

NIC-IT applied alone and in tank-mixtures (S0911)

A field study was initiated near Clay Center, Nebraska at the South Central Agriculture Laboratory to evaluate efficacy and crop safety of NIC-IT (nicosulfuron) and NIC-IT tank-mixtures applied to field corn. 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 April 27 and emerged on May 10. Herbicides were applied PRE on May 9 and EPOST on May 27. 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.

Primary weeds consisted of giant foxtail (SETFA), sorghum (SORVU), velvetleaf (ABUTH), common waterhemp (AMATA), and lambsquarters (CHEAL) at average densities of 1, 32, 104, 81, 1 plants per one-half square meter. The trial had extremely high common waterhemp pressure. A percentage of the common waterhemp at the South Central Agricultural Laboratory is resistant to ALS-inhibiting herbicides.

Timing A (preemergence) for treatment 9 was applied after the crop was planted but just before corn emergence.

At 15 DAB corn was shorter in treatments that did not have a preemergence treatment, presumably due to competition from the weeds. The difference, although not significant, was present at 41 DAB.

Banvel, Laudis, and Callisto enhanced NI C-IT control of waterhemp and velvetleaf. Atrazine increased NIC-IT control of velvetleaf.

NIC-IT controlled shattercane and giant foxtail.

Corn yield across all herbicide treatments averaged 203.0 bu/A. Corn yield in the untreated plots averaged 100.4 bu/A.

Weed control evaluations and corn yield can be found in Tables 3A & 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 Corn Heights (in)					
						SETFA	SORSS	ABUTH	AMATA	CHEAL	CORN
May 9	64	23	5 N	12:28 pm	PRE	NA	NA	NA	NA	NA	NA
May 27	54	67	8 N	1:46 pm	POST	2.0	3.0	3.0	3.0	3.0	6.0

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

Appl. Date (May 9)	Amount (in)		Appl. Date (May 27)	Amount (in)
May 3	0.26		May 23	0.17
May 8	0.25		May 26	0.17
May 10	0.11		June 1	0.62
May 13	0.03		June 2	0.22
May 15	0.03		June 5	0.16
			June 6	0.52

Table 3A. NIC-IT applied alone and in tank-mixtures (S0911)

Trt No.	Treatment Name	Rate		Appl Code	Appl Description	ZEAMX	ZEAMX	AMATA	ABUTH	CHEAL	SORVU	SETFA
		Rate	Unit			6/4/2009	6/10/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009
						PHYGEN	HEIGHT	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
						0-100	IN	%	%	%	%	%
						26 DA-A	14 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B
1	NIC-IT	1.5	FL OZ/A	B	V3-V5	25	13.6	68	63	99	90	88
1	ATRAZINE	1.12	LB/A	B	V3-V5							
1	COC	1	% V/V	B	V3-V5							
1	UAN	3	% V/V	B	V3-V5							
2	NIC-IT	2	FL OZ/A	B	V3-V5	23	13.4	64	65	99	93	89
2	ATRAZINE	1.12	LB/A	B	V3-V5							
2	COC	1	% V/V	B	V3-V5							
2	UAN	3	% V/V	B	V3-V5							
3	NIC-IT	1.5	FL OZ/A	B	V3-V5	24	12.2	86	78	99	90	86
3	BANVEL	12	FL OZ/A	B	V3-V5							
3	COC	1	% V/V	B	V3-V5							
3	UAN	3	% V/V	B	V3-V5							
4	NIC-IT	2	FL OZ/A	B	V3-V5	16	13.4	89	81	97	93	88
4	BANVEL	12	FL OZ/A	B	V3-V5							
4	COC	1	% V/V	B	V3-V5							
4	UAN	3	% V/V	B	V3-V5							
5	NIC-IT	1.5	FL OZ/A	B	V3-V5	25	12.8	88	80	97	91	86
5	BANVEL	8	FL OZ/A	B	V3-V5							
5	ATRAZINE	1.12	LB /A	B	V3-V5							
5	COC	1	% V/V	B	V3-V5							
5	UAN	3	% V/V	B	V3-V5							

Table 3A. NIC-IT applied alone and in tank-mixtures (S0911)

