

Kixor in Grain Sorghum (S0953)

Kixor is the branding of the BASF's active ingredient saflufenacil. Sharpen and Integrity are recently labeled products containing suflufenacil.

Sharpen contains 2.85 lb ai/gal of suflufenacil and is effective on a wide spectrum of broadleaf weeds. It can be used as a burndown, pre-plant, or pre-emergence herbicide depending on crop. Suflufenacil is a PPO inhibitor.

Integrity contains premix of Sharpen [saflufenacil (0.57 lb ai/gal)] + Outlook [dimethenamid-P (5.0 lb ai/gal)]. It is a broad spectrum grass and broadleaf herbicide for pre-emergence application. Saflufenacil is a PPO inhibitor and dimthenamid-P is a seedling growth inhibitor.

There are a limited number of herbicide choices available for weed control in grain sorghum. A field study was initiated near Clay Center, Nebraska to investigate weed control efficacy, crop safety, and yield aspects of various herbicides applied preemergence on grain sorghum. 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. Trial area was disked and field cultivated prior to the PRE application. Sorghum, 'NC+ 7R-83' was planted at 113,700 seeds/A on May 19 and emerged on May 26. Herbicide treatments were applied on May 20 with a tractor-mounted sprayer calibrated to deliver 15 gallons of water per acre at 30 PSI. Treatments were applied using AIXR 110015 flat spray nozzles. The environmental conditions at the time of spraying are given in Table 1. Rainfall in the amount of 0.62 inch was received 12 days after PRE application. Rainfall received 10 days before and 10 days after herbicide applications is listed in Table 2. Plots received 12.7 inches of rain and 8.25 inches of irrigation water applied by lateral-move overhead sprinklers during season.

Weed pressure in the trial was moderate. Major weeds consisted of giant foxtail (SETFA), velvetleaf (ABUTH), common waterhemp (AMATA), common lambsquarter (CHEAL) present at 8, 5, 34, and 2 plants per FT².

This trial was designed to be a preplant vs preemergence trial. Because we missed the preplant timing treatments, we modified the trial to included different rates of Integrity, Lumax and Lexar, all applied preemergence.

There was no crop response from the herbicides applied preemergence. (data not shown)

In general, weed control at all rates was good to excellent at 28, 37, and 90 DAT. Bicep II Magnum was weak on velvetleaf (an expected result). All other treatments were very effective on foxtail, velvetleaf, common waterhemp, and common lambsquarters.

Overall average sorghum yield across treatments was 129.2 bu/A. Average yield of the untreated plots was 29.2 B/A.

Weed control evaluations and yields are shown in Table 3A and 3B.

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 Crop Heights (inches)			
						SETFA	ABUTH	AMATA	CHEAL
May 20	74	35	16 S	10:11 am	PRE	NA	NA	NA	NA

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

Appl. Date (May 20)	Amount (in)
May 10	0.11
May 13	0.03
May 15	0.03
May 23	0.17
May 26	0.17

Table 3A. Kixor in Grain Sorghum (S0953)

					SETFA	ABUTH	AMATA	CHEAL	SETFA	ABUTH	AMATA	CHEAL
Rating Date					6/17/2009	6/17/2009	6/17/2009	6/26/2009	6/26/2009	6/26/2009	6/26/2009	6/26/2009
Rating Type					CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit					%	%	%	%	%	%	%	%
					28 DAT	28 DAT	28 DAT	37 DAT	37 DAT	37 DAT	37 DAT	37 DAT
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage								
1	Untreated				0	0	0	0	0	0	0	0
2	Bicep II Magnum	2.1	QT/A	PREPRE	100	70	100	100	100	61	100	100
3	Lexar	2	QT/A	PREPRE	98	100	100	100	96	97	100	100
4	Lumax	1.7	QT/A	PREPRE	97	99	100	100	96	96	100	100
5	Integrity	10	FL OZ/A	PREPRE	92	94	100	100	82	94	100	100
6	Integrity	10	FL OZ/A	PREPRE	95	97	100	100	88	95	100	100
6	Atrazine DF	1.11	LB/A	PREPRE								
7	Lexar	3	QT/A	PREPRE	98	100	100	100	97	99	100	100
8	Integrity	7.5	FL OZ/A	PREPRE	99	98	100	100	99	98	100	100
9	Integrity	7.5	FL OZ/A	PREPRE	94	96	99	100	85	94	97	100
9	Atrazine DF	1.11	LB/A	PREPRE								
10	Lumax	2.5	QT/A	PREPRE	98	100	100	100	97	98	100	100
11	Integrity	15	FL OZ/A	PREPRE	95	99	100	100	93	98	100	100
12	Integrity	15	FL OZ/A	PREPRE	97	98	100	100	95	97	100	100
12	Atrazine DF	1.11	LB/A	PREPRE								
13	Integrity	20	FL OZ/A	PREPRE	98	98	100	100	97	99	100	100
LSD (P=.05)					3.3	16.6	0.6	0	9.6	14.4	1.9	0

Table 3B. Kixor in Grain Sorghum (S0953)

					SETFA	ABUTH	AMATA	CHEAL	SORVU
Rating Date					8/17/2009	8/17/2009	8/17/2009	8/17/2009	11/20/2009
Rating Type					CONTRO	CONTRO	CONTRO	CONTRO	YIELD
Rating Unit					%	%	%	%	bu/A
					89 DAT	89 DAT	89 DAT	89 DAT	
Trt No.	Treatment Name	Rate	Rate Unit	Growth Stage					
1	Untreated				0	0	0	0	29.2
2	Bicep II Magnum	2.1	QT/A	PREPRE	100	64	100	100	91.5
3	Lexar	2	QT/A	PREPRE	96	97	100	100	130.4
4	Lumax	1.7	QT/A	PREPRE	96	97	100	100	145.4
5	Integrity	10	FL OZ/A	PREPRE	73	94	100	100	125.1
6	Integrity	10	FL OZ/A	PREPRE	80	95	100	100	129.8
6	Atrazine DF	1.11	LB/A	PREPRE					
7	Lexar	3	QT/A	PREPRE	97	99	100	100	144.9
8	Integrity	7.5	FL OZ/A	PREPRE	99	98	100	100	134.8
9	Integrity	7.5	FL OZ/A	PREPRE	79	95	97	100	90.7
9	Atrazine DF	1.11	LB/A	PREPRE					
10	Lumax	2.5	QT/A	PREPRE	97	98	100	100	146.5
11	Integrity	15	FL OZ/A	PREPRE	94	98	100	100	140.8
12	Integrity	15	FL OZ/A	PREPRE	96	92	100	100	137.6
12	Atrazine DF	1.11	LB/A	PREPRE					
13	Integrity	20	FL OZ/A	PREPRE	97	98	100	100	132.4
LSD (P=.05)					20.9	15.6	1.9	0	22.37