

WEED MANAGEMENT WORKSHOP

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Summaries of weed control, crop tolerance, and desiccation trials were presented during the two-hour workshop.

OUTLOOK[®] EFFICACY AND CROP TOLERANCE TRIALS

Outlook[®] efficacy trials were conducted at the University of Idaho Aberdeen R&E Center 1998-2000, Oregon State University Malheur Experiment Station 1998-1999, and Washington State University Prosser R&E Center in 2000. Treatments included Outlook, Sencor[®], and Matrix[®] applied alone, Outlook + Sencor, Outlook + Matrix, Matrix + Sencor, and Frontier[®] + Sencor. Outlook was applied at 13.65 oz/A at all locations. Sencor was applied at 0.67 lb/A at Aberdeen and Malheur, and 0.33 lb/A at Prosser. Matrix was applied at 1.5 oz/A at Aberdeen and Prosser, and 1 oz/A at Malheur. Frontier was applied at 27.3 oz/A. All treatments were applied preemergence just after hilling prior to potato emergence and sprinkler incorporated.

Redroot pigweed (data not shown): all herbicide treatments provided greater than 95% control at all locations/years.

Common lambsquarters (CHEAL): Outlook tank mixtures with Matrix or Sencor improved control compared to Outlook alone, and were comparable to Matrix + Sencor, although at Malheur in 1999, Outlook + Matrix resulted in only 87% CHEAL control (Table 1 and 2).

Hairy nightshade (SOLSA): Outlook tank mixtures provided greater control than Outlook alone, and were comparable or better than Matrix + Sencor (Tables 1 and 2). Outlook + Matrix, or Matrix + Sencor provided 93-100% CHEAL and SOLSA control at Prosser, WA in 2000 (data not shown).

Kochia (KCHSC) and Volunteer Oat (V.Oat): All tank mixture treatments and Sencor or Matrix alone resulted in greater than 90% control compared to Outlook alone at 68% and 63%, respectively .

Table 1. Weed control at Aberdeen R&E Center 1998, 1999, 2000 with preemergence applications of Outlook, Sencor, or Matrix alone, or in combination.

Herbicide	-----%control-----			
	CHEAL	SOLSA	KCHSC	V. OAT
Sencor	99a	75d	96bc	98a
Matrix	92bc	87c	92d	97a
Outlook	87c	90c	68e	63b
Outlook + Sencor	99a	98a	100a	99a
Outlook + Matrix	97ab	97ab	97abc	98a
Frontier + Sencor	100a	95ab	95cd	98a
Matrix + Sencor	95ab	94b	98ab	99a

Control values in the same column followed by the same letter are not significantly different

Data combined 1998, 1999, 2000

Common lambsquarters - CHEAL, hairy nightshade -SOLSA, Kochia -KCHSC, volunteer oat - V.Oat

Table 2. Weed control at Malheur, OR 1998 and 1999 with preemergence applications of Outlook, Sencor, or Matrix alone, or in combination.

Herbicide	-----%control-----			
	CHEAL		SOLSA	
	1998	1999	1998	1999
Sencor	100	100	62	93
Matrix	75	93	58	95
Outlook + Sencor	98	100	97	100
Outlook + Matrix	99	87	93	93
Frontier + Sencor	99	95	87	85
Matrix + Sencor	-	100	99	93
<i>LSD (0.05)</i>	<i>12</i>	<i>7</i>	<i>24</i>	<i>15</i>

Common lambsquarters - CHEAL, hairy nightshade -SOLSA

An Outlook tank mixture trial was conducted at the Aberdeen R&E Center in 2001. Outlook alone preemergence provided fair to excellent broad spectrum weed control (Table 3). Tank mixtures of Outlook and Eptam[®], Prowl[®], Sencor, Matrix, or Dual II[®] resulted in improved common lambsquarters and hairy nightshade control compared to Outlook alone or the tank mix partners (TMP's) alone. Outlook combined with Eptam or Matrix improved green foxtail or volunteer oat control compared to Outlook or those TMP's alone. Outlook + Sencor improved grass control compared to Outlook alone.