Trt No.	Treatment Name	Rate	Unit	Appl Code	Appl Description	ZEAMX	ZEAMX	AMATA	ABUTH	CHEAL	SORVU	SETFA
						6/4/2009	6/10/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009
						PHYGEN	HEIGHT	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
						0-100	IN	%	%	%	%	%
						26 DA-A	14 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B
6	NIC-IT	2	FL OZ/A	B	V3-V5	21	11.9	64	71	99	95	89
6	HARASS	0.05	OZ/A	B	V3-V5							
6	COC	1	% V/V	B	V3-V5							
6	UAN	3	% V/V	B	V3-V5							
7	ACCENT	0.66	OZ/A	B	V3-V5	21	13.6	70	74	99	96	91
7	ATRAZINE	1.12	LB/A	B	V3-V5							
7	COC	1	% V/V	B	V3-V5							
7	UAN	3	% V/V	B	V3-V5							
8	STOUT	0.75	OZ/A	B	V3-V5	21	11.8	65	80	92	94	94
8	COC	1	% V/V	B	V3-V5							
8	UAN	3	% V/V	B	V3-V5							
9	GLYFOS X-TRA	32	FL OZ/A	A	PRE	0	16.3	99	77	98	99	99
9	HARNESS	22.9	FL OZ/A	A	PRE							
9	NIC-IT	2	FL OZ/A	B	V3-V5							
9	COC	1	% V/V	B	V3-V5							
9	UAN	3	% V/V	B	V3-V5							
10	UNTREATED					0	13.5	0	0	0	0	0
11	NIC-IT	1.5	FL OZ/A	B	V3-V5	21	12.9	65	63	92	93	90
11	COC	1	% V/V	B	V3-V5							
11	UAN	3	% V/V	B	V3-V5							

Table 3A. NIC-IT applied alone and in tank-mixtures (S0911)

Trt No.	Treatment Name	Rate		Appl Code	Appl Description	ZEAMX	ZEAMX	AMATA	ABUTH	CHEAL	SORVU	SETFA
		Rate	Unit			6/4/2009	6/10/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009
						PHYGEN	HEIGHT	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
						0-100	IN	%	%	%	%	%
						26 DA-A	14 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B	15 DA-B
12	NIC-IT	1.5	FL OZ/A	B	V3-V5	21	12.5	97	97	99	70	70
12	LAUDIS	2	FL OZ/A	B	V3-V5							
12	COC	1	% V/V	B	V3-V5							
12	UAN	3	% V/V	B	V3-V5							
13	NIC-IT	1.5	FL OZ/A	B	V3-V5	20	13.2	89	97	97	83	80
13	CALLISTO	2	FL OZ/A	B	V3-V5							
13	COC	1	% V/V	B	V3-V5							
13	UAN	3	% V/V	B	V3-V5							
LSD (P=.05)						5.4	1.59	12.7	11	6	5.4	7.9

Table 3B. NIC-IT applied alone and in tank-mixtures (S0911)

Trt No.	Treatment Name	Rate	Appl Unit	Appl Description	SORVU	SETFA	ABUTH	AMATA	CHEAL	ZEAMX	ZEAMX
					7/6/2009	7/6/2009	7/6/2009	7/6/2009	7/6/2009	7/7/2009	11/7/2009
					CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	HEIGHT	YIELD
					%	%	%	%	%	IN	bu/A
					40 DA-B	40 DA-B	40 DA-B	40 DA-B	40 DA-B	41 DA-B	
1	NIC-IT	1.5	FL OZ/A	B V3-V5	100	99	34	68	100	58.9	202.4
1	ATRAZINE	1.12	LB/A	B V3-V5							
1	COC	1	% V/V	B V3-V5							
1	UAN	3	% V/V	B V3-V5							
2	NIC-IT	2	FL OZ/A	B V3-V5	99	100	39	64	99	53.3	188.4
2	ATRAZINE	1.12	LB/A	B V3-V5							
2	COC	1	% V/V	B V3-V5							
2	UAN	3	% V/V	B V3-V5							
3	NIC-IT	1.5	FL OZ/A	B V3-V5	100	100	86	96	100	58.5	231.1
3	BANVEL	12	FL OZ/A	B V3-V5							
3	COC	1	% V/V	B V3-V5							
3	UAN	3	% V/V	B V3-V5							
4	NIC-IT	2	FL OZ/A	B V3-V5	99	99	93	94	100	58.4	226.6
4	BANVEL	12	FL OZ/A	B V3-V5							
4	COC	1	% V/V	B V3-V5							
4	UAN	3	% V/V	B V3-V5							
5	NIC-IT	1.5	FL OZ/A	B V3-V5	98	99	96	93	100	55.9	216.8
5	BANVEL	8	FL OZ/A	B V3-V5							
5	ATRAZINE	1.12	LB/A	B V3-V5							
5	COC	1	% V/V	B V3-V5							
5	UAN	3	% V/V	B V3-V5							

