

POTATO HERBICIDE EFFICACY EVALUATION - Arlington, WI - 2012
Daniel J. Heider / Jed B. Colquhoun

Location: Arlington Ag Research Station - Field 619

Plot Information:

Soil Type: Plano Silt Loam; pH 6.8; OM 3.6%.
 Potato Cultivar: Superior
 Date Planted: 5/10/12
 Row Spacing: 36 Inches, 4 rows/plot
 Plant Spacing: 12 inches
 Date Harvested: 8/22/12
 Plot Size-Design: 12' x 20', 4 Reps
 Rating Dates: 6/4, 6/13, 6/20

Application Equipment: Tractor mounted air pressure sprayer. GPA 20, PSI 27, MPH 3.3
 Nozzle - XR8003VS, Nozzle spacing 18", Height 18".

Herbicide Application Data:

Date	5/22	6/4
Time	6:00 am	12:00 pm
Treatment	HS	PO1
Soil Moisture		
SF	dry	dry
1"	dry	dry
3"	moist	moist
Soil Temp (F°)		
SF	60.3	107.1
3"	58.0	73.4
Air Temp (F°)	59.2	80.6
Wind	1.8 E	0.7 N
%RH	47.8%	45.2%
Sky Condition	0% clouds	0% clouds
Crop Stage	pre	8-12"
Weed & Size	pre	COLQ 1"
	-----	RRPW 1"
	-----	VELE 1"
	-----	YEFT 1"

Summary: This site received only 0.56" of rain during the 48 days beginning June 1st. This lack of moisture resulted in relatively poor weed control across most treatments. Several of the unregistered treatments that included herbicides such as Callisto, Firstrate, V-10142 and Pyroxasulfone all performed quite adequately with no reported crop injury. Yield comparisons are not as dramatic as expected and may have been hindered more from dry conditions than from reduced performance of weed control.

Fertilization and other pesticides: 6-24-24 @ 350 lb/A on 5/10 with Platinum insecticide impregnated on fertilizer. 6/21 - Baythroid 2XL 2.8 oz/a. 6/25 - Coragen 5.0 oz/A
 Irrigation: 7/1 - 1", 7/17 - 0.8"

Vine Desiccation: 8/10 - Reglone 1 pt/a + NIS

Weed Abbreviations:

COLQ = Common Lambsquarters
 RRPW = Redroot Pigweed
 YEFT = Yellow Foxtail
 VELE = Velvetleaf

Plot Weed Density:

high
 Moderate
 high
 Moderate

Potato Herbicide Efficacy 2012 - Arlington, WI

Trt No.	Treatment Name	Rate	Unit	Grow Stg	% Injury 6/4/12	% Weed Control 6/4/12			
						COLQ	CORW	VELE	YEFT
1	Untreated Check				0 b	0 c	0 c	0 d	0 e
2	Metribuzin	0.5 LB	A/A	HS	0 b	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
3	Lorox	1 LB/A		HS	0 b	100 a	100 a	81.7 ab	98.3 ab
	Curbit	3 PT/A		HS					
4	NAI 1333	1.5 OZ/A		HS	0 b	100 a	100 a	83.3 ab	100 a
	Dual Magnum	1 PT/A		HS					
5	NAI 1333	2 OZ/A		HS	0 b	100 a	98.3 ab	65 bc	43.3 d
6	NAI 1333	2 OZ/A		HS	0 b	100 a	100 a	83.3 ab	100 a
	Dual Magnum	1 PT/A		HS					
7	NAI 1333	2.5 OZ/A		HS	0 b	100 a	100 a	53.3 c	76.7 bc
8	NAI 1333	2.5 OZ/A		HS	0 b	100 a	100 a	90 a	98.3 ab
	Dual Magnum	1 PT/A		HS					
9	NAI 1333	3 OZ/A		HS	0 b	99.3 b	96.7 b	66.7 bc	88.3 abc
10	NAI 1333	3 OZ/A		HS	0 b	100 a	100 a	86.7 a	100 a
	Dual Magnum	1 PT/A		HS					
11	NAI 1333	4.25 OZ/A		HS	0 b	100 a	100 a	91.7 a	99.3 a
	Dual Magnum	1 PT/A		HS					
12	NAI 1333	5.5 OZ/A		HS	0 b	100 a	100 a	96 a	100 a
	Dual Magnum	1 PT/A		HS					
13	Matrix	1.5 OZ/A		PO1	0 b	0 c	0 c	0 d	0 e
	NIS	0.25 % V/V		PO1					
14	Solida	1.5 OZ/A		PO1	0 b	0 c	0 c	0 d	0 e
	NIS	0.25 % V/V		PO1					
15	Callisto	1 OZ/A		HS	0 b	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
16	Callisto	2 OZ/A		HS	0 b	100 a	100 a	99.3 a	100 a
	Dual Magnum	1 PT/A		HS					
17	Sharpen	1.5 OZ/A		HS	0 b	100 a	100 a	100 a	99.3 a
	Dual Magnum	1 PT/A		HS					
18	Sharpen	2.5 OZ/A		HS	0 b	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
19	Firstrate	0.25 OZ/A		HS	0 b	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
20	Firstrate	0.5 OZ/A		HS	0 b	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
21	V-10142	0.4 LB	A/A	HS	0 b	100 a	100 a	99.3 a	66 c
22	Pyroxasulfone	0.213 LB	A/A	HS	0 b	100 a	100 a	100 a	100 a
23	Pyroxasulfone	0.213 LB	A/A	HS	0 b	100 a	100 a	97.7 a	100 a
	Dual Magnum	1 PT/A		HS					
24	Chateau	2 OZ/A		HS	5 a	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					

