

Grape Weed Control Trial 2013

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Methods: The trial was established in a commercial vineyard west of Soledad, CA. The soil at the site was Pinnacle coarse sandy loam. The vineyard was planted to Pinot Noir in 2006. The spacing was 5 feet between plants and 6 feet between rows. Each plot was four vines long and the spray strip was three feet wide (1.5 feet on each side of the vine row). Common weeds at the site included: annual grasses (mainly ripgut brome & annual fescues), dandelion seedlings, common knot weed, hairy fleabane, tall annual willow herb, bristly ox tongue, sow thistle, mustard (mostly shortpod mustard), clover (burr clover and white clover), pineapple weed, malva and scarlet pimpernel. All treatments except Venue and Mission were applied on December 19, 2012; Glyphomax (reapplication of this material), Venue and Mission treatments were applied on April 22, 2013. All materials were applied with 3.0 pints/A Glyphomax + crop oil concentrate 1.25% v/v. Materials were applied with two passes of a one tip wand (one pass to each side of the vine row) with an 8008EVS tip applying the equivalent to 38 GPA of water. Total weeds in 30 or 45 ft² were counted on January 28, March 1, April 9, May 17, June 13 and August 6.

Results: There was a great deal of weed seed of dandelion, bristly ox tongue, clover and hairy fleabane due to them completing their lifecycle in the row middles and raining the seed in the vine row (Photos 1&2). Weed counts were taken from the sprayed strip under the vine row. There were insufficient weeds to evaluate on the January 28 and no data are reported here. On March 1 weeds were beginning to germinate and become established in the untreated control, but very few weeds in the herbicide treatments (Table 1). On April 9 there was good weed pressure and the effect of the treatments was evident (Table 2). All 5.0 oz/A Alion treatments had the lowest number of weeds followed by Trellis/Goal Tender/Surflan. Venue and Mission were applied on April 22 and there were no treatment effects on the April 9 evaluation date. Weeds continued to emerge by the May 17 evaluation date (Photo 3), especially below the drip emitters (photos 4-7). Dandelion, bristly ox tongue and annual grasses were the most common weeds. Treatments with the lowest number of weeds included the Venue, Mission, Glyphomax (all recently sprayed), Trellis/Goal Tender/Surflan and Alion/Matrix (Table 3). Weeds continued to emerge and on June 13 hairy fleabane, annual grasses, dandelion, knot weed and bristly ox tongue were the most common weeds. Treatments with the lowest number of weeds included Mission (both rates), Trellis (1.0 lb)/Goal Tender/Surflan, Alion/Matrix and Alion/Surflan (Table 4). There were significant numbers of weeds emerged in all herbicide treatments on August 6. The most prominent weed species included annual grasses, dandelion knot weed and bristly ox tongue. Treatments with the lowest number of weeds nearly 8 months after treatment included: Trellis/Goal Tender/Surflan (all rates), Alion/Matrix and Alion/Surflan. Dandelion and yellow nutgrass seedlings were the most problematic for these treatments.

