2009 Burndown and residual herbicides for no-till glyphosate-resistant soybean (L0934).

A field study was initiated near Lincoln, Nebraska to evaluate commercial standards 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 four 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' was planted on May 11. Soybeans emerged on May 22. Preplant herbicides were applied on May 1, and midpost herbicides on June 18. 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 26 – May 11 and June 8 – June 28 is listed in Table 2.

Soybeans emerged on May 22. Major weeds consisted of henbit (Lamium amplexicaule), tansy mustard (Descurainia pinnata), marestail (Conyza canadensis), velvetleaf (Abutilon theophrasti), sunflower (Helianthus annuus), and yellow foxtail (Setaria glauca) species at average densities of 50, 10, 5, 5, 5, and 2 plants/ft^2. Weed densities were taken at the time of spraying in the center of the plot, two ft^2 samples were taken. Plots were evaluated using visual ratings. No crop injury was observed on any treatment. Weed control from mid post roundup application was excellent on all plots.

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)					
							LAMAN	DESSS	CONCA	ABUTH	HELAN	SETGL
May 1	57	57	54	6 NNE	10:00 am	PP	4	8	4	0.5	0.5	NA
June 18	89	82	49	10 SW	12:30 pm	MPOST	NA	NA	8	4	6	4

Table 2. Rainfall received April 26 – May 11 and June 8 – June 28.

Date	Amount (in)
April 26	0.60
May 6	0.11
June 13	0.47
June 15	0.24
June 16	0.11
June 19	0.71
June 20	0.27
June 21	0.23
June 22	0.73

Table 3. Burndown and residual herbicides for no-till glyphosate-resistant soybean

Treatment	Rate	Unit	Application Timing	Henbit CONTROL % 5/11/09	T Mustrd CONTROL % 5/11/09	Marestl CONTROL % 5/11/09	Velvetlf CONTROL % 5/11/09	Sunflwr CONTROL % 5/11/09	Yel foxtl CONTROL % 5/11/09	Marestl CONTROL % 6/8/09	Velvetlf CONTROL % 6/8/09	Sunflwr CONTROL % 6/8/09	Yel foxtl CONTROL % 6/8/09	YIELD bu/acre
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP	99	99	66.3	78.5	58.8	82	55	65	46.3	35	38.2
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Lorox	16	oz/a	PP	99	99	80	82.3	58.8	74.5	76.3	80	45	40	39.8
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Firstrate	0.305	oz/a	PP	99	99	66.3	87	62.5	87	63.8	58.8	55	35	36.8
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Prowl H2O	32	fl oz/a	PP	99	99	78.8	87	55	90.8	71.3	70	43.8	47.5	44.6
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Valor SX	2	oz/a	PP	94.5	99	66.3	77	62.5	79.5	60	56.3	48.8	45	47.9
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Valor SX	2.5	oz/a	PP	96.8	99	73.8	82	50	94.3	70	71.3	40	40	54.2
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											

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Valor XLT	3	oz/a	PP	96.8	99	75	98	76.3	94.5	68.8	87.5	67.5	66.3	46.8
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Authority First	3	oz/a	PP	93.3	99	87.5	89.5	66.3	94.5	78.8	68.8	52.5	51.3	49.6
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Authority Assist	4	fl oz/a	PP	89.8	98	71.3	87	53.8	79.5	66.3	75	37.5	40	35
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Authority MTZ	8	oz/a	PP	94.5	99	61.3	87	53.8	77.3	55	60	42.5	35	38.9
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Gangster			PP	89.8	98	65	79.8	53.8	79.5	56.3	78.8	40	47.5	42.5
Firstrate	0.68	oz/a	PP											
Valor	1.85	oz/a	PP											
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											

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Treatment	Rate	Unit	Application Timing	Henbit CONTROL % 5/11/09	T Mustrd CONTROL % 5/11/09	Marestl CONTROL % 5/11/09	Velvetlf CONTROL % 5/11/09	Sunflwr CONTROL % 5/11/09	Yel foxtl CONTROL % 5/11/09	Marestl CONTROL % 6/8/09	Velvetlf CONTROL % 6/8/09	Sunflwr CONTROL % 6/8/09	Yel foxtl CONTROL % 6/8/09	YIELD bu/acre
Canopy EX			PP	99	99	90	87	45	83.3	88.8	71.3	35	55	49.7
Classic	1	oz/a	PP											
Express	0.3	oz/a	PP											
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Canopy	2.24	oz/a	PP	95.5	99	81.3	84.8	77.5	82	76.3	78.8	56.3	40	49.2
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Envive			PP	98	98	90	79.8	56.3	94.5	91.3	80	40	67.5	45
Classic	1.1	oz/a	PP											
Valor	1.72	oz/a	PP											
Harmony GT	0.116	oz/a	PP											
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Prefix	28.5	fl oz/a	PP	95.5	99	75	84.5	70	82	70	55	60	66.3	49.5
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
Extreme	48	fl oz/a	PP	99	99	77.5	90.8	76.3	94.5	75	72.5	67.5	63.8	41.5
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
untreated				0	0	0	0	0	0	0	0	0	0	24.8

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Optill	2	oz/a	PP	98	99	72.5	88.5	58.8	94.5	66.3	80	47.5	70	45
Roundup WeatherMAX + AMS	21.3	fl oz/a	PP											
2,4-D ester	8	fl oz/a	PP											
Roundup WeatherMAX + AMS	24	fl oz/a	MPOST											
LSD (P=.05)				6.12	1.08	23.63	18.63	19.75	22.95	28.54	17.24	25.42	27.93	11.26