LSD (P=.05) 1.68 0.39 2.19 19.99 22.50

Means followed by same letter do not significantly differ (P=.05, LSD)

Potato Herbicide Efficacy 2012 - Arlington, WI

Trt No.	Treatment Name	Rate	Unit	Grow Stg	% Injury 6/13/12	% Weed Control 6/13/12			
						COLQ	RRPW	VELE	YEFT
1	Untreated Check				0 c	0 c	0 c	0 f	0 a
2	Metribuzin	0.5 LB	A/A	HS	0 c	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
3	Lorox	1 LB/A		HS	0 c	97.7 a	65 b	83.3 abc	97.7 a
	Curbit	3 PT/A		HS					
4	NAI 1333	1.5 OZ/A		HS	0 c	97.7 a	98.3 a	91 ab	400 a
	Dual Magnum	1 PT/A		HS					
5	NAI 1333	2 OZ/A		HS	0 c	92.7 a	55 b	76 bcd	23.3 a
6	NAI 1333	2 OZ/A		HS	0 c	98.7 a	98.3 a	88.3 abc	98.3 a
	Dual Magnum	1 PT/A		HS					
7	NAI 1333	2.5 OZ/A		HS	0 c	83.3 a	55 b	53.3 de	55 a
8	NAI 1333	2.5 OZ/A		HS	0 c	96.7 a	96 a	90 abc	100 a
	Dual Magnum	1 PT/A		HS					
9	NAI 1333	3 OZ/A		HS	0 c	64.3 b	63.3 b	48.3 e	62.7 a
10	NAI 1333	3 OZ/A		HS	0 c	86.7 a	95 a	66.7 cde	96.7 a
	Dual Magnum	1 PT/A		HS					
11	NAI 1333	4.25 OZ/A		HS	0 c	98.7 a	100 a	86 abc	100 a
	Dual Magnum	1 PT/A		HS					
12	NAI 1333	5.5 OZ/A		HS	0 c	96.7 a	99.3 a	86 abc	100 a
	Dual Magnum	1 PT/A		HS					
13	Matrix	1.5 OZ/A		PO1	8.3 b	100 a	100 a	100 a	100 a
	NIS	0.25 % V/V		PO1					
14	Solida	1.5 OZ/A		PO1	11.7 a	100 a	100 a	100 a	100 a
	NIS	0.25 % V/V		PO1					
15	Callisto	1 OZ/A		HS	0 c	100 a	99.3 a	99.3 ab	99.3 a
	Dual Magnum	1 PT/A		HS					
16	Callisto	2 OZ/A		HS	0 c	100 a	99.3 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
17	Sharpen	1.5 OZ/A		HS	0 c	99.3 a	100 a	99.3 ab	99.3 a
	Dual Magnum	1 PT/A		HS					
18	Sharpen	2.5 OZ/A		HS	0 c	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					
19	Firstrate	0.25 OZ/A		HS	0 c	100 a	100 a	99.3 ab	99.3 a
	Dual Magnum	1 PT/A		HS					
20	Firstrate	0.5 OZ/A		HS	0 c	100 a	100 a	100 a	98.3 a
	Dual Magnum	1 PT/A		HS					
21	V-10142	0.4 LB	A/A	HS	0 c	99.3 a	100 a	98.7 ab	53.3 a
22	Pyroxasulfone	0.213 LB	A/A	HS	0 c	100 a	100 a	100 a	100 a
23	Pyroxasulfone	0.213 LB	A/A	HS	0 c	100 a	100 a	96.7 ab	100 a
	Dual Magnum	1 PT/A		HS					
24	Chateau	2 OZ/A		HS	0 c	100 a	100 a	100 a	100 a
	Dual Magnum	1 PT/A		HS					