Table 3. Season-long weed control with preemergence dimethenamid-p and standard herbicides in potatoes:Aberdeen R&E Center 2001.

Treatment	Rate lb ai/A	Weed Control											
		AMARE		CHEAL		KCHSC		SOLSA		SETVI		V. OAT	
		6/30*	8/22*	6/30	8/22	6/30	8/22	6/30	8/22	6/30	8/22	6/30	8/22
Outlook	0.64	100	98.7	85	89.7	93.3	90	86.7	87.7	90	97.7	90	97.7
Prowl	1	80	75	88.3	75	86.7	96.3	0	0	90	86.7	90	83.3
Outlook + Prowl	0.64+ 1	100	93	100	99.7	100	99.3	96	90	93.3	99.3	93.3	96.3
Sencor	0.5	99.3	94.3	93	94.3	97.7	96.7	63.3	10	93.3	90	93.3	88.3
Outlook + Sencor	0.64+ 0.5	100	99.7	100	99.7	100	98	99	96.7	97.7	99.3	97.7	94.7
Matrix	0.023	99.7	94.3	86.7	77.7	88.3	87.7	88.3	83.3	88.3	93	88.3	96.3
Outlook + Matrix	0.64+ 0.023	100	99	96.7	92.7	98.3	91.7	97.7	91.3	96.3	97.7	96.3	96
Eptam	3	93.3	79.3	86.7	85	73.3	36.7	83.3	66.7	90	91.7	90	88.3
Outlook + Eptam	0.64+ 3	94.3	98	100	99.3	93.3	94	97.7	94.3	96.3	96	96.3	93
Dual II	1	86.3	70	75	78.3	58.3	50	63.3	53.3	90	93.3	90	93.3
Outlook + Dual II	0.64+ 1	100	96.3	95	93	93.3	94	96.3	95.3	93.3	97.7	93.3	96
Outlook + Prowl + Sencor	0.64+ 1+ 0.5	100	100	100	100	100	100	97.7	98.3	97.7	99.7	97.7	98.3
LSD(0.05)	-	7.46	10.67	9.84	11.46	12.64	11.30	6.82	13.55	5.67	6.03	5.67	9.61

*rating date

AMARE - redroot pigweed; CHEAL - common lambsquarters; KCHSC - kochia; SOLSA - hairy nightshade; SETVI - green foxtail; V.Oat - volunteer oat

Outlook tolerance trials were conducted 1998, 1999, and 2000 at the Aberdeen R&E Center, and the OSU Malheur Experiment Station. Herbicides were applied preemergence after hilling, and sprinkler incorporated similar to the efficacy trials on Russet Burbank potatoes all years at both locations, except at Malheur 1998 when Shepody potatoes were used. Outlook was applied at 1X, 2X, or 4X the proposed use rate of 13.65 oz/A. Frontier was applied at 2X the proposed use rate of 1.7 pt/A. Dual II was applied at 2X the proposed used rate of 1.4 pt/A, and Prowl was applied at 1.5X or 3X the proposed used rate of 2.4 pt/A.

Although injury as leaf malformation or stunting ranged from 0 to 43% as a result of herbicide treatments, there was no significant yield loss at any location during any year.

2001 MULTI-LOCATION HERBICIDE EVALUATION TRIALS

Trials were conducted at the University of Idaho Kimberly R&E Center and Parma R&E Center, and in a Rexburg, ID grower field. Treatments included three-way tank mixtures of Prowl or Dual II with Matrix + Sencor or Eptam + Sencor, and the developmental compounds Outlook, flumioxazin (Valor[®]), sulfentrazone (Spartan[®]) alone or tank mixtures. All treatments were applied preemergence just after hilling prior to potato emergence, and sprinkler or mechanically incorporated.