April 9, 2013



1. Treated area and row middles



2. Dandelion, bristly ox tongue in the row middles

May 17, 2013



3. Untreated



4. Weed free below a drip emitter



5. Chateau/Surflan



6. Matrix/Surflan



7. Trellis/Alion/Surflan

Table 1. Total weeds per m² on March 1, 2013

Treatment ¹	Rate ai/A	Material	Annual Grass	Dandelion	Knotweed	Bristly Ox tongue	Sow thistle	Chickweed	Mustard	Clover	Pineapple weed	Total weeds
Untreated	---	---	2.95	0.72	0.32	0.24	0.00	0.00	0.00	0.00	0.00	4.23
Glyphomax XRT	1.5	3.0 pt	0.72	0.24	0.08	0.40	0.32	0.16	0.00	0.24	0.00	2.15
Trellis 75DF Surflan 4AS	0.5 3.0	0.66 lb 3.0 qt	0.16	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Trellis 75 DF Goal Tender 4F Surflan 4AS	0.5 1.5 3.0	0.66 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trellis 75 DF Surflan 4AS	0.75 3.0	1.0 lb 3.0 qt	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
Trellis 75DF Goal Tender 4F Surflan 4AS	0.75 1.5 3.0	1.0 lb 3.0 pt 3.0 qt	0.08	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Trellis 75 DF Goal Tender 4F Surflan 4AS	0.38 0.75 1.5	0.5 lb 1.5 pt 1.5 qt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Goal Tender 4F Surflan 4AS	1.5 3.0	3.0 pt 3.0 qt	0.08	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Chateau 51SW Surflan 4AS	0.25 3.0	8.0 oz 3.0 qt	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Matrix 25SG Surflan 4F	0.06 3.0	4.0 oz 3.0 qt	0.08	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Trellis 75DF Alion Surflan 4AS	0.38 0.05 3.0	0.5 lb 3.75 oz 3.0 qt	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Alion Matrix	0.07 0.06	5.0 oz 4.0 oz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alion Surflan 4AS	0.07 3.0	5.0 oz 3.0 qt	0.16	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Alion	0.07	5.0 oz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Venue 17 ²	0.005	4.0 oz	1.28	0.08	0.00	0.80	0.00	0.00	0.08	0.00	0.00	2.23
Mission 25 ²	0.03	2.14 oz	1.28	0.00	0.08	0.08	0.00	0.00	0.00	0.00	0.16	1.59
Mission 25 ²	0.04	2.85 oz	0.48	0.08	0.00	0.56	0.00	0.00	0.00	0.00	0.00	1.12
P>F treat	---	---	0.0004	0.0445	0.0577	0.3418	0.4807	0.0004	0.4807	0.4807	0.0004	<.0001
LSD 0.05	---	---	1.11	0.39	NA	NA	NA	0.06	NA	NA	0.06	1.40

1 - All materials were applied with Glyphomax at 3.0 pints/A + crop oil concentrate 1.25% v/v; 2 – applied on April 22

Table 2. Total weeds per m² on April 9, 2013

Treatment ¹	Rate	H. flea-bane	Willow herb	nut – grass	Annual grass	Dandelion	Knot-weed	Bristly Ox tongue	Sow thistle	Chick-weed	mustard	clover	Pineapple weed	malva	Scarlet pimpernel	Total weeds
Untreated	---	0.00	0.00	0.00	2.79	1.20	0.48	1.67	0.40	0.00	0.00	0.32	0.48	0.08	0.16	7.58
Glyphomax	3.0 pt	0.00	0.00	0.00	1.83	0.96	0.96	2.39	0.96	0.00	0.00	0.24	0.00	0.00	0.24	7.58
Trellis Surflan	0.66 lb 3.0 qt	0.00	0.00	0.00	0.08	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04
Trellis Goal Tender Surflan	0.66 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
Trellis Surflan	1.0 lb 3.0 qt	0.00	0.00	0.00	0.16	0.40	0.00	0.08	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.72
Trellis Goal Tender Surflan	1.0 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.32	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Trellis Goal Tender Surflan	0.5 lb 1.5 pt 1.5 qt	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Goal Tender Surflan	3.0 pt 3.0 qt	0.00	0.00	0.08	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Chateau Surflan	8.0 oz 3.0 qt	0.00	0.00	0.64	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Matrix Surflan	4.0 oz 3.0 qt	0.00	0.00	0.00	0.08	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Trellis Alion Surflan	0.5 lb 3.75 oz 3.0 qt	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Alion Matrix	5.0 oz 4.0 oz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.08
Alion Surflan	5.0 oz 3.0 qt	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Alion	5.0 oz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Venue 17 ²	4.0 oz	0.88	0.64	0.00	3.43	0.64	0.40	3.11	0.88	0.00	0.00	0.40	0.00	0.00	1.20	11.56
Mission 25 ²	2.14 oz	0.96	0.48	0.00	3.51	1.12	0.08	3.99	0.96	0.00	0.16	0.56	0.16	0.00	0.24	12.20
Mission 25 ²	2.85 oz	0.00	0.16	0.00	2.63	0.80	0.72	5.02	0.96	0.00	0.08	0.48	0.00	0.00	0.00	10.85
P>F treat	---	0.1748	0.4807	0.4807	<.0001	0.1186	0.0857	0.0040	<.0001	NA	0.4807	0.3213	0.4807	0.4807	0.4717	<.0001
LSD 0.05	----	NA	NA	NA	0.77	NA	NA	2.74	0.54	NA	NA	NA	NA	NA	NA	4.44