LSD (P=.05) 2.72 17.13 24.93 23.40 179.21

Means followed by same letter do not significantly differ (P=.05, LSD)

Potato Herbicide Efficacy 2012 - Arlington, WI

Trt No.	Treatment Name	Rate	Unit	Grow Stg	% Injury 6/20/12	% Weed Control 6/20/12			
						COLQ	RRPW	VELE	YEFT
1	Untreated Check				0 a	0 f	0 d	0 f	0 d
2	Metribuzin	0.5 LB	A/A	HS	0 a	100 a	100 a	100 a	99.3 a
	Dual Magnum	1 PT/A		HS					
3	Lorox	1 LB/A		HS	0 a	83.3 bc	60 b	68.3 bcd	91.7 a
	Curbit	3 PT/A		HS					
4	NAI 1333	1.5 OZ/A		HS	0 a	92.7 ab	95 a	94.3 ab	97.7 a
	Dual Magnum	1 PT/A		HS					
5	NAI 1333	2 OZ/A		HS	0 a	76.7 c	23.3 c	48.3 de	36.7 c
6	NAI 1333	2 OZ/A		HS	0 a	97 ab	95 a	90 ab	97.7 a
	Dual Magnum	1 PT/A		HS					
7	NAI 1333	2.5 OZ/A		HS	0 a	40 e	13.3 cd	38.3 e	53.3 bc
8	NAI 1333	2.5 OZ/A		HS	0 a	93.3 ab	98.7 a	80 abc	97.7 a
	Dual Magnum	1 PT/A		HS					
9	NAI 1333	3 OZ/A		HS	0 a	59.3 d	56.7 b	51.7 cde	61.7 b
10	NAI 1333	3 OZ/A		HS	0 a	88.3 abc	93.3 a	80 abc	93.3 a
	Dual Magnum	1 PT/A		HS					
11	NAI 1333	4.25 OZ/A		HS	0 a	88.3 abc	99.3 a	88.3 ab	96 a
	Dual Magnum	1 PT/A		HS					
12	NAI 1333	5.5 OZ/A		HS	0 a	91.7 ab	93.3 a	86.7 ab	99.3 a
	Dual Magnum	1 PT/A		HS					
13	Matrix	1.5 OZ/A		PO1	0 a	98 ab	97 a	99.3 a	96.7 a
	NIS	0.25 % V/V		PO1					
14	Solida	1.5 OZ/A		PO1	0 a	97.7 ab	98.7 a	97 ab	98.3 a
	NIS	0.25 % V/V		PO1					
15	Callisto	1 OZ/A		HS	0 a	99.3 a	96.7 a	97.7 ab	96.7 a
	Dual Magnum	1 PT/A		HS					
16	Callisto	2 OZ/A		HS	0 a	100 a	95.3 a	97.7 ab	96.7 a
	Dual Magnum	1 PT/A		HS					
17	Sharpen	1.5 OZ/A		HS	0 a	99.3 a	100 a	99.3 a	94.3 a
	Dual Magnum	1 PT/A		HS					
18	Sharpen	2.5 OZ/A		HS	0 a	100 a	100 a	100 a	96.7 a
	Dual Magnum	1 PT/A		HS					
19	Firstrate	0.25 OZ/A		HS	0 a	100 a	100 a	98.3 a	94.3 a
	Dual Magnum	1 PT/A		HS					
20	Firstrate	0.5 OZ/A		HS	0 a	100 a	100 a	100 a	91.7 a
	Dual Magnum	1 PT/A		HS					
21	V-10142	0.4 LB	A/A	HS	0 a	98.3 a	100 a	97.7 ab	62.7 b
22	Pyroxasulfone	0.21 LB	A/A	HS	0 a	99.3 a	98.3 a	100 a	97.7 a
23	Pyroxasulfone	0.21 LB	A/A	HS	0 a	97.7 ab	98.3 a	94.3 ab	96.7 a
	Dual Magnum	1 PT/A		HS					
24	Chateau	2 OZ/A		HS	0 a	97.7 ab	98.3 a	98.3 a	98.7 a
	Dual Magnum	1 PT/A		HS					

