

Adjuvant effect on Sharpen desiccation in Red Lasoda. Harlene Hatterman-Valenti and Collin Auwarter.

This study was conducted at the Northern Plains Potato Grower's Non-Irrigation Research site near Grand Forks, ND to evaluate adjuvants with Sharpen herbicide as a desiccant compared to local standards. Soybeans were grown in 2009. Plots were 4 rows by 20 ft arranged in a randomized complete block design with four replicates. Seed pieces (2 oz) were planted on 36 inch rows and 12 inch spacing on June 16, 2010. Treatments were applied when potatoes were beginning to senesce on September 22. One treatment had a second application which occurred on September 27. Treatments were applied to the middle 2 rows. Leaf and stem necrosis data were taken three times, September 28, 6 days after application A (6 DAA A), October 5 (13 DAA A), and October 12 (20 DAA A). Potatoes were machine harvested October 20 and graded a few weeks later. Application, environmental, and crop data are listed below.

Date:		9/22/10	9/27/10
Treatment:		A	B
Sprayer:	GPA:	20	20
	PSI:	40	40
	Nozzle:	8002	8002
Air temperature (F):		54	63
Relative humidity (%):		69	73
Wind (MPH):		7	8
Soil moisture:		Adequate	Adequate
Cloud cover (%):		100	100
Next rainfall		9/23/10	9/29/10

All treatments except Sharpen @ 2 fl oz/a + Class Act NG @ 2.5% v/v + Destiny HC @ 0.75 pt/a provided similar plant desiccation at 20 DAA A compared to the standards. Reglone @ 2 pt/a + Preference @ 0.25% v/v provided complete necrosis of leaves and stems by 20 DAA A. Splitting the application (Reglone @ 1 pt/a + Preference @ 0.25% v/v applied 2X) provided slightly less stem necrosis. By 20 DAA A, all Sharpen treatments had leaf necrosis between 91-98%. Sharpen @ 2 fl oz/a + Class Act NG @ 2.5% v/v + Destiny @ 1 pt/a had the greatest desiccation of the Sharpen treatments with 98% necrosis of the leaves and 90% of the stems. Yields were statistically similar for all treatments.

Table 1. Leaf and stem necrosis at 6, 13, and 20 DAA A.

No	Name	Rate	Unit	App Code	--9/28/10--		-----10/5/10-----		----10/12/10----	
					Leaf	Stem	Leaf	Stem	Leaf	Stem
-----% Desiccated-----										
1	Untreated				0 b	0 c	0 e	0 e	0 c	0 c
2	Sharpen	2	fl oz/a	A	11 a	3 ab	41 cd	14 d	91 ab	79 ab
3	Sharpen	2	fl oz/a	A	16 a	5 ab	50 bcd	21 bcd	91 ab	80 ab
	Class Act NG	2.5	% v/v	A						
	InterLock	2	fl oz/a	A						
4	Sharpen	2	fl oz/a	A	14 a	4 ab	54 bcd	25 bcd	91 ab	80 ab
	AG 06011	6	fl oz/a	A						
	NPAK AMS Liq	2.5	% v/v	A						
5	Sharpen	2	fl oz/a	A	10 a	2 b	35 d	14 d	66 b	60 b
	Class Act NG	2.5	% v/v	A						
	Destiny HC	0.75	pt/a	A						
6	Sharpen	2	fl oz/a	A	16 a	4 ab	63 bc	33 bc	95 ab	86 ab
	Class Act NG	2.5	% v/v	A						
	Destiny HC	0.5	% v/v	A						
7	Sharpen	2	fl oz/a	A	14 a	5 ab	55 bcd	23 bcd	98 a	90 ab
	Class Act NG	2.5	% v/v	A						
	Destiny HC	1	pt/a	A						
8	Sharpen	2	fl oz/a	A	13 a	5 ab	51 bcd	25 bcd	95 ab	85 ab
	NPAK AMS Liq	2.5	% v/v	A						
	Destiny (MSO)	1	% v/v	A						
9	Sharpen AG 07043	2	fl oz/a	A	16 a	5 ab	58 bcd	26 bcd	95 ab	85 ab
		1	% v/v	A						
10	Sharpen Prime Oil 1% NPAK AMS Liq	2	fl oz/a	A	13 a	4 ab	49 bcd	20 cd	94 ab	85 ab
		1	% v/v	A						
		2.5	% v/v	A						
11	Sharpen AG 07010 Class Act NG	2	fl oz/a	A	11 a	4 ab	45 cd	16 d	91 ab	79 ab
		1	pt/a	A						
		2.5	% v/v	A						
12	Sharpen AG 08001 Class Act NG	2	fl oz/a	A	15 a	4 ab	55 bcd	28 bcd	94 ab	85 ab
		1	pt/a	A						
		2.5	% v/v	A						
13	Sharpen AG 08050 Class Act NG	2	fl oz/a	A	11 a	3 ab	45 cd	15 d	91 ab	84 ab
		0.5	% v/v	A						
		2.5	% v/v	A						
14	Reglone Preference	2	pt/a	A	19 a	6 a	81 a	50 a	100 a	100 a
		0.25	% v/v	A						
15	Reglone Preference Reglone Preference	1	pt/a	A	15 a	5 ab	69 ab	35 b	100 a	98 a
		0.25	% v/v	A						
		1	pt/a	B						
		0.25	% v/v	B						
LSD (P<.05)					5	2	14	9	18	18