Visual weed control ratings were conducted just prior to row closure. Matrix + Sencor provided greater than or equal to 90% control of all weeds at all locations, including yellow nutsedge (CYPES) at Parma (Table 4). Three-way tank mixtures of Sencor + Prowl or Dual II + EPTAM or Matrix provided greater than or equal to 95% control of all weeds at all locations. Outlook alone resulted in common lambsquarters suppression in Parma (66.7% control) compared to 94.7% common lambsquarters control at Kimberly. Outlook alone provided greater than or equal to 90% control of all weeds other than common lambsquarters at all locations. Tank mixtures of Outlook + Prowl, Dual II, or Sencor resulted in improved common lambsquarters control at Parma compared to Outlook applied alone.

Sulfentrazone alone provided greater than or equal to 95% redroot pigweed, common lambsquarters, and hairy nightshade control at all locations, and suppression of grasses present at Kimberly (75%). Tank mixtures of sulfentrazone and Prowl or Dual II resulted in slightly greater grass control (82%). Flumioxazin alone resulted in 70 and 83.3% redroot pigweed control at Kimberly and Parma, respectively, compared to 91.3% redroot pigweed control at Rexburg. Flumioxazin alone provided 80 and 86.7% common lambsquarters control at Kimberly and Parma, respectively, and greater than or equal to 90% hairy nightshade control at all locations. Tank-mixing flumioxazin with Prowl improved redroot pigweed control at Kimberly, and common lambsquarters control at Parma compared to flumioxazin applied alone. Tank mixing flumioxazin with Dual II increased redroot pigweed control at Kimberly and Parma, and common lambsquarters control at Kimberly compared to flumioxazin applied alone. Flumioxazin + Prowl provided 93.3% grass control at Kimberly.

Outlook applied alone resulted in greater than 95% yellow nutsedge control at Parma (Table 4). Sulfentrazone provided 48% yellow nutsedge control, and flumioxazin provided little or no suppression. Tank mixtures of sulfentrazone + Prowl resulted in less control (22%) than sulfentrazone alone. Sulfentrazone or flumioxazin + Dual II provided greater than 95% yellow nutsedge control.

With the appropriate tank mix partner in a two-way tank mixture, Outlook, Sulfentrazone, or Flumioxazin provided equal to or greater broad spectrum weed control than the standard three-way tank mixtures included in the trials.

Table 4. Weed control at three Idaho locations with preemergence herbicides and tank-mixtures: 2001.

Treatment	Rate lb ai/A	Weed Control									
		Rexburg		Kimberly			Grass	Parma			CYPES
		AMARE	SOLSA	AMARE	CHEAL	SOLSA		AMARE	CHEAL	SOLSA	
		-----%-----									
Matrix + Sencor	0.023+ 0.5	93.3	99	100	100	98.3	90	98.3	90	100	95
Prowl + Eptam + Sencor	0.75+ 3+ 0.5	99.3	95	100	100	100	97.7	100	100	100	99.7
Dual II + Eptam + Sencor	1.34+ 3+ 0.5	96.3	97.7	100	100	100	96.7	100	100	100	100
Prowl + Matrix + Sencor	0.75+ 0.023+ 0.5	96.3	96	100	100	100	87.7	100	100	100	96.7
Dual II + Matirx + Sencor	1.34+ 0.023+ 0.5	98.3	96.3	100	100	100	94.7	100	100	100	100
Sulfentrazone	0.094	91.7	94.7	100	100	100	75	98.3	100	100	48.3
Sulfentrazone + Prowl	0.094+ 1	95.3	94.7	100	100	100	81	100	100	100	21.7
Flumioxazin	0.094	91.3	90	70	80	98.3	0	83.3	86.7	100	8.3
Flumioxazin + Prowl	0.094+ 1	93	91.7	85	84.7	96.7	48.3	81.7	95	100	10
Outlook	0.64	99	97.7	99.7	94.7	95	93	90	66.7	100	100
Outlook + Prowl	0.64+ 1	99.3	99.3	95	93.3	100	91	90	83.3	100	98.3
Outlook + Sencor	0.64+ 0.5	94.7	96	99.3	100	100	99	100	100	100	100
Sulfentrazone + Dual II	0.094+ 1	91.7	96.3	95	96.7	99.7	82.7	100	100	100	100
Flumioxazin + Dual II	0.094+ 1	89.7	95	96.3	93.3	96.7	78.3	100	83.3	100	100
Outlook + Dual II	0.64+ 1	96	97.7	100	98.3	100	93.3	93.3	83.3	100	100
LSD(0.05)	-	9.49	5.32	15.60	17.60	4.05	23.57	9.23	21.85	ns	19.89