LSD (P=.05) 0.00 14.76 22.16 29.75 17.82

Means followed by same letter do not significantly differ (P=.05, LSD)

Potato Herbicide Efficacy 2012 - Arlington, WI

Trt No.	Treatment Name	Rate	Unit	Grow Stg	Yield 8/22/12 (cwt/A)			
					B's	Cull's	A's	Total Yield
1	Untreated Check				38.60 f	5.45 f	65.22 h	109.26 i
2	Metribuzin	0.5	LB A/A	HS	67.03 ab	15.97 a-d	123.78 b-e	206.79 a-d
	Dual Magnum	1	PT/A	HS				
3	Lorox	1	LB/A	HS	48.28 def	8.59 c-f	93.05 e-h	149.92 ghi
	Curbit	3	PT/A	HS				
4	NAI 1333	1.5	OZ/A	HS	71.03 a	14.76 a-e	124.75 b-e	210.54 a-d
	Dual Magnum	1	PT/A	HS				
5	NAI 1333	2	OZ/A	HS	51.43 b-f	7.62 def	79.50 gh	138.55 hi
6	NAI 1333	2	OZ/A	HS	46.83 ef	8.59 c-f	113.74 c-g	169.16 d-h
	Dual Magnum	1	PT/A	HS				
7	NAI 1333	2.5	OZ/A	HS	58.93 a-e	6.66 ef	77.68 gh	143.26 hi
8	NAI 1333	2.5	OZ/A	HS	61.95 a-e	18.63 ab	129.47 a-e	210.06 a-d
	Dual Magnum	1	PT/A	HS				
9	NAI 1333	3	OZ/A	HS	53.97 b-f	7.50 def	93.53 e-h	155.00 fgh
10	NAI 1333	3	OZ/A	HS	54.69 a-f	6.17 ef	99.22 d-h	160.08 e-h
	Dual Magnum	1	PT/A	HS				
11	NAI 1333	4.25	OZ/A	HS	61.71 a-e	6.66 ef	100.67 d-h	169.04 d-h
	Dual Magnum	1	PT/A	HS				
12	NAI 1333	5.5	OZ/A	HS	54.09 b-f	8.11 c-f	83.01 fgh	145.20 ghi
	Dual Magnum	1	PT/A	HS				
13	Matrix	1.5	OZ/A	PO1	53.12 b-f	11.98 b-f	123.66 b-e	188.76 b-g
	NIS	0.25	% V/V	PO1				
14	Solida	1.5	OZ/A	PO1	59.65 a-e	21.05 a	131.53 a-d	212.23 a-d
	NIS	0.25	% V/V	PO1				
15	Callisto	1	OZ/A	HS	66.31 abc	16.21 a-d	139.76 abc	222.28 ab
	Dual Magnum	1	PT/A	HS				
16	Callisto	2	OZ/A	HS	63.65 a-d	18.03 ab	141.33 abc	223.00 ab
	Dual Magnum	1	PT/A	HS				
17	Sharpen	1.5	OZ/A	HS	49.61 c-f	10.65 b-f	142.78 abc	203.04 a-e
	Dual Magnum	1	PT/A	HS				
18	Sharpen	2.5	OZ/A	HS	67.16 ab	16.70 abc	135.64 a-d	219.49 abc
	Dual Magnum	1	PT/A	HS				
19	Firstrate	0.25	OZ/A	HS	48.28 def	12.22 a-f	116.52 c-f	177.02 c-h
	Dual Magnum	1	PT/A	HS				
20	Firstrate	0.5	OZ/A	HS	57.84 a-e	10.65 b-f	127.53 a-e	196.02 b-f
	Dual Magnum	1	PT/A	HS				
21	V-10142	0.4	LB A/A	HS	66.07 abc	10.77 b-f	124.39 b-e	201.22 a-e
22	Pyroxasulfone	0.213	LB A/A	HS	64.01 a-d	18.03 ab	162.62 a	244.66 a
23	Pyroxasulfone	0.213	LB A/A	HS	61.83 a-e	10.65 b-f	144.47 abc	216.95 abc
	Dual Magnum	1	PT/A	HS				
24	Chateau	2	OZ/A	HS	58.20 a-e	9.80 b-f	155.24 ab	223.25 ab
	Dual Magnum	1	PT/A	HS				

LSD (P=.05)

16.705

8.870

36.577

43.779

Means followed by same letter do not significantly differ (P=.05, LSD)