Table 2. Yield and grade.

No	Name	Rate	Unit	App Code	Total	<4 oz	4-6 oz	6-10 oz	>10 oz	> 4 oz
					----- cwt/a -----					
1	Untreated				303 a	71 a	90 a	37 a	106 a	233 a
2	Sharpen	2	fl oz/a	A	303 a	70 a	112 a	55 a	66 a	233 a
3	Sharpen	2	fl oz/a	A	305 a	62 a	96 a	45 a	102 a	243 a
	Class Act NG	2.5	% v/v	A						
	InterLock	2	fl oz/a	A						
4	Sharpen	2	fl oz/a	A	309 a	59 a	92 a	42 a	116 a	250 a
	AG 06011	6	fl oz/a	A						
	NPAK AMS Liq	2.5	% v/v	A						
5	Sharpen	2	fl oz/a	A	316 a	66 a	86 a	37 a	126 a	250 a
	Class Act NG	2.5	% v/v	A						
	Destiny HC	0.75	pt/a	A						
6	Sharpen	2	fl oz/a	A	276 a	68 a	88 a	40 a	79 a	208 a
	Class Act NG	2.5	% v/v	A						
	Destiny HC	0.5	% v/v	A						
7	Sharpen	2	fl oz/a	A	295 a	64 a	82 a	39 a	110 a	231 a
	Class Act NG	2.5	% v/v	A						
	Destiny HC	1	pt/a	A						
8	Sharpen	2	fl oz/a	A	320 a	57 a	95 a	51 a	117 a	263 a
	NPAK AMS Liq	2.5	% v/v	A						
	Destiny (MSO)	1	% v/v	A						
9	Sharpen AG 07043	2	fl oz/a	A	318 a	54 a	95 a	46 a	123 a	264 a
		1	% v/v	A						
10	Sharpen	2	fl oz/a	A	292 a	61 a	90 a	43 a	97 a	231 a
	Prime Oil 1%	1	% v/v	A						
	NPAK AMS Liq	2.5	% v/v	A						
11	Sharpen	2	fl oz/a	A	320 a	66 a	93 a	41 a	119 a	254 a
	AG 07010	1	pt/a	A						
	Class Act NG	2.5	% v/v	A						
12	Sharpen	2	fl oz/a	A	264 a	60 a	96 a	43 a	66 a	204 a
	AG 08001	1	pt/a	A						
	Class Act NG	2.5	% v/v	A						
13	Sharpen	2	fl oz/a	A	339 a	68 a	102 a	47 a	122 a	271 a
	AG 08050	0.5	% v/v	A						
	Class Act NG	2.5	% v/v	A						
14	Reglone Preference	2	pt/a	A	287 a	64 a	93 a	48 a	82 a	223 a
		0.25	% v/v	A						
15	Regone	1	pt/a	A	297 a	58 a	92 a	42 a	105 a	239 a
	Preference	0.25	% v/v	A						
	Reglone	1	pt/a	B						
	Preference	0.25	% v/v	B						
LSD (P≤.05)					51	17	22	14	42	48