AMARE redroot pigweed; SOLSA hairy nightshade; CHEAL common lambsquarters; CYPES yellow nutsedge, grass = wild oat, green foxtail, barnyardgrass mixture

COMPARISON OF TWO- AND THREE-WAY TANK MIXTURES FOR WEED CONTROL IN POTATOES: 2001 ABERDEEN R&E CENTER TRIAL

Dual II, Eptam, Matrix, Prowl, Sencor, and Sonalan[®] were applied in two- and three-way tank mix combinations at the University of Idaho Aberdeen R&E Center 2001. All treatments were applied preemergence just after hilling prior to potato emergence and sprinkler incorporated.

In general, the three-way tank mixtures resulted in broader weed spectrum control compared to the two-way tank mixtures. All three-way tank mixtures and all two-way mixtures including Sencor or Eptam provided greater than 90% season-long common lambsquarters control (Table 5). Matrix + Sencor + Eptam was the only treatment providing season-long hairy nightshade control greater than 90%

Table 5. Season-long weed control with two- and three-way tank mixed preemergence herbicides in 2001: Aberdeen R&E Center.

Treatment	Rating date	Weed Control							
		AMARE 8/27	KCHSC 8/27	SETVI 8/27	V. Oat 8/27	CHEAL 6/30 8/27		SOLSA 6/30 8/27	
	Rate lb ai/A	----- % -----							
Sencor									
+ Prowl	0.5 + 1.0	98	99.3	99	96.7	98.3	99.3	81.7	65
+ Dual II	0.5 + 1.34	99.3	99.3	99	99	99.7	99.3	83.3	76.7
+ Eptam	0.5 + 3.0	98	99.3	95	91.3	99.7	99.3	83.3	78.3
+ Sonalan	0.5 + 0.94	98	99.7	90	89.3	100	98	83.3	70
+ Matrix	0.5 + 0.023	99.3	98	96.3	90	100	99	90	80
Matrix									
+ Prowl	0.023 + 1.0	99.3	96.3	93.3	92.3	95	86	90	82.7
+ Dual II	0.023 + 1.34	94.7	91	87.7	91	93.3	85	90	83.3
+ Eptam	0.023 + 3.0	99	93	91.3	87.7	100	93	93.3	85
+ Sonalan	0.023 + 0.94	94	94.7	96.3	96.3	86.7	75	86.7	76.7
Eptam									
+ Prowl	3.0 + 1.0	84.7	87.7	96	94.7	96.7	94	83.3	75
+ Dual II	3.0 + 1.34	96.3	86.7	91.7	95	91.7	90	88.3	73.3
+ Sonalan	3.0 + 0.94	91.5	79	86.3	87.5	87.5	75.3	82	74.5
+ Matrix	3.0 + 0.023	99	94.7	94.7	94.7	98.3	90	88.3	82.7
Eptam + Sencor									
+ Prowl	3.0 + 0.5 + 0.75	98	99.3	94.7	94.7	98.3	96.3	90	84.3
+ Dual II	3.0 + 0.5 + 1.0	96.7	99	88.3	93	96.7	96.3	88.3	79.7
+ Sonalan	3.0 + 0.5 + 0.94	95	99	94.3	94.3	100	99	83.3	76.7
Matrix + Sencor									
+ Prowl	0.023 + 0.5 + 0.75	99	99.7	91.3	94.7	100	99.3	95	87
+ Dual II	0.023 + 0.5 + 1.0	99.7	98	93	90	100	98	95	88.7
+ Sonalan	0.023 + 0.5 + 0.94	99.7	99.7	93	92.3	100	99.7	91.7	88.3
+ Eptam	0.023 + 0.5 + 3.0	99.7	99.7	88.3	86.7	96.7	98	96.3	91.7
Prowl + Dual II									
+ Sencor	0.75 + 1.0 + 0.5	99.3	99.3	94	91.3	100	99.3	91.3	83.3
+ Matrix	0.75 + 1.0 + 0.023	99.3	96	95.3	95.3	95	91	90	83.3
+ Eptam	0.75 + 1.0 + 3.0	91.7	93	96	94.7	96.7	96	86.3	81.7
LSD (0.05)	-	5.74	7.35	8.82	8.92	6.29	6.4	9.08	15.11

