

Laudis and Capreno application timing and tank-mix partners (S0916)

Laudis and Capreno are two broad spectrum grass and broadleaf herbicides from Bayer CropScience. Laudis contains tembotrione at 3.5 lb ai/gal. The mode of action of tembotrione is a HPPD inhibitor. Capreno contains a premix of [thiencarbazone-methyl (0.57 lb ai/gal) + tembotrione (2.88 lb ai/gal)]. The premix in Capreno incorporates two modes of action: thiencarbazone-methyl as an ALS inhibitor and tembotrione as a HPPD inhibitor.

A field study was initiated near Clay Center, Nebraska to evaluate crop response to Laudis and Capreno as affected by application timing and to evaluate efficacy as affected by weed size or tank-mix partner. 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/acre on May 6 and emerged on May 18. Herbicides were applied at corn stages of V3 on May 29, V5 on June 5, and V7 on June 12. 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 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.

Major weeds consisted of giant foxtail (SETFA), velvetleaf (ABUTH), common waterhemp (AMATA), and common lambsquarters (CHEAL) at average densities of 10, 5, 7, and 2 plants per square foot, respectively.

Capreno stunted corn when applied at the V3, V5, and V7 growth stages. In some treatments, the stunting persisted for over 3 weeks (trt 2, 12). Stunting ranged from 10% (V5) up to 34% (V3). Associated with the stunting was a faint, mottled chlorosis on the leaf tissue newly emerging from the whorl. Corn response (% stunting) at 6 DAT is listed in Table 3.

Laudis and Capreno both provided good to excellent mid-season control of grass and broadleaf weeds. Mid-season control of ABUTH, CHEAL, and AMATA with temotrione products applied at V3, V5, and V7 was greater than control with glyphosate alone applied at V3 (Table 3).

Overall average corn yield across treatments was 226.7 Bu/Acre. Corn yield in the untreated plots averaged 148.4 bu/A. There was no statistical difference in yields between plots that were treated with herbicide (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	Corn growth stage	Weed and Corn heights (inches)				
						SETFA	ABUTH	AMATA	CHEAL	CORN
May 29	87	20	5 NNW	2:19 am	V3	2.0	2.0	2.0	1.5	3.0
June 5	82	22	8 SSE	4:03 pm	V5	3.5	3.0	5.5	3.5	11.0
June 12	69	66	10 NW	2:49 pm	V7	11.0	11.0	17.0	14.0	22.0

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

Appl. Date (May 29)	Amount (in)		Appl. Date (June 5)	Amount (in)		Appl. Date (June 12)	Amount (in)
May 23	0.17		June 1	0.62		June 5	0.16
May 26	0.17		June 5	0.16		June 6	0.52
June 1	0.62		June 6	0.52		June 9	0.16
June 2	0.22		June 9	0.16		June 10	0.06
June 5	0.16		June 10	0.06		June 12	0.30
June 6	0.52					June 14	0.11
						June 15	2.41
						June 19	0.14
						June 20	0.07

Table 3. Laudis and Capreno timing and tank-mix partners (S0916)

					CORN	SETFA	ABUTH	AMATA	CHEAL	CORN
						7/2/2009	7/2/2009	7/2/2009	7/2/2009	11/6/2009
					STUNT	CONTRO	CONTRO	CONTRO	CONTRO	YIELD
					%	%	%	%	%	BU/A
Trt-Eval Interval					6 DAT	20 DA-C	20 DA-C	20 DA-C	20 DA-C	
Trt	Treatment	Appl								
No.	Name	Rate	Rate Unit	Description						
1	Untreated					0	0	0	0	148.4
2	CAPRENO	3	OZ/A	V3 corn	34	97	97	99	100	226.0
2	ROUNDUP POWERMAX	22	OZ/A	V3 corn						
2	AMS	8.5	LB A/100 GAL	V3 corn						
2	MSO	1	% V/V	V3 corn						
3	LAUDIS	3	OZ/A	V3 corn	0	90	99	100	100	227.2
3	ROUNDUP POWERMAX	22	OZ/A	V3 corn						
3	AMS	8.5	LB A/100 GAL	V3 corn						
3	MSO	1	% V/V	V3 corn						
4	CAPRENO	3	OZ/A	V5 corn	10	99	100	99	100	229.6
4	ROUNDUP POWERMAX	22	OZ/A	V5 corn						
4	AMS	8.5	LB A/100 GAL	V5 corn						
4	MSO	1	% V/V	V5 corn						
5	LAUDIS	3	OZ/A	V5 corn	0	96	100	98	100	228.3
5	ROUNDUP POWERMAX	22	OZ/A	V5 corn						
5	AMS	8.5	LB A/100 GAL	V5 corn						
5	MSO	1	% V/V	V5 corn						
6	CAPRENO	3	OZ/A	V7 corn	18	99	97	98	100	227.9
6	ROUNDUP POWERMAX	22	OZ/A	V7 corn						
6	AMS	8.5	LB A/100 GAL	V7 corn						
6	MSO	1	% V/V	V7 corn						
7	LAUDIS	3	OZ/A	V7 corn	3	97	98	97	100	228.0
7	ROUNDUP POWERMAX	22	OZ/A	V7 corn						
7	AMS	8.5	LB A/100 GAL	V7 corn						
7	MSO	1	% V/V	V7 corn						
8	HALEX GT	3.6	QT/A	V3 corn	1	100	100	100	100	225.4
8	AMS	8.5	LB A/100 GAL	V3 corn						
8	NIS	0.25	% V/V	V3 corn						
9	ROUNDUP POWERMAX	22	OZ/A	V3 corn	0	81	92	94	98	227.7
9	AMS	8.5	LB A/100 GAL	V3 corn						
10	CAPRENO	3	OZ/A	V3 corn	21	96	99	100	100	221.7
10	ATRAZINE	0.5	LB A/A	V3 corn						
10	AMS	8.5	LB A/100 GAL	V3 corn						
10	MSO	1	% V/V	V3 corn						

Table 3 Laudis and Capreno timing and tank-mix partners (S0916)

					ZEAMX	SETFA	ABUTH	AMATA	CHEAL	ZEAMX
						7/2/2009	7/2/2009	7/2/2009	7/2/2009	11/6/2009
					STUNT	CONTRO	CONTRO	CONTRO	CONTRO	YIELD
					%	%	%	%	%	BU/A
Trt- Eval Interval					6 DAT	20 DA-C	20 DA-C	20 DA-C	20 DA-C	
Trt	Treatment	Appl								
No.	Name	Rate	Rate Unit	Description						
11	LAUDIS	3	OZ/A	V3 corn	1	93	98	99	100	227.1
11	ATRAZINE	0.5	LB A/A	V3 corn						
11	AMS	8.5	LB A/100 GAL	V3 corn						
11	MSO	1	% V/V	V3 corn						
12	CAPRENO	3	OZ/A	V3 corn	30	97	97	99	99	224.8
12	AMS	8.5	LB A/100 GAL	V3 corn						
12	MSO	1	% V/V	V3 corn						
13	LAUDIS	3	OZ/A	V3 corn	5	90	99	99	100	227.1
13	AMS	8.5	LB A/100 GAL	V3 corn						
13	MSO	1	% V/V	V3 corn						
LSD (P=.05)					7.4	5.3	3.9	1.5	1.1	15.856