

2009 Burndown and residual control with sulfentrazone-based products (L0941).

A field study was initiated near Lincoln, Nebraska to evaluate sulfentrazone-based products for burndown of winter annual weeds and residual control of summer annual weeds in no-till soybean. The experimental design was a randomized complete block with three replications. Plots were 10 feet wide by 30 feet long and located on a Sharpesburg silty clay loam soil with an organic matter of 3.1 % and a pH of 6.6. Asgrow '2903' soybeans were planted on May 11. Soybeans emerged on May 22. Preplant herbicides were applied on April 23, and late post herbicides on June 26. Herbicides were applied with a tractor mounted sprayer calibrated to deliver 15 gallons per acre at 40 psi with Teejet 110015 AIXR nozzles. The environmental conditions at the time of spraying are given in Table 1. Rainfall received April 13 – July 3 is listed in Table 2.

Major weeds consisted of henbit (*Lamium amplexicaule*), tansy mustard (*Descurainia pinnata*), marestail (*Conyza Canadensis*), velvetleaf (*Abuthilon theophrasti*), sunflower (*Helianthus annuus*), and Palmer amaranth (*Amaranthus palmeri*) species at average densities of 10, 5, 10, 2 and 3 plants/ft². Weed densities were taken at the time of spraying in the center of the plot, two ft² samples were taken. Plots were evaluated using visual ratings.

Table 1. Environmental conditions at the Time of Herbicide Application.

Date	Air Temperature (F)	Soil Temperature At 4 in (F)	Humidity	Wind Speed & direction (mph)	Time of Day	Application Timing	Weed Heights inches					
							LAMAM	DESPI	CONCA	ABUTH	HELAN	AMAPA
April 23	69	56	38	4 N	11:00 am	PP	3	5	3	0	0	0
June 26	84	83	65	10 ESE	10:00 am	LPOST			12	5	5	3

Table 2. Rainfall received April 13 – July 3.

Date	Amount (in)	Date	Amount (in)
April 13	0.09	June 12	0.47
April 18	0.34	June 15	0.24
April 26	0.54	June 16	0.11
April 27	0.05	June 19	0.71
May 6	0.11	June 20	0.27
May 8	0.08	June 21	0.23
May 12	0.14	June 22	0.73
May 13	0.39	July 3	0.88
May 27	0.68		
June 1	0.27		
June 2	0.21		
June 6	1.14		
June 7	0.83		
June 8	0.06		

Table 3. Burndown and residual control with sulfentrazone-based products

Treatment	Rate	Unit	Application Timing	Velvetf	Sunflwr	Marestl	Velvetf	Sunflwr	Marestl	Velvetf	Sunflwr	Marestl	YIELD
				CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
				%	%	%	%	%	%	%	%		
				6/8/2009	6/8/2009	6/8/2009	6/25/2009	6/25/2009	6/25/2009	8/10/2009	8/10/2009	8/10/2009	bu/acre
Untreated				0	0	0	0	0	0	0	0	33	10.3
LSD (P=.05)				4.87	6.3	3.3	7.13	6.71	5.79	2.62	1.83	27.91	12.21