AMARE redroot pigweed; CHEAL common lambsquarters; KCHSC kochia; SOLSA hairy nightshade; SETVI green foxtail; V. Oat volunteer oat

**PREEMERGENCE WEED CONTROL WITH FLUMIOXAZIN
OR SULFENTRAZONE: ABERDEEN R&E CENTER 2001**

Flumioxazin or sulfentrazone were applied alone or in tank mix combinations just after hilling prior to potato emergence, and sprinkler incorporated. Flumioxazin alone at the proposed 1X rate (0.094 lb ai/A) resulted in greater than 90% control of redroot pigweed, kochia, and hairy nightshade (Table 6).

Tank mixtures improved control of common lambsquarters and grasses. Sulfentrazone alone at the proposed 1X rate (0.094 lb ai/A) resulted in greater than 90% control of all broadleaf weeds present. Tank mixtures improved grass control. Flufenacet + sulfentrazone or flumioxazin provided the best grass control in this trial. Two-way tank mixtures with flumioxazin or sulfentrazone provided comparable broad spectrum weed control to Matrix + Sencor.

Table 6. Season-long weed control with preemergence sulfentrazone or flumioxazin applied alone or in tank mixtures with standard herbicides: Aberdeen R&E Center 2001.

Treatment	Rate Lb ai/A	Weed Control ^a					
		AMARE	CHEAL	KCHSC	SOLSA	SETVI	V. OAT
		-----%-----					
Sulfentrazone	0.047	84.7	94.7	99	77.7	36.7	75
Sulfentrazone	0.063	93	94.7	99	86	58.3	80
Sulfentrazone	0.094	96	96	99	94	43.3	76.7
Sulfentrazone	0.125	96	99	99	93	71.7	88.3
Sulfentrazone							
+ Prowl	0.094+1	97.7	99	99	95.3	88.7	79.3
+ Dual II	0.094+1	94	96.3	99	90.7	93.3	84.3
+ Outlook	0.094+0.64	96.3	99	99	94.3	94.7	82
+ Matrix	0.094+0.023	99	99	99	96.3	89.7	91.7
+ Sencor	0.094+0.5	97.7	99	99	90.7	90.3	87
+ Eptam	0.094+3	97.7	99	99	97.7	96	82.7
Flumioxazin	0.063	86.3	75	99	90	36.7	53.3
Flumioxazin	0.078	80	73.3	99	96	70	76.7
Flumioxazin	0.094	91.7	71.3	99	96.3	79.7	83.3
Flumioxazin	0.125	96	91.3	99	97.3	70	86.7
Flumioxazin	0.188	90.7	94.7	99	97.7	92.7	89.3
Flumioxazin							
+ Prowl	0.094+1	91.3	88.7	99	97.7	89.3	94.7
+ Dual II	0.094+1	94	89.7	99	96.3	94.7	87.7
+ Outlook	0.094+0.64	99	96.3	99	99	96.3	87.7
+ Matrix	0.094+0.023	94.3	88	99	91.3	90	88.7
+ Sencor	0.094+0.5	99	99	99	97.3	96.3	86.7
+ Eptam	0.094+3	92.3	92.3	97.7	96.3	91.3	81
Flufenacet	1.2	23.3	23.3	0	0	99	99
Sulfentrazone + Flufenacet	0.094+1.2	97.7	99	99	90.7	96	96
Flumioxazin + Flufenacet	0.094+1.2	94.3	86.7	99	97.3	97.3	95.7
Matrix + Sencor	0.023+0.5	97.7	96	99	78.3	93	86.7
LSD (0.05)	-	15.77	18.91	0.78	6.88	21.03	19.58

