

Pruvin for weed control in irrigated potato. 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 and compare the efficacy of Pruvín 25DF with Matrix 25DF on Russet Burbank Potato. Wheat was 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 May 17, 2010. Treatments were applied on June 4 (2 days after hilling) for the PRE applications and June 23 for the POST applications to the middle 2 rows. Crop injury and weed control were evaluated 14 and 45 DAA. Water was not a limiting factor as irrigation was scheduled every 3 to 4 d once potatoes had emerged following hilling. Potatoes were machine harvested September 30 and graded a few weeks later. Application, environmental, crop, and weed data are listed below:

Date:		6/4/10	6/23/10
Treatment:		PRE	POST
Sprayer:	GPA:	20	20
	PSI:	40	40
	Nozzle:	8002	8002
Air temperature (F):		64	65
Relative humidity (%):		89	83
Wind (MPH):		7	7
Soil moisture:		Adequate	Adequate
Cloud cover (%):		0	100

There was no crop injury observed during the trial. The primary weeds that were examined were common lambsquarters, redroot pigweed, and green foxtail. Common lambsquarters was the most prevalent of the three, followed by green foxtail, and then redroot pigweed. Both PRE treatments of Pruvín 25 DF @ 1 oz/a + Metribuzin 480F @ 8 fl oz/a, and Matrix @ 1 oz/a + Metribuzin 480F @ 8 fl oz/a had 97% control of common lambsquarters 14 DAA. All other PRE treatments had between 84-88% control of common lambsquarters 14 DAA. At 45 DAA, all POST treatments provided greater control of common lambsquarters compared to PRE treatments with the exception of the two previously mentioned PRE treatments (95% and 94%, respectively 45 DAA).

Yields showed no significant differences among treatments. The highest yielding treatments were Matrix @ 1 oz/a + Preference @ 0.2% v/v POST with 619 cwt/a, Matrix @ 0.5 oz/a + Preference @ 0.2% v/v POST with 590 cwt/a, and Pruvín 25 DF @ 1.5 oz/A PRE with 579 cwt/a. The lowest yielding treatments were Matrix @ 1.5 oz/a with 463 cwt/a, Pruvín 25 DF @ 1 oz/a + Preference @ 0.2% v/v POST with 470 cwt/a, Sencor 75 DF @ 0.67 lb/a + Select Max @ 16 fl oz/a + Destiny @ 1% v/v with 512 cwt/a, and untreated with 517 cwt/a.

Table 1. Weed Control 14 and 45 DAA.

Name	Rate	Unit	App Code	-----6/18/10-----			-----7/19/10-----		
				Colq	RRpw	Grft	Colq	RRpw	Grft
-----% Control-----									
Unt				0 c	0 b	0 b	0 e	0 b	0 b
Pruvin 25 DF	0.5	oz/a	A	85 b	100 a	95 a	84 d	100 a	99 a
Matrix	0.5	oz/a	A	84 b	100 a	99 a	84 d	100 a	100 a
Pruvin 25 DF	1	oz/a	A	88 b	100 a	98 a	84 d	100 a	98 a
Matrix	1	oz/a	A	85 b	100 a	95 a	86 cd	100 a	100 a
Pruvin 25 DF	1.5	oz/a	A	86 b	100 a	99 a	88 bcd	100 a	100 a
Matrix	1.5	oz/a	A	86 b	100 a	98 a	84 d	100 a	100 a
Pruvin 25 DF	1	oz/a	A	97 a	100 a	99 a	95 a	100 a	100 a
Metribuzin 480 F	8	oz/a	A						
Matrix	1	oz/a	A	97 a	100 a	98 a	94 ab	100 a	100 a
Metribuzin 480 F	8	oz/a	A						
Pruvin 25 DF	0.5	oz/a	B				86 cd	100 a	95 a
Preference	0.2	% v/v	B						
Matrix	0.5	oz/a	B				91 abc	100 a	99 a
Preference	0.2	% v/v	B						
Pruvin 25 DF	1	oz/a	B				91 abc	100 a	100 a
Preference	0.2	% v/v	B						
Matrix	1	oz/a	B				95 a	100 a	99 a
Preference	0.2	% v/v	B						
Pruvin 25 DF	1.5	oz/a	B				94 ab	100 a	99 a
Preference	0.2	% v/v	B						
Matrix	1.5	oz/a	B				94 ab	100 a	99 a
Preference	0.2	% v/v	B						
Pruvin 25 DF	1	oz/a	B				93 abc	100 a	99 a
Metribuzin 480 F	8	oz/a	B						
Preference	0.2	% v/v	B						
Matrix	1	oz/a	B				96 a	100 a	95 a
Metribuzin 480 F	8	oz/a	B						
Preference	0.2	% v/v	B						
Sencor 75 DF	0.67	lb/a	B				98 a	100 a	99 a
Select Max	16	oz/a	B						
Destiny	1	% v/v	B						
LSD (P≤ .05)				4	0	5	4	0	4

Table 2. Effect of herbicides on yield and grade.

Name	Rate	Unit	App Code	Total	<4 oz	4-6 oz	6-12 oz	>12 oz	>4 oz
-----cwt/a-----									
Unt				517 a	130 a	169 a	169 a	49 a	387 a
Pruvin 25 DF	0.5	oz/a	A	530 a	135 a	150 a	199 a	46 a	397 a
Matrix	0.5	oz/a	A	530 a	138 a	149 a	176 a	68 a	392 a
Pruvin 25 DF	1	oz/a	A	537 a	135 a	137 a	231 a	34 a	402 a
Matrix	1	oz/a	A	539 a	167 a	166 a	179 a	27 a	372 a
Pruvin 25 DF	1.5	oz/a	A	579 a	128 a	174 a	223 a	55 a	451 a
Matrix	1.5	oz/a	A	463 a	126 a	130 a	156 a	51 a	337 a
Pruvin 25 DF	1	oz/a	A	569 a	192 a	169 a	175 a	33 a	377 a
Metribuzin 480 F	8	oz/a	A						
Matrix	1	oz/a	A	533 a	147 a	136 a	220 a	31 a	387 a
Metribuzin 480 F	8	oz/a	A						
Pruvin 25 DF	0.5	oz/a	B	542 a	148 a	149 a	203 a	42 a	394 a
Preference	0.2	% v/v	B						
Matrix	0.5	oz/a	B	590 a	144 a	170 a	231 a	45 a	446 a
Preference	0.2	% v/v	B						
Pruvin 25 DF	1	oz/a	B	470 a	126 a	130 a	153 a	61 a	344 a
Preference	0.2	% v/v	B						
Matrix	1	oz/a	B	619 a	132 a	157 a	252 a	79 a	487 a
Preference	0.2	% v/v	B						
Pruvin 25 DF	1.5	oz/a	B	562 a	123 a	122 a	243 a	74 a	439 a
Preference	0.2	% v/v	B						
Matrix	1.5	oz/a	B	558 a	153 a	142 a	220 a	43 a	405 a
Preference	0.2	% v/v	B						
Pruvin 25 DF	1	oz/a	B	534 a	138 a	146 a	208 a	41 a	396 a
Metribuzin 480 F	8	oz/a	B						
Preference	0.2	% v/v	B						
Matrix	1	oz/a	B	563 a	113 a	136 a	254 a	59 a	450 a
Metribuzin 480 F	8	oz/a	B						
Preference	0.2	% v/v	B						
Sencor 75 DF	0.67	lb/a	B	512 a	137 a	151 a	200 a	25 a	375 a
Select Max	16	oz/a	B						
Destiny	1	% v/v	B						
LSD (P≤.05)				103	49	41	74	44	107