Project No: 13C 3419 5229

Title: Perennial Weed Control in Blueberries

Reporting Period: FY 2003-2004

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Accomplishments: One study was conducted in 2003-04: a comparison of four management systems for controlling established perennial weeds in blueberries. These systems were (1) an organic system, (2) a low herbicide input system, (3) a high herbicide input system, and (4) a combination conventional/organic system.

Results: 'Elliot' was the blueberry variety used for this trial. Each plot included one row of blueberry bushes and was 30 feet long. Specified plots received initial sawdust mulch and diuron application April 22, 2003; pine oil was applied June 18, July 7, and August 7; flame was used April 22, May 20, and October 28 ; Stinger was applied June 18 and October 28; and Roundup was applied May 20 and October 28. Berries were picked by hand August 21 and September 4, and total and fifty-berry weights determined. Percent cover of various perennial weed species as well as annual weeds were visually estimated October 24.

There were no significant differences in blueberry yield or fruit size between systems (Table 1). Increasing herbicide inputs did not result in significantly more fruit nor larger fruit, although those trends were apparent in the data. Perhaps more importantly, it did not appear that any system caused reductions in fruit yield or size during the first year of implementation. Pine oil did not apparently alter the flavor of blueberries from treated plots nor greatly affect bird predation in those plots, although those observations were not measured in a systematic way.

Weed cover also did not generally differ between systems (Table 2). The only significant response resulted with field horsetail cover, which was greatest in the high herbicide system. This likely resulted because none of the herbicides in that system used to date (diuron, Stinger, or Roundup) typically provide much control of that field horsetail. Pine oil appears to have some effect on field horsetail re-growth, since the two systems using pine oil (organic and combination) recorded the lowest horsetail cover of the four systems.

Appendix. Data tables.

Table 1. Blueberry yield and fifty-berry weights for four weed control systems after one season of implementation (2003).

	Yield			Fifty-berry weights		
Treatment	1st pick	2nd pick	total	1st pick	2nd pick	Average
	kg/plot	kg/plot	kg/plot	g/50 berries	g/50 berries	g/50 berries
Organic	7.06	6.60	13.67	70.7	61.7	66.2
Low herbicide	6.21	8.00	14.21	72.7	65.0	68.8
High herbicide	7.38	8.67	16.04	75.7	62.3	69.0
Combination	6.33	5.91	12.24	76.3	57.0	66.7
$LSD_{0.05}$	ns	ns	ns	ns	ns	ns

Table 2. Weed control for four weed management systems after one season of implementation (October, 2003).

Treatment	Canada thistle	Field horsetail	Other perennials	Annuals
	% cover	% cover	% cover	% cover
Organic	25	2	1	2
Low herbicide	30	18	0	10
High herbicide	10	43	2	2
Combination	27	5	0	4
$LSD_{0.05}$	ns	18	ns	ns