^aWeed control data from pre-harvest rating date September 7, 2001.

AMARE redroot pigweed; CHEAL common lambsquarters; KCHSC kochia; SOLSA hairy nightshade; SETVI green foxtail; V.Oat volunteer oat.

SUMMARY OF SULFENTRAZONE AND FLUMIOXAZIN POTATO TOLERANCE TRIALS

Sulfentrazone and flumioxazin are developmental herbicides with new mode of action for potatoes. They are applied preemergence and can be sprinkler incorporated. In general, low rates equal good broadleaf activity.

A Russet Burbank crop response to sulfentrazone has been observed in Idaho but not in Colorado or Oregon. A series of tolerance trials were conducted in Idaho and Washington 2000 and 2001. In 2000, at the Aberdeen R&E Center, Flumioxazin was applied to Russet Burbank in a weed-free trial at 0.047, 0.094, 0.125 lb ai/A. Sulfentrazone was applied to four potato varieties (Russet Burbank, Ranger Russet, Russet Norkotah, and Shepody) in weed-free trials at 0.094, 0.188 lb ai/A (1X, 2X the proposed use rate). In 2001, Sulfentrazone and flumioxazin were applied to six varieties in Idaho (Russet Burbank, Ranger Russet, Russet Norkotah, Shepody, Alturas, Bannock Russet), and four varieties in Washington (Russet Burbank, Ranger Russet, Russet Norkotah, Shepody), at 0.094, 0.188 lb ai/A (1X, 2X the proposed use rate).

Initial injury was observed in all trials on all varieties 2000 and 2001. In 2000, although sulfentrazone treatments resulted in Russet Burbank, Russet Norkotah, Ranger Russet, and Shepody plant height reduction at row closure, there were no yield differences between all sulfentrazone treatments and the untreated controls. However, U.S. No. 1 tuber yield was less in the 0.125 lb ai/A Flumioxazin treated plots compared to the untreated control plots in 2000. In Idaho, 2001, at row closure, sulfentrazone, and flumioxazin treatments resulted in plant height reduction of the Russet Burbank and Bannock Russet varieties, and at mid-bulking of the Ranger Russet and Russet Norkotah varieties compared to the untreated controls of each variety. All varieties had less U.S. No. 1 and total tuber yield in all herbicide treatments compared to untreated control in 2001. There were no yield differences in Washington in 2001. These multi-variety trials will be repeated in Idaho and Washington in 2002.

**POTATO VARIETY TOLERANCE TO PROWL, DUAL, OR MATRIX:
ABERDEEN R&E CENTER 1997-1998**

Trials were conducted at the Aberdeen R&E Center in 1997 and 1998 to determine the potato varietal response to preemergence (PRE) or postemergence (POST) applications of Prowl, Dual, or Matrix. Eight potato varieties were tested: Russet Burbank, Bannock Russet, Frontier Russet, Gem Russet, Umatilla Russet, Alturas, A84118-3, and IdaRose. Preemergence herbicide treatments were applied just after hilling prior to potato emergence, and sprinkler incorporated. Postemergence herbicide treatments were applied when potatoes were 6 to 8 inches in height. Herbicide rates were 1X or 2X the labeled use rate: Prowl 2.4 and 4.8 pt/A, Dual 1.4 and 2.8pt/A, Matrix 1.5 and 3.0 oz/A.