1 - All materials were applied with Glyphomax at 3.0 pints/A + crop oil concentrate 1.25% v/v; 2 – applied on April 22

Table 3. Total weeds per m² on May 17, 2013

Treatment ¹	Rate	H. flea-bane	Willow herb	nut – grass	Annual grass	Dandelion	Knot-weed	Bristly Ox tongue	Sow thistle	mustard	clover	Pineapple weed	malva	Scarlet pimpernel	Total weeds
Untreated	---	0.32	0.08	0.00	3.35	1.99	0.88	2.47	0.72	0.32	0.00	0.16	0.08	0.56	11.16
Glyphomax	3.0 pt	0.00	0.00	0.00	0.08	0.24	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Trellis Surflan	0.66 lb 3.0 qt	0.00	0.00	0.00	0.08	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	1.20
Trellis Goal Tender Surflan	0.66 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
Trellis Surflan	1.0 lb 3.0 qt	0.08	0.00	0.00	0.16	1.91	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	2.23
Trellis Goal Tender Surflan	1.0 lb 3.0 pt 3.0 qt	0.00	0.00	0.32	0.08	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Trellis Goal Tender Surflan	0.5 lb 1.5 pt 1.5 qt	0.00	0.00	0.48	0.08	0.16	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Goal Tender Surflan	3.0 pt 3.0 qt	0.08	0.00	2.07	0.16	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.19
Chateau Surflan	8.0 oz 3.0 qt	0.00	0.00	0.80	0.08	1.59	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	2.55
Matrix Surflan	4.0 oz 3.0 qt	0.00	0.00	1.20	0.08	2.47	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	3.83
Trellis Alion Surflan	0.5 lb 3.75 oz 3.0 qt	0.00	0.00	0.32	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Alion Matrix	5.0 oz 4.0 oz	0.00	0.00	0.40	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Alion Surflan	5.0 oz 3.0 qt	0.00	0.00	0.64	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72
Alion	5.0 oz	0.00	0.00	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28
Venue 17 ²	4.0 oz	0.00	0.00	0.00	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
Mission 25 ²	2.14 oz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mission 25 ²	2.85 oz	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
P>F treat	---	0.0637	0.4807	0.7441	<.0001	0.1893	<.0001	0.0361	0.0006	0.0466	0.4807	0.4807	0.4807	0.4807	<.0001
LSD 0.05	---	NA	NA	NA	0.80	NA	0.22	1.19	0.26	0.16	NA	NA	NA	NA	2.51

1 - All materials were applied with Glyphomax at 3.0 pints/A + crop oil concentrate 1.25% v/v; 2 – applied on April 22

Table 4. Total weeds per m² on June 13, 2013

Treatment ¹	Rate	H. flea-bane	Willow herb	nut – grass	Annual grass	Dandelion	Knot-weed	Bristly Ox tongue	Sow thistle	mustard	clover	Pineapple weed	malva	Scarlet pimpernel	Total weeds
Untreated	---	1.43	0.00	0.00	2.03	3.35	1.91	3.35	1.43	0.00	0.00	0.12	0.48	0.48	14.58
Glyphomax	3.0 pt	0.00	0.00	0.00	1.31	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.99
Trellis Surflan	0.66 lb 3.0 qt	0.12	0.00	0.00	0.12	2.75	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	3.11
Trellis Goal Tender Surflan	0.66 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.84
Trellis Surflan	1.0 lb 3.0 qt	0.12	0.00	0.00	0.36	2.39	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	2.99
Trellis Goal Tender Surflan	1.0 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Trellis Goal Tender Surflan	0.5 lb 1.5 pt 1.5 qt	0.00	0.00	0.72	0.12	0.36	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	1.55
Goal Tender Surflan	3.0 pt 3.0 qt	0.00	0.00	2.39	0.24	1.79	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	4.66
Chateau Surflan	8.0 oz 3.0 qt	0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	2.99
Matrix Surflan	4.0 oz 3.0 qt	0.00	0.00	1.67	0.00	2.27	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	4.06
Trellis Alion Surflan	0.5 lb 3.75 oz 3.0 qt	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Alion Matrix	5.0 oz 4.0 oz	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Alion Surflan	5.0 oz 3.0 qt	0.00	0.00	0.00	0.00	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Alion	5.0 oz	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84
Venue 17 ²	4.0 oz	0.00	0.00	0.00	6.21	1.67	0.00	0.84	0.00	0.00	0.96	0.00	0.00	0.24	9.92
Mission 25 ²	2.14 oz	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Mission 25 ²	2.85 oz	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P>F treat	---	<.0001	NA	0.6227	0.0198	0.0439	0.0017	0.0109	0.4807	NA	0.0311	0.4807	0.4807	0.4807	<.0001
LSD 0.05	---	0.41	NA	NA	2.91	2.33	0.73	1.46	NA	NA	0.45	NA	NA	NA	3.73

