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A Preemergence Weed Control Study in Bearing Merlot Grapes

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A preemergence weed control trial, evaluating seven herbicides and/or combination treatments, was established at Aberle Acres Vineyards (Bob Aberle and Don Lutz) off Woodbridge Road, east of Lower Sacramento Road near Acampo, California, on January 24, 2002. The block of Merlot grapes was planted on a 7' x 11' spacing and standard bilateral cordon trained.

All herbicides were applied with a handheld CO_2 backpack sprayer using 8002 nozzles at 40 psi in a spray volume of 30 gallons per acre water. There were four replications of each treatment, and the plot design was a randomized complete block. The soil type at the trial site was a Hanford sandy loam. Weeds present at the time of treatment included: 3 to 6 inch rosette red stem filaree, 2 to 3 inch tall Poa annua, 1 to 2 inch tall panicled willow herb, 2 to 6 inch tall shepherdspurse, 3 to 5 inch rosette flaxleaf fleabane, 2 to 6 inch rosette common sowthistle and 2 to 3 inch rosette prickly lettuce. The vineyard was dormant at the time of herbicide treatment.

Roundup Ultra (glyphosate) at 1.0 pound per acre active ingredient was added to all treatments (except the first treatment of BASF EXP and the untreated control) to remove the emerged weeds at trial establishment. The trial was evaluated for weed control efficacy and crop phytotoxicity on March 26, 2002 and again on April 29, 2002. Best control of the weed species present at both rating dates occurred with the high rate of Chateau (flumioxazin), followed closely by the low rate of Chateau, and then the combination of BASF EXP plus Prowl (pendimethalin), BASF EXP alone that had been treated with Roundup Ultra @ trial establishment, Milestone (azafenadin) alone and the combination treatment of Goal (oxyfluorfen) plus Surflan (oryzalin). Crop safety with all treatments in the trial was excellent. The non-registered herbicide treatments and the untreated control were harvested on September 10, 2002 when the grapes had reached °Brix level of 24.3. The highest yields of pounds of fruit per vine were led by the Milestone treatment, followed closely by the high rate of Chateau, the low rate of Chateau and the combination treatment of BASF EXP plus Prowl. All treatments harvested out yielded the untreated control.

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2002 Merlot Grape Weed Control Trial
Aberle Acres; Woodbridge, California

Treatment	Rate Lbs/ Acre a.i.	Weed Control [1] Redstem filaree 3/26	Redstem filaree 4/29	Poa annua 3/26	Poa annua 4/29	Panicled Willow Herb 3/26	Panicled Willow Herb 4/29	Prickly Lettuce 3/26	Prickly Lettuce 4/29	Flaxleaf Fleabane 3/26	Flaxleaf Fleabane 4/29	Common Sowthistle 3/26	Common Sowthistle 4/29	Shepherdspurse 3/26	Shepherdspurse 4/29	Crop [1] Phyto 3/26	Crop [1] Phyto 4/29	Crop Yield [2] Lbs/Plot	Crop Yield [2] Lbs/Vine
BASF EXP (0.083EC)*	0.18	7.1	NOT PRESENT	3.3	NOT PRESENT	9.9	9.8	9.9	10.0	7.1	5.5	8.3	8.5	10.0	NOT PRESENT	NOT RATED	0.7	61.35	20.45
BASF EXP	0.18	8.7		9.7		10.0	10.0	10.0	10.0	9.9	9.0	10.0	10.0	10.0			0.8	57.90	19.30
BASF EXP + Prowl (3.3E)	0.18 + 4.00	9.0		9.9		9.9	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0			0.8	64.90	21.63
Chateau (4F)	0.375	9.1		10.0		10.0	10.0	10.0	10.0	9.9	9.8	9.9	10.0	10.0			0.9	67.50	22.50
Chateau	0.75	9.3		9.9		9.9	10.0	10.0	10.0	10.0	9.8	10.0	10.0	10.0			0.7	69.38	23.12
Milestone (80DF)	0.75	9.9		10.0		9.6	9.3	10.0	10.0	9.6	7.5	10.0	10.0	10.0			0.7	70.30	23.43
Goal (2XL) + Surflan (4AS)	1.00 + 3.00	7.4		9.6		9.7	8.8	10.0	10.0	9.8	10.0	9.9	9.9	9.6			1.0		
Roundup Ultra (4SC)	1.00	3.8		8.9		5.6	4.8	9.5	10.0	8.3	6.8	8.8	8.8	9.5			0.8		
Untreated Control*	-----	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.8	56.28	18.76

[1] Average of four replications:
Weed Control – 0 = no weed control; 10 = complete weed control
Crop Phyto – 0 = no crop damage; 10 = crop dead

[2] Average of four replications

* All treatments, except the first treatment of BASF EXP and the untreated control, were treated with 1.0 Lbs/Acre a.i. of Roundup Ultra (4SC) to control emerged weeds at trial establishment