

Impact Sequential Programs and Glyphosate Formulations (S0917)

A field study was initiated near Clay Center, Nebraska to compare one and two pass weed control programs. The experimental design was a randomized complete block with four replications. Plots were 10 feet wide and 30 feet long and were located on a silt loam soil with an organic matter content of 2.5% and pH of 6.5. Corn, Pioneer '34F97' RR2/LL was planted at 29,600 seeds/A on May 6 and emerged on May 18. Herbicides were applied PRE on May 9, EPOST on June 4, and MPOST on June 8. Herbicides were applied with a tractor-mounted sprayer calibrated to deliver 15 gallons of water per acre at 30 PSI using AIXR 110015 flat spray nozzles. The environmental conditions, at the time of herbicide application is given in Table 1. Rainfall in the amount of 0.62 inch was received twenty-three days after PRE application. . Rainfall received 10 days before and 10 days after herbicide applications is listed in Table 2. Plots received 13.97 inches of rain and 6.7 inches of irrigation water applied by lateral-move overhead sprinklers during growing season.

There was no crop injury from either the PRE or POST treatments (data not shown).

Major weeds consisted of giant foxtail (SETFA), common waterhemp (AMATA), velvetleaf (ABUTH) and common lambsquarters (CHEAL), at average densities of 6, 21, 2, and 1 plants per square foot, respectively.

The PRE herbicides were applied at reduced rates. The one pass application of Bicep II Magnum was weak on ABUTH and AMATA. PRE applications followed by POST applications provided improved weed control.

All glyphosate formulation treatments provided good to excellent weed control at the midseason ratings.

Overall average corn yield across treatments was 236.7 bu/A. Corn yield in the untreated plots averaged 140.6 bu/A. Corn yield in the one pass application of Bicep II Magnum plots averaged 205.0 bu/A. Corn yield in the one pass application of Roundup PowerMAX plots averaged 235.2 bu/A. Corn yield across PRE followed by Post treatments averaged 240.6 bu/A. Corn yield of atrazine applied PRE followed by glyphosate formulation treatments was 241.1 bu/A. There was no statistical difference in yields between the PRE followed by POST treatments and the POST only treatments (Table 3).

Application Codes: A= PRE; B= EPOST; C= MPOST

Table 1. Environmental conditions at the time of herbicide application.

Appl. Date	Air Temperature (F)	Humidity (%)	Wind Speed & direction (mph)	Time of day	Application Timing	Weed and Corn heights (inches)				
						SETFA	AMATA	ABUTH	CHEAL	CORN
May 9	66	24	3 N	1:56 pm	PRE	NA	NA	NA	NA	NA
June 4	65	34	2 S	2:28 pm	EPOST	3.0	2.0	3.0	1.5	10.0
June 8	68	47	6 NNE	4:33 pm	MPOST	5.0	6.0	5.0	5.0	12.0

Table 2. Rainfall received 10 days before and after herbicide application.

Appl. Date (May 9)	Amount (in)	Appl. Date (June 4)	Amount (in)	Appl. Date (June 8)	Amount (in)
Apr 29	0.49	May 26	0.17	June 1	0.62
Apr 30	0.17	June 1	0.62	June 2	0.22
May 3	0.26	June 5	0.16	June 5	0.16
May 8	0.25	June 6	0.52	June 6	0.52
May 10	0.11	June 9	0.16	June 9	0.16
May 13	0.03	June 10	0.06	June 10	0.06
May 15	0.03	June 12	0.30	June 12	0.30
		June 14	0.11	June 14	0.11
				June 15	2.41

Table 3. (cont.) Impact Sequential Programs and Glyphosate Formulations (S0917)

					SETFA	ABUTH	AMATA	CHEAL	SETFA	ABUTH	AMATA	CHEAL	CORN
Rating Date					6/10/2009	6/10/2009	6/10/2009	6/10/2009	7/10/2009	7/10/2009	7/10/2009	7/10/2009	11/9/2009
Rating Type					CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	YIELD
Rating Unit					%	%	%	%	%	%	%	%	BU/A
Trt-Eval Interval					32 DA-A	32 DA-A	32 DA-A	32 DA-A	32 DA-C	32 DA-C	32 DA-C	32 DA-C	
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code									
8	Dual II Magnum	0.75	PT/A	A	46	45	76	40	98	99	100	100	243.8
8	Impact	0.5	FL OZ/A	C									
8	Ignite 280	22	FL OZ/A	C									
8	atrazine	0.5	LB AI/A	C									
8	AMS	8.5	LB AI/100 GAL	C									
9	Atrazine	0.75	LB AI/A	A	0	33	70	100	95	97	96	100	240.3
9	Makaze	32	OZ/A	C									
9	Choice Weather Master	0.5	% V/V	C									
10	Atrazine	0.75	LB AI/A	A	0	28	76	99	96	99	97	100	237.6
10	LI 6303	22	OZ/A	C									
10	Choice Weather Master	0.5	% V/V	C									
11	Atrazine	0.75	LB AI/A	A	23	15	48	75	94	97	95	100	240.8
11	Mad Dog Plus	32	OZ/A	C									
11	Choice Weather Master	0.5	% V/V	C									
12	Atrazine	0.75	LB AI/A	A	0	13	45	100	93	93	92	100	245.7
12	LI 6285	32	OZ/A	C									
12	Choice Weather Master	0.5	% V/V	C									
13	Roundup PowerMAX	22	FL OZ/A	C	0	0	0	0	92	99	88	100	232.5
13	AMS	17	LB AI/100 GAL	C									
LSD (P=.05)					39.4	38.9	28.9	23.5	6.6	4.5	8.2	2.5	16.15