

2010 Onion Weed Control Trials

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Summary: Shepherd's purse was the main weed at these two trials. Goal + Buctril at 6.0 + 16.0 ounces/A at the 2nd true leaf stage gave the best weed control. Weed Pharm (20% acetic acid) and Biolink (an organic herbicide) also provided good control of shepherd's purse but were more phytotoxic. Starane was also tested and was only moderately effective on shepherd's purse; it was very safe on the onions.

Methods: Two trials were conducted in cooperation with Jose Valdez of D'Arrigo Brothers east of King City. Each plot was one 80-inch bed wide by 10 feet long and replicated three times in a randomized complete block design. Both trials were planted with the variety 'Tamara' in early April and the post plant applications were made at the 2nd true leaf stage: trial No. 1 on May 7 and trial No. 2 on May 13. All applications were made with a CO₂ backpack sprayer with two passes of a one-nozzle wand with an 8008E tip at 30 psi applying the equivalent of 72 gallons per acre. The soil at the site was Metz complex with loamy sand surface texture that had the following characteristics: pH – 8.1; organic matter content – 0.84%; sand - 80; silt - 10; clay – 10%. Weed Pharm is 20% acetic acid and Biolink is an experimental organic herbicide.

Results: *Trial No. 1* was over sprayed with Buctril, but we continued with the trial to evaluate yield impacts of the various treatments. Shepherd's purse was the dominant weed at this site and all weed materials provided further weed control (than the Buctril overspray) except Goal Tender and Starane (Table 1). Yield ranged from 76.0 to 82.8 tons/A and there were no significant differences between the treatments in total tonnage, bulbs/A or lbs/bulb. In *Trial No. 2* shepherd's purse was also the main weed. Goal Tender and Starane, were weak on this weed on the first evaluation date on May 13, while Biolink and Buctril provided the most complete control. On May 27, the combination of Goal Tender + Buctril provided the best weed control and lowest weeding time. Weed Pharm and Biolink also had good weed control on this date, but had higher phytotoxicity ratings. There were no significant differences in tonnage or bulbs per acre between the treatments, but Biolink had the lowest mean bulb weight.



Shepherd's purse size and onion size at application on May 7

Shepherd's purse control under various treatments:



Goal



Goal + Buctril



Buctril



Starane



Weed Pharm



Onion response to Weed Pharm
One hour after treatment



Shepherd's purse response to Weed Pharm
one hour after treatment (note the change in
color of the shepherd's purse and laying over
of the onion plant)

Table 1. Trial No. 1. Weed and phytotoxicity rating and yield evaluation

Treatment	Material/A	a.i./A lbs	May 27		October 14		
			Weed rating ¹	Phyto ²	Tons/A	Bulbs/A	lbs/bulb
Untreated	----	----	7.0	1.0	80.3	132,119	1.22
Goal Tender 4F	6.0 oz	0.188	7.0	1.3	79.8	127,323	1.26
Goal Tender 4F Buctril 2EC	6.0 oz 16 oz	0.188 0.25	10.0	2.0	81.3	128,195	1.27
Buctril 2EC	16 oz	0.25	10.0	2.7	79.5	132,555	1.21
Weed Pharm	100% v/v	100%	10.0	3.3	81.2	134,299	1.22
Starane 1.5	0.67 pint	0.125 ae	7.7	2.3	82.8	132,119	1.25
Biolink	9.0% v/v	9%	NA	NA	76.0	119,474	1.27
		Pr>Treat	<0.001	0.069	0.855	0.924	0.892
		Pr>Block	0.402	0.178	0.889	0.939	0.981
		LSD _{0.05}	0.9	NS	NS	NS	NS

1 – Weed rating scale: 0 = no weed control to 10 weed completely dead; 2 – Phytotoxicity rating: 0 = crop healthy to 10 = crop dead.

Table 2. Trial No. 2. Weed evaluations on three dates, weeding time, phytotoxicity ratings and yield evaluation

Treatment	Material/A	a.i./A lbs	May 13		May 27				September 3		
			S. purse Rating ¹	Phyto ²	Weed count 15 ft ²	% weed reduction ³	Weed time (hr/A)	Phyto ²	Tons/A	Bulb/A	lbs/bulb
Untreated	----	----	3.3	1.0	27.3	---	15.3	0.0	71.5	131,538	1.09
Goal Tender 4F	6.0 oz	0.188	3.7	1.0	18.7	32	12.8	1.0	69.6	140,985	0.99
Goal Tender 4F Buctril 2EC	6.0 oz 16 oz	0.188 0.25	8.0	2.7	1.7	94	2.3	2.3	70.7	143,165	0.99
Buctril 2EC	16 oz	0.25	8.0	2.0	16.0	41	11.2	2.3	72.3	133,718	1.08
Weed Pharm	100% v/v	100%	7.3	5.3	5.0	82	4.3	3.0	64.1	120,637	1.06
Starane 1.5	0.67 pint	0.125 ae	2.7	2.0	12.0	56	4.8	1.3	67.4	141,712	0.96
Biolink	9.0% v/v	9%	8.3	7.3	7.7	72	4.4	5.7	59.7	140,258	0.85
		Pr>Treat	<0.001	<0.001	0.050	---	0.079	<0.001	0.319	0.690	0.037
		Pr>Block	0.262	0.909	0.652	---	0.150	0.936	0.013	0.077	0.079
		LSD _{0.05}	0.8	1.2	20.5	---	NS	1.5	NS	NS	0.14

1 – Weed rating scale: 0 = no weed control to 10 weed completely dead; 2 – Phytotoxicity rating: 0 = crop healthy to 10 = crop dead; 3 – percent weed control relative to the untreated control.