Injury ratings were combined over years. There was initial injury resulting from PRE Dual or Prowl, and POST Matrix, Dual, or Prowl (Table 7). There was no significant year x variety herbicide interaction, so tuber yields were averaged over varieties and years. Total tuber yield in the POST Dual 2X treated plots was less than in the weed-free controls (Table 8). PRE Prowl 1X and 2X treatments resulted in No.1 and total tuber yields greater than the weed-free controls. POST Prowl 1X and 2X treated No.1 and total tuber yields were less than the weed-free control. Matrix at either rate or timing did not affect tuber yields.

Table 7. Crop injury resulting from PRE or POST Prowl, Dual, or Matrix:
Aberdeen R&E Center, 1997 and 1998

Herbicide	Prowl				Dual				Matrix			
	PRE		POST		PRE		POST		PRE		POST	
	1X	2X	1X	2X	1X	2X	1X	2X	1X	2X	1X	2X
-----% injury-----												
Russet Burbank	8	10	49	69	8	34	40	69	0	0	23	32
Bannock Russet	1	2	38	53	3	9	31	48	0	0	30	36
Frontier Russet	1	3	41	55	1	2	20	36	0	0	6	10
Gem Russet	1	2	51	68	1	3	28	48	0	0	26	29
Umatilla Russet	1	3	50	64	0	1	33	54	0	0	16	25
Alturas	1	2	33	53	1	4	31	48	0	0	20	28
A84118-3	1	5	40	56	1	2	31	48	0	0	12	17
IdaRose	2	4	51	63	1	4	21	38	0	0	14	20

Table 8. Us No. 1 and total tuber yields resulting from untreated control, and Prowl or Dual PRE or POST treatments. Aberdeen R&E Center 1997 and 1998.

	Untreated Control	Dual				Prowl			
		PRE		POST		PRE		POST	
		1X	2X	1X	2X	1X	2X	1X	2X
Cwt/A									
US No 1's	322	327	345	327	324	344	346	283	242
Total tuber	431	439	446	431	420	463	457	408	349

POTATO DESICCATION AND LATE-SEASON HAIRY NIGHTSHADE CONTROL: ABERDEEN R&E CENTER 2001

Desiccation treatments included sequential applications of carfentrazone (applications one week apart) with methylated seed oil (MSO) or Silwet, alone or tank mixed with Reglone[®] (diquat), or Des-I-Cate II[®] (endothall); or single applications of Rely[®] (glufosinate ammonium), Boa[®] (paraquat), Reglone (diquat), carfentrazone, sulfuric acid, or a formulated sulfuric acid product - CT-311.

Late season hairy nightshade control was rated one, two, and three weeks after application. Rely + ammonium sulfate (AMS), Rely+ SuperTin[®] + AMS, Rely + Hasten[®] (ethylated seed oil), Reglone, sulfuric acid, and CT-311 single applications resulted in greater than 90% hairy nightshade control one week after treatment (Table 9). All Carfentrazone treatments resulted in greater than 85% one week after the second application. All treatments except Boa, Des-I-Cate II, or 30% CT311 (Sulfuric acid) provided greater than 88% hairy nightshade control three weeks after the initial application was made.

Table 9. Potato desiccation and late-season hairy nightshade control: Aberdeen R&E Center 2001.

