

Reflex combinations for weed control in Russet Burbank. Harlene Hatterman-Valenti and Collin Auwarter.

This study was conducted at the Northern Plains Potato Grower's Irrigation Research site near Inkster, ND to evaluate crop tolerance and weed control of Reflex +/- Dual or +/- Boundary as a pre-emergence treatment in Russet Burbank Potato. Wheat was the previous crop 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 May 21, 2010. Treatments were applied on June 4 (2 days after hilling) to the middle 2 rows. Crop injury and weed control were evaluated 14 and 45 days after application (DAA). Water was not a limiting as irrigation was scheduled every 3 to 4 d once potatoes had emerged following hilling. Potatoes were machine harvested September 29 and graded a few weeks later. Application, environmental, crop, and weed data are listed below:

Date:		6/4/10
Treatment:		PRE
Sprayer:	GPA:	20
	PSI:	40
	Nozzle:	8002
Air temperature (F):		67
Relative humidity (%):		77
Wind (MPH):		9
Soil moisture:		Adequate
Cloud cover (%):		0

No crop injury was observed following herbicide applications. The primary weeds that were evaluated were common lambsquarters, redroot pigweed, and green foxtail. Common lambsquarters was the most abundant, followed by green foxtail, and then redroot pigweed. At 14 DAA the only treatment that was significantly different (besides untreated) was Reflex @ 1 pt/a, which had 90% control of common lambsquarters while all other treatments provided >95% control. At 45 DAA, Reflex @ 1 pt/a + Boundary @ 1.5 pt/a and Sencor @ 0.67 lb/a + Outlook @ 16 fl oz/a provided significantly better common lambsquarters control than the other treatments (96 and 98%, respectively).

There were no significant differences among Russet Burbank tuber yield and grade.

Table 1. Weed Control 14 and 45 DAA.

Treatment	Rate	Unit	App Code	-----6/18/10-----			-----7/19/10-----		
				Colq	RRpw	Grft	Colq	RRpw	Grft
				-----% Control-----					
Untreated				0 c	0 b	0 b	0 c	0 b	0 b
Reflex 2SL	1	pt/a	A	90 b	100 a	89 a	90 b	100 a	96 a
Reflex 2SL	2	pt/a	A	96 a	100 a	90 a	91 b	100 a	96 a
Reflex 2SL	1	pt/a	A	95 a	100 a	90 a	91 b	100 a	94 a
Dual Magnum	1	pt/a							
Reflex 2SL	1	pt/a	A	97 a	100 a	94 a	96 a	100 a	96 a
Boundary	1.5	pt/a							
Matrix Outlook	1	oz/a	A	96 a	100 a	95 a	90 b	100 a	95 a
	16	fl oz/a							
Sencor 75DF	0.67	lb/a	A	100 a	100 a	91 a	98 a	100 a	96 a
Outlook	16	fl oz/a							
LSD (P ≤.05)				3.9	0	6.3	2.8	0	4.7

Table 2. Effect of herbicides on potato yield and grade.

Name	Rate	Unit	App Code	Total	<4 oz	4-6 oz	6-12 oz	>12 oz	>4 oz
Untreated				424 a	122 a	119 a	159 a	24 a	302 a
Reflex 2SL	1	pt/a	A	362 a	105 a	97 a	140 a	20 a	257 a
Reflex 2SL	2	pt/a	A	539 a	140 a	134 a	222 a	43 a	399 a
Reflex 2SL	1	pt/a	A	491 a	136 a	138 a	177 a	40 a	355 a
Dual Magnum	1	pt/a							
Reflex 2SL	1	pt/a	A	544 a	135 a	138 a	222 a	49 a	409 a
Boundary	1.5	pt/a							
Matrix Outlook	1	oz/a	A	489 a	130 a	140 a	182 a	38 a	359 a
	16	fl oz/a							
Sencor 75DF	0.67	lb/a	A	494 a	149 a	145 a	163 a	38 a	346 a
Outlook	16	fl oz/a							
LSD (P ≤.05)				166.4	46.1	59.3	76.2	25.3	131.2