Corn Herbicide Standards Trial (S0923)

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, 'DKC61-69' RR2, 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 3, MPOST on June 9, and LPOST on June 20. 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 are 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 8.25 inches of irrigation water applied by lateral-move overhead sprinklers during growing season.

There was no crop injury observed from preemergence herbicide treatments (data not shown). There was minor injury (some chlorosis) from the treatments that included rimsulfuron. The shorter plant heights that were observed in treatments 10-13 on June 26 was likely due to early season competition from the weeds. None of the treatments that included a preemergence product had the same level of shortening (Table 3).

Major weeds consisted of giant foxtail (SETFA), lambsquarters (CHEAL), and common waterhemp (AMATA) at average densities of 2, 16, 15 plants per square foot, respectively.

The SureStart products had reduced control of common lambsquarters prior to the postemergence application timing. Integrity and Balance Flexx+Aatrex had reduced control of common lambsquarters compared to Lexar or Lumax+Aatrex. Balance Flexx also had reduced control of common waterhemp. Lexar had reduced control of giant foxtail (Table 3).

As of September 2, the 2 pass programs had fewer weeds than the 1 pass programs, except for treatments 12 and 13 (data not shown).

Corn yield across all herbicide treatments averaged 266.7 bu/A. Corn yield in the untreated plots averaged 137.0 bu/Ac. Corn yield across PRE treatments averaged 254.5 bu/A. Corn yield across PRE fb Post treatments averaged 269.9 bu/A. Corn yield across Post only treatments averaged 275.8 bu/A (Table 3).

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 (in)			
						SETFA	CHEAL	AMATA	CORN
May 9	55	35	10 N	10:43 am	PRE	NA	NA	NA	NA
June 3	70	29	8 N	4:30 pm	EPOST	2.3	2.0	2.5	8.0
June 9	69	74	6 SE	4:45 pm	MPOST	3.0	4.0	4.2	15.0
June 20	78	71	8 ESE	12:30 pm	LPOST	3.0	4.0	2.0	36.0

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

Appl. Date (May 9)	Amount (in)		Appl. Date (June 3)	Amount (in)		Appl. Date (June 9)	Amount (in)		Appl. Date (June 20)	Amount (in)
Apr 29	0.49		May 26	0.17		June 1	0.62		June 10	0.06
Apr 30	0.17		June 1	0.62		June 2	0.22		June 12	0.30
May 3	0.26		June 5	0.16		June 5	0.16		June 14	0.11
May 8	0.25		June 6	0.52		June 6	0.52		June 15	2.41
May 10	0.11		June 9	0.16		June 9	0.16		June 19	0.14
May 13	0.03		June 10	0.06		June 10	0.06		June 20	0.07
May 15	0.03		June 12	0.30		June 12	0.30			
						June 14	0.11			
						June 15	2.41			
						June 19	0.14			

Table 3. Corn Herbicide Standards (S0923)

Trt No.	Treatment Name	Rate	Rate Unit	Appl. Timing	SETFA 6/2/2009 CONTRO %	AMATA 6/2/2009 CONTRO %	CHEAL 6/2/2009 CONTRO %	CORN 6/9/2009 PHYCHL 0-100	CORN 6/26/2009 HEIGHT (in)	SETFA 7/27/2009 CONTRO %	AMATA 7/27/2009 CONTRO %	CHEAL 7/27/2009 CONTRO %	CORN 10/28/2009 YIELD bu/A
1	Lexar	3	QT/A	PREPRE	96	99	100	0	42.5	95	99	99	254.2
2	Lumax	2.5	QT/A	PREPRE	98	100	99	0	42.6	96	99	99	255.7
2	AATREX	0.5	LB AI/A	PREPRE									
3	Bicep II Magnum	2.1	QT/A	PREPRE	99	96	100	0	42.6	98	99	99	269.0
3	Callisto	3	FL OZ/A	MPOST									
3	AATREX	0.5	LB AI/A	MPOST									
3	COC	1	% V/V	MPOST									
3	UAN-28	2.5	% V/V	MPOST									
4	Integrity	20	FL OZ/A	PREPRE	100	99	96	0	40.4	98	99	94	260.4
5	Balance Flexx	5	OZ/A	PREPRE	97	97	96	0	42.1	99	96	90	247.7
5	AATREX	0.5	LB AI/A	PREPRE									
6	SURESTART	1.75	PT/A	PREPRE	99	98	76	0	41.4	99	99	99	265.0
6	DURANGO DMA	24	OZ/A	MPOST									
6	AMS	17	LB AI/100 GAL	MPOST									
7	SURESTART	2.5	PT/A	PREPRE	98	100	81	0	41.9	99	99	99	273.2
7	DURANGO DMA	24	OZ/A	MPOST									
7	AMS	17	LB AI/100 GAL	MPOST									
8	SURESTART	1.75	PT/A	PREPRE	93	98	84	0	41.3	99	99	99	272.2
8	ATRAZINE	0.5	LB AI/A	PREPRE									
8	DURANGO DMA	24	OZ/A	MPOST									
8	AMS	17	LB AI/100 GAL	MPOST									
9	UNTREATED				0	0	0	0	36.5	0	0	0	137.0

Table 3. cont Corn herbicide standards (S0923)

Trt No.	Treatment Name	Rate	Rate Unit	Appl. Timing	SETFA 6/2/2009 CONTRO %	AMATA 6/2/2009 CONTRO %	CHEAL 6/2/2009 CONTRO %	CORN 6/9/2009 PHYCHL 0-100	CORN 6/26/2009 HEIGHT (in)	SETFA 7/27/2009 CONTRO %	AMATA 7/27/2009 CONTRO %	CHEAL 7/27/2009 CONTRO %	CORN 10/28/2009 YIELD bu/A
10	DURANGO DMA	24	OZ/A	EPOST	0	0	0	5	38.7	99	99	99	279.2
10	AMS	17	LB AI/100 GAL	EPOST									
10	DURANGO DMA	24	OZ/A	LPOST									
10	AMS	17	LB AI/100 GAL	LPOST									
11	TOUCHDOWN TOTAL	24	OZ/A	EPOST	0	0	0	20	38	98	99	99	273.2
11	RESOLVE Q (1 oz)	1	OZ/A	EPOST									
11	AMS	17	LB AI/100 GAL	EPOST									
12	STEADFAST	0.75	OZ/A	EPOST	0	0	0	20	37.6	98	99	99	277.5
12	Callisto	3	FL OZ/A	EPOST									
12	AATREX	0.5	LB AI/A	EPOST									
12	COC	1	% V/V	EPOST									
12	UAN-28	2.5	% V/V	EPOST									
13	HALEX GT	4	PT/A	EPOST	0	0	0	0	37.8	99	99	99	273.4
13	NIS	0.25	% V/V	EPOST									
13	AMS	17	LB AI/100 GAL	EPOST									
LSD (P=.05)					4.7	1.7	10.8	4.1	1.8	1.8	1.1	2.8	17.52