Treatment	Rate lb ai/A	Timing ^c	Potato desiccation				Hairy nightshade control			
			8/22*	8/31	9/4	9/12	8/22	8/31	9/4	9/12
			-----%							
Untreated Control			0	15	36.7	80	0	0	0	0
Carfentrazone ^a + carfentrazone ^a	0.025+ 0.025	A B	76.7	76.7	99.3	100	63.3	88.3	97.3	98.3
Carfentrazone ^b + carfentrazone ^b	0.025+ 0.025	A B	80	88.3	99.7	100	75	86.7	97	97.3
Carfentrazone ^a + carfentrazone ^a	0.0375+ 0.0375	A B	86.7	88.3	99.7	100	81.7	93.3	98.7	98.3
Carfentrazone ^b + carfentrazone ^b	0.0375+ 0.0375	A B	82.7	82.7	99.3	99.7	70	86.7	97.3	94
Carfentrazone ^a + carfentrazone ^a	0.05+ 0.05	A B	88.3	86.7	99.3	100	78.3	93.3	98.3	98.7
Carfentrazone ^b + carfentrazone ^b	0.05+ 0.05	A B	83.3	94	97.7	100	63.3	88.3	96	98.7
Carfentrazone ^a + endothall + carfentrazone ^a + endothall	0.0375+ 0.5+ 0.0375+ 0.5	A B	89.3	96.3	99	100	76.7	84.3	91.3	90.7
Carfentrazone ^a + endothall + carfentrazone ^a + endothall	0.05+ 0.5+ 0.05+ 0.5	A B	88.3	93	99.7	100	81.7	88.3	92.7	91
Carfentrazone ^a + diquat + carfentrazone ^a + diquat	0.025+ 0.25+ 0.025+ 0.25	A B	89.3	96.3	100	100	81.7	93.3	99.3	99
Carfentrazone ^a + diquat + carfentrazone ^a + diquat	0.0375+ 0.25+ 0.0375+ 0.25	A B	91.7	97.7	100	100	87.7	95	99.3	99.7
Carfentrazone ^a + diquat + carfentrazone ^a + diquat	0.05+ 0.25+ 0.05+ 0.25	A B	90	97.7	100	100	86.7	95	99.3	99.7
Carfentrazone ^a	0.075	A	90	99	99	100	80	88.3	89.7	87.7
Carfentrazone ^a + carfentrazone ^a	0.05+ 0.05	A B	63.3	81.7	98	100	66.7	83.3	96.8	98.1
Carfentrazone ^a + carfentrazone ^a	0.075+ 0.075	A B	76.7	86.7	99.7	100	75	90	99	99
Endothall ^a	0.5	A	21.7	53.3	91.3	88.7	15	26.7	43.3	36.7
Glufosinate + AMS Plus	0.375+ 1% v/v	A	97.7	99	99.3	100	91.3	85	91.7	93.7
Glufosinate + Super-Tin+ AMS Plus	0.375+ 0.1875+ 1% v/v	A	96.3	99	99.3	100	91.7	95	94.7	94.7
Glufosinate + Hasten	0.375+ 0.25% v/v	A	91.3	96.3	100	100	75	90	98.3	98.7
Diquat ^c + diquat ^c	0.25+ 0.25	A B	95.7	97.7	100	100	91	94	96	91
Diquat ^c	0.5	A	97.3	97.7	98	99.7	92.7	93.3	93.7	95.3
Diquat ^c	0.375	A	99	99	99.7	100	96	93	93	91.3
Paraquat ^c	0.47	A	96.3	99	99.3	99.3	78.3	81.7	83.3	80
Sulfuric Acid (CT-311) ^d	30% v/v	A	94.8	98.7	98.7	99.7	83.2	84.3	84.7	80
Sulfuric Acid (CT-311) ^d	100% v/v	A	99.8	99	99	99.7	86.7	89.7	89.7	88.3
Sulfuric Acid LSD(0.05)	100% v/v -	A -	99 14.7	99.7 7.1	99.7 4.1	99.7 0.6	93 17.6	90 9.5	89.7 9.0	89.7 12.5

^a Treatment included methylated seed oil at 1qt/A.

^b Treatment included Silwet L-77 (organo-silicone surfactant) at 0.125% v/v.

^c Treatment included non-ionic surfactant at 0.25% v/v.

^d CT-311 is an experimental formulation of sulfuric acid, property of Cheltec, Inc.

^e Timing 'A' and 'B' applications were applied August 14 and August 22, 2001, respectively.

*8/22/01 ratings were conducted just prior to Application B