Project No: 13C 3419 3297

Title: Weed Control in Red Raspberries

Personnel: Timothy W. Miller, WSU NWREC
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Reporting Period: 2004-05

Accomplishments: Weed control and crop injury were rated in three varieties of red raspberries planted May 7, 2004 at WSU NWREC and treated twice with one of nine different herbicides.

Results: There were no significant differences in growth response among the three varieties tested, so those data are presented together in the table below. Of the nine herbicides tested, only Prowl was providing >85% weed control by the late summer evaluation. Weed control with Callisto was good (80%), but this product severely reduced the number of primocanes produced compared to non-treated raspberries (1.4 and 4.9 primocanes, respectively). Herbicide choice did not significantly affect raspberry crown survival. Length of primocanes in Prowl-treated plots was greater than for any other treatment; this was likely due to inadequate weed control in non-treated plots. Other herbicides did not shorten primocanes in relation to primocanes from non-treated raspberry plants.

Table. Weed control and baby raspberry[a] response to several herbicides.

Treatment[b]	Rate	Weed control[c]		Crown number[c]	Primocane number[c]	Avg. cane length[c]
	product/a	%	%	no/plot	no/crown	inches
Visor	1.5 pt	18	35	2.8	4.9	6
Prowl	7.3 pt	95	87	3.7	6.7	13
Spartan	5.3 oz	15	42	3.7	6.8	8
Goal	1.5 pt	88	53	3.2	4.6	7
Cobra	1.5 pt	55	8	2.8	3.6	5
Chateau	2.2 oz	62	67	3.0	4.6	8
Dual Magnum	0.8 pt	0	32	2.9	4.3	5
Outlook	0.8 pt	0	28	3.4	7.4	6
Callisto + coc	6.4 fl. oz + 1%	85	80	1.3	1.4	7
Control	---	100	20	3.4	4.9	6
$LSD_{0.05}$	---	22	21	ns	3.4	2

[a]Raspberry crowns transplanted May 7, 2004
[b]Herbicides applied May 12 and July 15, 2004; row middles mowed July 13, 2004; coc = crop oil concentrate (v/v).
[c]Weed control evaluated July 9 and September 7, 2004; cane parameters measured September 9, 2004.

Publications:
Results will be presented at Small Fruit Workshops in Lynden (December, 2004) and Vancouver (March, 2005).

Project No: 13C 3419 3297

Title: Weed Control in Red Raspberries

Personnel: Timothy W. Miller, WSU NWREC
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Reporting Period: 2005-06

Accomplishments: Two weed control trials were conducted in raspberries during 2005-06. The first evaluated weed control and crop injury in three varieties of red raspberries and treated twice with one of nine different herbicides. The second trial was a herbicide efficacy trial on yellow nutsedge (*Cyperus esculentus*).

Results:

Baby raspberry trial: This was the second year of a trial conducted on three varieties of red raspberry planted in May, 2004 at WSU NWREC. All canes were mowed off at ground level January 19, 2005, herbicide treatments were applied February 3, 2005, and primocane growth and weed control was noted during 2005. There were no significant differences in growth response among the three varieties tested ('Meeker', 'Tulameen', and BC 8934-41), so those data are presented averaged across variety (Table 1). Primocane numbers were greatest following treatment with Prowl (18.6 canes/m), indicating that this treatment did not injure raspberry. Cane counts in all other treatments were statistically similar, except for raspberry crowns treated with Cobra, which produced 5.3 canes/m. Primocane length did not statistically differ among treatments, although this parameter displayed about the same pattern of response to herbicide as primocane number (e.g., Prowl-treated raspberry primocanes tended to be longer and Cobra-treated primocanes tended to be shorter). Of the nine herbicides tested, no products were providing better than fair weed control by the late summer evaluation (data not shown). These data, when combined with data from a similar trial conducted in 2002-03, should result in non-bearing raspberry labels for many of these products.

Yellow nutsedge control trial: This trial was conducted in a raspberry field near Woodland, WA infested with yellow nutsedge (Tom Peerbolt and Jerry Dobbins, cooperators). Herbicides were applied in the row April 19 (PRE) and June 8 (POST). Early control (evaluated June 29) was best with Casoron or Sandea giving 97 and 90%, respectively (Table 2). Treatments did not statistically differ at the time of the late-August evaluation, but only Casoron was still providing >80% weed control. Based on these data, repeat applications will be necessary to fully control yellow nutsedge. Berry yield was not monitored in this trial, but there were no obvious herbicide effects on fruiting of raspberry floricanes during 2005. Plot flags were left in the field because primocanes still need to be counted. That data will be collected during October or November, 2005.

Table 1. Weed control and baby raspberry[a] response to several herbicides.

Treatment[b]	Rate	Primocane number[c]	Avg. cane length[c]
	product/a	no/meter	inches
Visor	1.5 pt	8.6	63.7
Prowl	7.3 pt	18.6	80.2
Spartan	5.3 oz	9.0	71.7
Goal	1.5 pt	9.6	62.6
Cobra	1.5 pt	5.3	54.6
Chateau	2.2 oz	10.1	76.5
Dual Magnum	0.8 pt	8.7	64.7
Outlook	0.8 pt	7.2	64.0
Callisto + coc	6.4 fl. oz	7.8	65.3
Control	---	9.9	65.6
$LSD_{0.05}$	---	4.5	ns

[a]Raspberry crowns transplanted May 7, 2004 and canes mowed at ground level January 19, 2005.
[b]Herbicides were applied February 3, 2005, mixed with glyphosate at 3 pts/a to control emerged weeds; coc = crop oil concentrate (1% v/v).
[c]Cane parameters measured September 7, 2005.

Table 2. Yellow nutsedge control after application of several herbicides.

Treatment[a]	Rate	Timing	Weed control	
			June 29	August 24
	product/a		%	%
Casoron	75 lbs	PRE	97	82
Dual Magnum	1.3 pt	PRE	62	68
Outlook	1.7 pt	PRE	77	77
Chateau	3 oz	PRE	67	42
Sinbar	2 lbs	PRE	67	72
Spartan	6.4 oz	PRE	43	55
Basagran + coc	2 pt	POST	47	50
Sandea + nis	1 oz	POST	90	55
Untreated	---	---	0	0
$LSD_{0.05}$	---	---	32	ns

[a]coc = crop oil concentrate (1% v/v); nis = nonionic surfactant (0.25%, v/v).

Publications:

Results will be presented at the Western Washington Horticultural Association meeting in SeaTac (January, 2006) and WSU Vancouver (March, 2006).