Table 3B. NIC-IT applied alone and in tank-mixtures (S0911)

Trt No.	Treatment Name	Rate		Appl Code	Appl Description	SORVU	SETFA	ABUTH	AMATA	CHEAL	ZEAMX	ZEAMX
		Rate	Unit			7/6/2009	7/6/2009	7/6/2009	7/6/2009	7/6/2009	7/7/2009	11/7/2009
						CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	HEIGHT	YIELD
						%	%	%	%	%	IN	bu/A
						40 DA-B	40 DA-B	40 DA-B	40 DA-B	40 DA-B	41 DA-B	
6	NIC-IT	2	FL OZ/A	B	V3-V5	100	99	10	53	100	55.6	185.8
6	HARASS	0.05	OZ/A	B	V3-V5							
6	COC	1	% V/V	B	V3-V5							
6	UAN	3	% V/V	B	V3-V5							
7	ACCENT	0.66	OZ/A	B	V3-V5	100	99	13	72	100	59.0	188.3
7	ATRAZINE	1.12	LB/A	B	V3-V5							
7	COC	1	% V/V	B	V3-V5							
7	UAN	3	% V/V	B	V3-V5							
8	STOUT	0.75	OZ/A	B	V3-V5	100	99	35	44	99	55.5	164.2
8	COC	1	% V/V	B	V3-V5							
8	UAN	3	% V/V	B	V3-V5							
9	GLYFOS X-TRA	32	FL OZ/A	A	PRE	100	100	40	100	100	64.9	227.3
9	HARNESS	22.9	FL OZ/A	A	PRE							
9	NIC-IT	2	FL OZ/A	B	V3-V5							
9	COC	1	% V/V	B	V3-V5							
9	UAN	3	% V/V	B	V3-V5							
10	UNTREATED					0	0	0	0	0	53.9	100.4
11	NIC-IT	1.5	FL OZ/A	B	V3-V5	100	100	5	50	99	53.7	158.3
11	COC	1	% V/V	B	V3-V5							
11	UAN	3	% V/V	B	V3-V5							

Table 3B. NIC-IT applied alone and in tank-mixtures (S0911)

Trt No.	Treatment Name	Rate	Unit	Appl Code	Appl Description	SORVU	SETFA	ABUTH	AMATA	CHEAL	ZEAMX	ZEAMX
						7/6/2009	7/6/2009	7/6/2009	7/6/2009	7/6/2009	7/7/2009	11/7/2009
						CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	HEIGHT	YIELD
						%	%	%	%	%	IN	bu/A
						40 DA-B	40 DA-B	40 DA-B	40 DA-B	40 DA-B	41 DA-B	
12	NIC-IT	1.5	FL OZ/A	B	V3-V5	96	94	98	97	100	59.1	216.6
12	LAUDIS	2	FL OZ/A	B	V3-V5							
12	COC	1	% V/V	B	V3-V5							
12	UAN	3	% V/V	B	V3-V5							
13	NIC-IT	1.5	FL OZ/A	B	V3-V5	99	99	100	79	100	58.5	230.1
13	CALLISTO	2	FL OZ/A	B	V3-V5							
13	COC	1	% V/V	B	V3-V5							
13	UAN	3	% V/V	B	V3-V5							
LSD (P=.05)						2.4	3.2	28.1	31.1	1.1	7.44	23.987