

Project No: 13C 3419 5229

Title: Perennial Weed Control in Blueberries

Reporting Period: FY 2007-08

Personnel:

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Accomplishments: Two herbicide screening studies were conducted in 2007-08, one with Blueberry Commission funding and a second with industry funding (Syngenta, Chemtura, and KSU). Only the commission-funded research is presented here. The additional data will be provided at grower meetings during winter 2007-08.

Results:

Established 'Nelson' blueberries (Erickson Farms, Mount Vernon, cooperator) were treated with directed sprays of Callisto (mesotrione), Matrix (rimsulfuron), and Sandea (halosulfuron) at one of two timings: early postemergence (EPOST) March 27 and late postemergence (LPOST) April 30, 2007. Percent weed control and crop injury was estimated at three dates April 5, May 3, and June 22, 2007. Blueberries were harvested from the plots July 19, July 26, and August 9, 2007. The experimental design was a randomized complete block with three replicates. Means were separated using Fisher's Protected LSD ($P = 0.05$). Data are provided in the Table.

Blueberry bushes at this site were somewhat variable in size and in the pre-existing level of perennial weed control. Many of the bushes were large in stature and plots had few weeds, while other bushes were smaller and had moderate to severe infestations of perennial weed species. Treatments therefore resulted in rather variable weed control, with only the June estimation being statistically relevant, but with an extremely high least significant difference ($LSD_{0.05} = 43$). Similarly, yield parameters varied widely between replicates were probably more reflective of bush size and pre-existing weed control than from the herbicide treatments tested in this study.

No products caused obvious injury to blueberry at any timing. Initial weed "burn" was low (April evaluation, 9 days after treatment), as plants treated with these three products often will take two or more weeks to show symptoms. By early May (5 weeks after EPOST treatment and 3 days after LPOST treatment) weed control was excellent in EPOST treatments, and very good in most LPOST treatments.

Appendix. Data tables.

Table. Blueberry yield, and 50-berry weights after treatment with several herbicides in established 'Nelson' blueberry (2007).

Treatment ¹	Rate	Timing	Weed control			50-berry weights ² g/50 berries	Yield ² kg/plot
			4/5/07	5/3/07	6/22/07		
	Product/a		%	%	%		
Callisto ⁴	3 fl.oz	EPOST	8	93	62 abc	76	3.97
Callisto ⁴	6 fl.oz	EPOST	15	96	70 abc	79	2.57
Sandea	1.5 oz	EPOST	3	96	88 a	83	4.34
Sandea ⁴	2 oz	EPOST	20	96	73 abc	87	5.28
Matrix ⁵	2 oz	EPOST	10	90	58 abc	79	3.06
Matrix	4 oz	EPOST	12	96	83 ab	76	6.17
Callisto + Sandea ⁴	3 fl.oz + 1.5 oz	EPOST	5	96	80 ab	86	5.15
Callisto + Matrix	3 fl.oz + 2 oz	EPOST	13	96	90 a	77	4.14
Sandea + Matrix	1.5 oz + 2 oz	EPOST	8	98	86 a	71	5.06
Callisto ⁶	3 fl.oz	LPOST	---	73	32 cd	62	1.76
Callisto ⁴	6 fl.oz	LPOST	---	75	43 bcd	68	2.32
Sandea	1.5 oz	LPOST	---	95	80 ab	79	3.63
Sandea	2 oz	LPOST	---	95	82 ab	92	3.86
Matrix	2 oz	LPOST	---	95	96 a	90	8.93
Matrix	4 oz	LPOST	---	98	93 a	93	6.42
Callisto + Sandea ⁴	3 fl.oz + 1.5 oz	LPOST	---	90	67 abc	60	3.57
Callisto + Matrix ⁴	3 fl.oz + 2 oz	LPOST	---	91	65 abc	68	1.90
Sandea + Matrix	1.5 oz + 2 oz	LPOST	---	91	73 abc	79	4.98
Check	---	---	---	60	0 d	88	4.75
LSD _{0.05}			ns	ns	43	ns	ns

Means followed by the same letter are not statistically different.

¹All treatments were mixed with nonionic surfactant (0.25%, v/v) prior to application; EPOST applications were made March 27 and LPOST were made April 30, 2007.

²Berries were harvested on three dates: July 19, July 26, and August 9, 2007.

⁴Treatment with one of three plots containing weak blueberry bushes.

⁵Treatment with two of three plots containing weak blueberry bushes.

⁶Treatment with all three plots containing weak blueberry bushes.