1 - All materials were applied with Glyphomax at 3.0 pints/A + crop oil concentrate 1.25% v/v; 2 – applied on April 22

Table 5. Total weeds per m² on August 6, 2013

Treatment ¹	Rate	H. flea-bane	Willow herb	nut – grass	Annual grass	Dandelion	Knot-weed	Bristly Ox tongue	Sow thistle	mustard	clover	Pineapple weed	malva	Scarlet pimpernel	Total weeds
Untreated	---	0.60	0.00	0.24	5.85	5.02	1.67	1.43	0.48	0.36	0.36	0.00	0.60	0.60	17.20
Glyphomax	3.0 pt	0.00	0.00	0.00	1.91	3.58	0.00	1.08	0.36	0.00	0.12	0.00	0.72	0.36	8.12
Trellis Surflan	0.66 lb 3.0 qt	0.00	0.00	0.00	0.48	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	4.06
Trellis Goal Tender Surflan	0.66 lb 3.0 pt 3.0 qt	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84
Trellis Surflan	1.0 lb 3.0 qt	0.48	0.00	0.00	0.12	8.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.44
Trellis Goal Tender Surflan	1.0 lb 3.0 pt 3.0 qt	0.00	0.00	0.48	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	1.08
Trellis Goal Tender Surflan	0.5 lb 1.5 pt 1.5 qt	0.00	0.00	0.00	0.48	0.36	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Goal Tender Surflan	3.0 pt 3.0 qt	0.00	0.00	3.70	0.00	1.67	0.12	0.00	0.96	0.00	0.12	0.00	0.00	0.00	6.57
Chateau Surflan	8.0 oz 3.0 qt	0.00	0.00	0.12	0.36	3.94	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	4.54
Matrix Surflan	4.0 oz 3.0 qt	0.00	0.00	4.90	0.12	4.06	0.00	0.00	0.36	0.12	0.24	0.00	0.00	0.00	9.80
Trellis Alion Surflan	0.5 lb 3.75 oz 3.0 qt	0.00	0.00	0.36	0.00	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55
Alion Matrix	5.0 oz 4.0 oz	0.00	0.00	0.24	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Alion Surflan	5.0 oz 3.0 qt	0.00	0.00	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Alion	5.0 oz	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67
Venue 17 ²	4.0 oz	0.00	0.00	0.00	2.63	4.90	0.00	0.72	0.48	0.24	0.00	0.00	0.00	0.00	8.96
Mission 25 ²	2.14 oz	0.00	0.00	0.00	2.15	0.48	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	2.75
Mission 25 ²	2.85 oz	0.00	0.00	0.00	5.14	1.55	0.00	0.72	0.60	0.12	0.00	0.00	0.00	0.00	8.12
P>F treat	---	0.0058	NA	0.2378	<.0001	0.0030	<.0001	0.3311	0.4377	0.1982	0.4401	NA	0.1227	0.4807	<.0001
LSD 0.05	---	0.31	NA	NA	2.20	4.00	0.44	NA	NA	NA	NA	NA	NA	NA	4.51

1 - All materials were applied with Glyphomax at 3.0 pints/A + crop oil concentrate 1.25% v/v; 2 – applied on April 22