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Title: AY Raspberry for Perennial Weed Control

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Accomplishments: This trial evaluated six non-selective weed control herbicides for control of Canada thistle and other perennial weeds using an Alternate Year (AY) bearing system.

Results:

The trial was conducted in a raspberry field near Burlington, WA (Sakuma Brothers Farm, cooperator) infested with thick patches of Canada thistle (*Cirsium arvense*) and spotty infestations of white clover (*Trifolium repens*), and common dandelion (*Taraxacum officinale*). Herbicides were applied to primocanes and weeds May 2, 10, and 18 and June 1 (all POST, preharvest). Remaining Canada thistle stems were removed by hand July 1. Berries were sampled July 20, and postharvest herbicides were August 7 (all POST). Weed control was evaluated May 4 and 12 and again on August 11. Tested conventional herbicides were Gramoxone Extra (paraquat), Goal (oxyfluorfen), and Rely (glufosinate), and tested organic herbicides were Weed Pharm (vinegar product containing 20% acetic acid), Matran 2 (clove oil), and Interceptor (pine oil). The experimental design was a randomized complete block with four replicates.

Fruit yield did not differ by herbicide treatments (Table 1), but fruiting was very spotty due to severe winter injury in the test row. Many gaps in the raspberry row were evident in May, and many of these gaps worsened during the growing season. Raspberry primocane growth following winter injury was poor enough to warrant removal of most of the block in late August. This project, therefore, will not be continued into the non-bearing year (2007).

Initial Canada thistle control in August was good with three applications with Gramoxone and Rely (75 and 80%, respectively), but poor with three applications of Goal or five applications with Weed Pharm, Matran 2, and Interceptor (35, 58, 30, and 33%, respectively)(Table 1). As noted above, the raspberry block was destroyed in late August, consequently full evaluation of Canada thistle control from these treatments cannot be accomplished. Initial control of white clover in August was excellent with Gramoxone (90%), but poor with other treatments. Similarly, initial control of common dandelion was poor with all tested products. Based on these data, it does not appear that non-selective herbicides provide good enough perennial weed control to expect successful control during the bearing year of an AY system. Continued testing of non-selective herbicides for this use does not therefore appear to be warranted.

Table 1. Initial Canada thistle control and yield following application of several non-selective herbicides in raspberry.

Treatment ^a	Rate	Canada thistle control			Fruit yield ^b
		5/4/06	5/12/06	8/11/06	g/crown
Gramoxone Extra	2 pt	78	73	75	606
Goal 2XL	12.8 fl.oz	45	72	35	1336
Rely	1 gal	8	85	80	486
Weed Pharm (vinegar, 20% acetic acid)	100%	45	68	58	1100
Matran 2 (clove oil)	20%	60	50	30	1019
Interceptor (pine oil)	20%	35	53	33	697
Non-treated	---	0	0	0	791
LSD _{0.05}	---	21	23	33	ns

^aHerbicides were applied May 2 (all), May 2 (organics only), May 18 (organics only), June 4 (all treatments), and August 7 (all treatments). All non-organic treatments mixed with non-ionic surfactant at 0.25%, v/v; all organic herbicides mixed with Humisol and crop oil concentrate (both at 2%, v/v).

^bBerries sampled July 20.

Table 2. Initial control of white clover and common dandelion following application of several non-selective herbicides in raspberry.

Treatment ^a	Rate	White clover control			Common dandelion control		
		5/4/06	5/12/06	8/11/06	5/4/06	5/12/06	8/11/06
Gramoxone Extra	2 pt	85	78	90	83	80	---
Goal 2XL	12.8 fl.oz	50	75	55	68	80	38
Rely	1 gal	51	93	70	29	81	40
Weed Pharm (vinegar, 20% acetic acid)	100%	30	78	50	35	77	---
Matran 2 (clove oil)	20%	62	60	32	72	61	15
Interceptor (pine oil)	20%	60	60	55	48	60	25
LSD _{0.05}	---	36	29	31	33	25	ns

^aHerbicides were applied May 2 (all), May 2 (organics only), May 18 (organics only), June 4 (all treatments), and August 7 (all treatments). All non-organic treatments mixed with non-ionic surfactant at 0.25%, v/v; all organic herbicides mixed with Humisol and crop oil concentrate (both at 2%, v/v).

^bBerries sampled July 20.