

Project No: 13C 3419 5229

Title: Perennial Weed Control in Blueberries

Reporting Period: FY 2012-13

Personnel:

Timothy W. Miller, WSU Mount Vernon NWREC

Carl R. Libbey, WSU Mount Vernon NWREC

Yushan Duan, WSU Mount Vernon NWREC

Accomplishments: The herbicide trial was conducted in blueberry during 2012. The data will be provided at grower meetings during winter 2012-13.

Results:

Young 'Draper' blueberries, transplanted in September, 2011 (Craig Ford, South Alder Farms, Lynden, cooperators), were treated with directed sprays of Callisto (mesotrione), Matrix (rimsulfuron), Sandea (halosulfuron), Sinbar (terbacil), Stinger (clopyralid), Treevix (saflufenacil), Karmex (diuron), Lorox (linuron), Reflex (fomesafen), Alion (indaziflam), Dual Magnum (s-metolachlor), Gramoxone (paraquat), and Velpar (hexazinone) either during late dormancy (March 8-9, 2012) or post bud break (May 2, 2012; POST). All plots were also inadvertently treated by the cooperators with a directed spray of Gramoxone + Aim (carfentrazone) in late April. Percent weed control from dormant-season applications was estimated May 2 and for all plots on May 23 and September 14. As these were young blueberry plants, no berries were harvested from these plots. The experimental design was a randomized complete block with four replicates. Means were separated using Tukey's HSD ($P < 0.05$).

Annual weeds emerged at the time the dormant application timing (early March). Primary weed species in the plots were common chickweed (*Stellaria media*), shepherd's-purse (*Capsella bursa-pastoris*), purple deadnettle (*Lamium purpureum*), and annual bluegrass (*Poa annua*). Weed control at about 2 months after the dormant treatment (May 2) was modest, ranging from 3 to 55% (Table). Given the cool temperatures prevalent in March and April, this is not surprising. Dormant-season products with POST activity were most effective, especially Treevix, Gramoxone, and Reflex (31 to 55% defoliation). The inadvertent herbicide application to all plots in late April may have influenced weed control from some of the products applied POST, since weed foliage was beginning to display herbicide damage by the time the POST applications were made (May 2) and uptake and translocation of these herbicides may have been affected. Weed control at the May 23 evaluation ranged from 66 to 98%, but there were no significant differences among the herbicide treatments. There were still no significant differences in weed control among the treatments by September, although the level of weed control was much reduced for most treatments by that later date.

No treatments caused visible blueberry foliar injury at any evaluation. A final dormant-season evaluation is scheduled for December to determine whether blueberry growth was negatively affected by any of these treatments.

Based on these data, continued testing of these product combinations is warranted.

Table. Weed control after treatment with several herbicides in first-year 'Draper' blueberry (2012).

Treatment ^a	Rate	Timing ^a	Weed control		
			May 2	May 23	Sept. 14
	product/a		%	%	%
Sandea	2 oz	Dormant	28 a-g	87	40
Stinger	5.3 fl.oz	Dormant	3 fg	84	60
Callisto	6 fl.oz	Dormant	6 efg	94	51
Matrix	4 oz	Dormant	23 b-g	83	41
Sinbar + Lorox	2 lb + 1 lb	Dormant	11 efg	95	83
Sinbar + Lorox	2 lb + 2 lb	Dormant	25 b-g	95	76
Sinbar + Karmex + Lorox	2 lb + 1 lb + 1 lb	Dormant	21 c-g	98	79
Sinbar + Karmex + Lorox	2 lb + 2 lb + 2 lb	Dormant	18 d-g	95	54
Sinbar + Callisto	2 lb + 6 fl.oz	Dormant	19 c-g	96	74
Sinbar + Matrix	2 lb + 4 oz	Dormant	15 d-g	91	44
Velpar + Sinbar + Karmex	1 lb + 1 lb + 1 lb	Dormant	19 c-g	90	38
Treevix + mso + ams	1 oz + 1% + 2%	Dormant	48 abc	81	55
Treevix + mso + ams	2 oz + 1% + 2%	Dormant	43 a-d	80	38
Alion + Gramoxone	2.5 fl.oz + 2 pt	Dormant	51 ab	84	48
Alion + Gramoxone	5 fl.oz + 2 pt	Dormant	55 a	84	54
Reflex	1 pt	Dormant	34 a-e	76	49
Reflex	2 pt	Dormant	33 a-e	66	45
Reflex + Dual Magnum	2 pt + 1 pt	Dormant	34 a-e	71	60
Reflex + Callisto	2 pt + 3 fl.oz	Dormant	31 a-f	89	60
Sandea	2 oz	POST	---	73	48
Stinger	5.3 fl.oz	POST	---	75	50
Callisto	6 fl.oz	POST	---	75	45
Matrix	4 oz	POST	---	94	78
Sandea + Matrix	2 oz + 4 oz	POST	---	91	74
Sandea + Callisto	2 oz + 6 fl.oz	POST	---	86	54
Sandea + Stinger	2 oz + 5.3 fl.oz	POST	---	80	64
Stinger + Matrix	5.3 fl.oz + 4 oz	POST	---	91	51
Stinger + Callisto	5.3 fl.oz + 6 fl.oz	POST	---	87	48
Matrix + Callisto	4 oz + 6 fl.oz	POST	---	96	69
Sandea + Matrix + Callisto	2 oz + 4 oz + 6 fl.oz	POST	---	95	81
Sandea + Matrix + Stinger	2 oz + 4 oz + 5.3 fl.oz	POST	---	97	66
Sandea + Callisto + Stinger	2 oz + 6 fl.oz + 5.3 fl.oz	POST	---	94	71
Matrix + Callisto + Stinger	4 oz + 6 fl.oz + 5.3 fl.oz	POST	---	97	60
Nontreated check	---	---	0	71	65

Means within a column followed by the same letter or with no letters are not statistically different ($P < 0.05$).

^aDormant applications were made March 8-9, 2012; POST applications were made May 2, 2012; all treatments were mixed with nonionic surfactant (0.25%, v/v) prior to application.