

Winter Lentil Herbicide Study

165-0304-H-WILE-T

Location: Jim Thompson	Seeding Date: October 20, 2003
Branch: Tekoa	Soil Texture: Silt loam
Rainfall (Ave.): 22 inch	Organic Matter: 4.18
Crop: Winter lentils	pH: 6.2
Variety: Morton	
Rotation: 2003 Spring barley	
2002 Winter wheat	

	Pre-Emerg. Appl. Conditions	Spring Application Conditions
Date Treated	October 27, 2003	April 7, 2004
Air Temperature	52°	40°
Soil Temperature	42°	42°
Weather	Clear	Clear
Wind	0-2	0
Gallons/ac	20	20
Pressure	24	24
Nozzle	8002	8002
Stage of Growth	Lentils sprouted	Lentils 1 – 1 ½ inch, Branching Mayweed ¼-2 ½" PL ¼-3 ½"

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
1.	Pursuit		3oz.	55	15	0
2.	Pursuit + Prowl		3oz. + 24oz.	63	3	7
3.	Pursuit + Prowl	Sencor	3oz. + 24oz. / 4oz.	88	78	15
4.	Pursuit + Sencor		3oz. + 4oz.	50	10	7
5.	Pursuit + Sencor		3oz. + 6oz.	73	8	8
6.	Pursuit + Sencor	Sencor	3oz. + 4oz. / 4oz.	92	45	27
7.	Pursuit	Sencor	3oz. / 4oz.	92	52	17
8.	CHECK		-----			
9.	Pursuit	Sencor	3oz. / 6oz.	93	85	40
10.	Pursuit + Axiom		3oz. + 10oz.	63	15	10
11.	Pursuit + Outlook		3oz. + 16oz.	45	28	30
12.	Pursuit + Dual Magnum		3oz. + 24oz.	60	7	20
13.	Pursuit + Spartan		3oz. + 4oz.	57	52	38
14.	Axiom		10oz.	8	3	10
15.	Axiom	Sencor	10oz. / 4oz.	82	68	42
16.	CHECK		-----			
17.	Axiom + Prowl		10oz. + 24oz.	32	8	20
18.	Prowl		24oz.	23	2	7
19.	Prowl + Sencor		24oz. + 4oz.	22	3	10
20.	Prowl	Sencor	24oz. / 4oz.	87	57	25
21.	Dual Magnum		24oz.	15	3	13
22.	Spartan		4oz.	32	60	52
23.	Sandea		0.67oz.	83	95	12
24.	Karmex		24oz.	7	50	0

Comments

This trial was established near Tekoa, Washington. The purpose of the study was to gain experience with weed control programs in winter lentils. Both registered and non-registered materials were evaluated. The site was seeded directly into spring barley stubble with a set of John Deere 455's on October 20, 2003. The lentils were seeded into moisture. A ½ inch of precipitation occurred on October 15-16. The Pre-emergence treatments were applied on October 27 when the lentils were sprouted. The next significant rain event occurred on November 10. The lentils did not emerge until spring.

Direct Comparisons

PURSUIT PLUS PROWL

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
1.	Pursuit		3oz.	55	15	0
2.	Pursuit + Prowl		3oz. + 24oz.	63	3	7

It appears from the above applications of Pursuit the mayweed is most likely resistant to the ALS mode of action. The prickly lettuce appears to be a mixed population of resistant and susceptible plants. This site was located close to a stream where prickly lettuce is routinely allowed to go to seed without herbicide applications. Weed seeds from these plants probably blow throughout the area the trial was located. The addition of Prowl did slightly improve the control of prickly lettuce.

PROWL TREATMENTS

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
18.	Prowl		24oz.	23	2	7
19.	Prowl + Sencor		24oz. + 4oz.	22	3	10
2.	Pursuit + Prowl		3oz. + 24oz.	63	3	7

Prowl by itself did provide some control of prickly lettuce. However, it also produced crop injury which was still evident on June 8.

PRE-EMERGENCE SENCOR APPLICATIONS

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
1.	Pursuit		3oz.	55	15	0
4.	Pursuit + Sencor		3oz. + 4oz.	50	10	7
5.	Pursuit + Sencor		3oz. + 6oz.	73	8	8
19.	Prowl + Sencor		24oz. + 4oz.	22	3	10

The addition of 4 ounces of Sencor, pre-emergence, did little to increase control of prickly lettuce or mayweed. Six ounces of Sencor Pre-emergence did increase activity on prickly lettuce, however this is a very high rate going into winter from a potential injury standpoint.

POSTEMERGENCE SENCOR APPLICATIONS

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
1.	Pursuit		3oz.	55	15	0
7.	Pursuit	Sencor	3oz. / 4oz.	92	52	17
9.	Pursuit	Sencor	3oz. / 6oz.	93	85	40
2.	Pursuit + Prowl		3oz. + 24oz.	63	3	7
3.	Pursuit + Prowl	Sencor	3oz. + 24oz. / 4oz.	88	78	15
6.	Pursuit + Sencor	Sencor	3oz. + 4oz. / 4oz.	92	45	27
18.	Prowl		24oz.	23	2	7
20.	Prowl	Sencor	24oz. / 4oz.	87	57	25

Following Pre-emergence applications with post-emergence applications of Sencor in the spring did improve weed control, however it also dramatically increased crop injury beyond what we consider acceptable.

AXIOM APPLICATIONS

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
14.	Axiom		10oz.	8	3	10
17.	Axiom + Prowl		10oz. + 24oz.	32	8	20
15.	Axiom	Sencor	10oz. / 4oz.	82	68	42

Axiom is not labeled on lentils. As seen in the above treatments, it is injurious to the crop and added little to weed control.

MISC. APPLICATIONS

	Pre-Emerg.	Spring Appl.	Rate	% Control (6/8/04)		%Crop Resp.
				Prickly L.	Mayweed	
21.	Dual Magnum		24oz.	15	3	13
12.	Pursuit + Dual Magnum		3oz. + 24oz.	60	7	20
22.	Spartan		4oz.	32	60	52
13.	Pursuit + Spartan		3oz. + 4oz.	57	52	38
11.	Pursuit + Outlook		3oz. + 16oz.	45	28	30
23.	Sandea		0.67oz.	83	95	12
24.	Karmex		24oz.	7	50	0

We screened several materials which are not registered on lentils. Of the above materials, the only one that is labeled on lentils is Outlook. None of the materials or combinations gave adequate weed control and with the exception of Karmex, produced significant crop injury.