averaged 275,300 plants/A.										
<sup>2</sup> Grass weeds include green and yellow foxtail; Broadleaf weeds include common lambsquarters, common purslane, kochia, redroot and prostrate pigweed, shephardspurse and wild buckwheat.										

Untreated check plant height was reduced compared to treatments with weed control (Table 2). Seed yield tended to be higher with initial weed control at planting compared to POST treatments and the untreated check.

Table 2. Soybean response to timing of weed control, Carrington, 2013.								
Treatment		Plant height	Physiological maturity	Seed yield	Test weight	Seeds/lb	Oil	Protein
Number	Description <sup>1</sup>	inches	Jday	bu/A	lb/bu		%	
1	untreated	19	254	22.9	56.2	3376	17.5	33.2
2	PRE/POSTB	22	255	32.8	56.3	3270	16.9	33.9
3	POSTA	25	255	27.4	56.4	3289	16.8	34.3
4	POSTB	22	255	29.8	56.4	3304	17.3	33.7
5	POSTC	22	255	22.7	56.3	3215	17.5	33.1
C.V. (%)		7.2	0.4	45.8	0.8	2.7	2.0	2.5
LSD (0.05)		2	NS	NS	NS	NS	0.5	NS
<sup>1</sup> PPI=Sharpen at 1 fl oz/A plus Zidua at 2.5 oz wt/A;POSTA-D=Roundup Powermax at 22 fl oz/A plus Class Act NG at 2.5% v/v.								