

## **Grape Weed Control Trial 2014**

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**Methods:** The trial was established in a commercial vineyard south of Soledad, CA. The soil at the site was Chualar loam. The variety was Chardonnay planted six feet between plants and eight feet between rows. Each plot was four-vines long and the spray strip was four feet wide (2.0 feet on each side of the vine row). The berms were raked prior to herbicide application to remove leaf and stem residue. Common weeds at the site included: *Conyza* sp. (mostly marehail, but some occasional hairy fleabane), little mallow, yellow sweet clover and sow thistle, as well as the grasses ripgut brome and annual ryegrass. Bermuda grass was also present at the site, growing from the middles toward the treated berm area, but was removed with spot application of glyphosate on May 8. All preemergent treatments and glyphosate + crop oil treatments were applied on February 7, 2014 just prior to a rain storm that occurred on February 8-9. All treatments were applied with 3.0 pints/A Glyphomax + crop oil concentrate @ 1.25% v/v to remove existing weeds in the plots. Post emergence treatments were applied on May 8 and the 2x glyphosate + crop oil treatment was reapplied on this date. All treatments 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 57 GPA of water. Total weeds in 18 ft<sup>2</sup> (between middle vines x 3 foot wide swath) in the middle of the plots were counted on April 2, May 6, June 17 and August 15.

**Results:** This trial mostly focused on the impact of preemergent weed control materials such as Alion, Chateau, Goal, Matrix, Mission, Surflan Trellis and Zeus, but Mission and Venue were included as post emergence treatments. The preemergence treatments were applied on February 7, just prior to a rainstorm that sufficiently incorporated the materials into the soil. The post emergence application of Mission, Venue and the 2x application of glyphosate were applied on May 8. The first weed count was made on April 2 (no evaluation of post emergence applications were made on this date). The most prominent weeds included ripgut brome, yellow sweet clover, short pod mustard, sow thistle and prickly lettuce. All preemergent treatments provided good control of these weeds, but combinations of Trellis + Goal, as well as all Alion treatments and combinations provided the best control (Table 2).

The second weed counts were made on May 6 (not including evaluations of post emergence

treatments). Combinations of Trellis + Goal provided better overall weed control and better control of Conyza sp. (Table 3). Alion provided good control of Conyza sp. But combinations of Alion + Trellis and Alion + Matrix provided better overall weed control than Alion alone. Preemergence applications of Mission provided good overall weed control on this date.

The third weed count was made on June 17 and the effects of the post emergence treatments were evaluated. There were more Conyza sp. plants present in the trial on this date (Table 4). There are not statistical differences in the treatments regarding the control of Conyza, however there are trends that are worth noting. All Alion treatments and Mission provided the best control of Conyza on this date. Matrix and combinations Trellis + Goal also provided good control of this weed.

The final weed count was made on August 15 (6 months following application). The trends for control of Conyza noted in the June evaluation continued on this date. Sow thistle continued to germinate late in the growth cycle and accounted for a large percentage of the weeds in this evaluation date. The treatments that had the lowest number of weeds on this evaluation date included the 2x glyphosate treatment (applied in February and May) and Alion + Matrix. The combination of Trellis + Goal provided better weed control than either material alone in this trial.

Table 1. Materials, rates and treatment numbers

No.	Timing	Treatment	Form			Rate	
1	post 1x	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post 1x	Crop oil concentrate			L	1.25	% v/v
2	post 2x	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post 2x	Crop oil concentrate			L	1.25	% v/v
3	pre	Trellis 75 DF	75	%ai w/w	WG	1.0	lbpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
4	pre	Trellis 75 DF	75	%ai w/w	WG	1.0	lbpr/a
	pre	Surflan	4	lbai/gal	SC	3.0	qtpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
5	pre	Goal 2XL	2	lbai/gal	SC	6.0	ptpr/a
	pre	Surflan	4	lbai/gal	SC	3.0	qtpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
6	pre	Trellis 75 DF	75	%ai w/w	WG	1.0	lbpr/a
	pre	Goal 2XL	2	lbai/gal	SC	4.0	ptpr/a
	pre	Surflan	4	lbai/gal	SC	3.0	qtpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
7	pre	Trellis 75 DF	75	%ai w/w	WG	1.0	lbpr/a
	pre	Goal 2XL	2	lbai/gal	SC	6.0	ptpr/a
	pre	Surflan	4	lbai/gal	SC	3.0	qtpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a

	post	Crop oil concentrate			L	1.25	% v/v
8	pre	Chateau	51	%ai w/w	WG	12.0	ozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
9	pre	Matrix	25	%ai w/w	WG	4.0	ozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
10	pre	Alion	1.67	lbae/gal	SC	5.0	flozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
11	pre	Trellis 75 DF	75	%ai w/w	WG	0.66	lbpr/a
	pre	Alion	1.67	lbae/gal	SC	3.75	flozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
12	pre	Alion	1.67	lbae/gal	SC	5.0	flozpr/a
	pre	Matrix	25	%ai w/w	WG	2.0	ozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
13	post	Venue				4.0	flozpr/a
14	pre	Mission				2.85	ozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v
15	post	Mission				2.85	flozpr/a
16	pre	Zeus				12	flozpr/a
	post	Glyphomax XRT	4	lbae/gal	SL	3.0	ptpr/a
	post	Crop oil concentrate			L	1.25	% v/v

Table 2. April 2, 2014. Weed counts (18 ft<sup>2</sup>).

Treatment	Rip gut brome	Yellow sweet clover	Sh ort po d m u s t a r d	Ox tongue	Sow thistle	Conyza Sp.	Little mallow	Knot wee d	Scarlet pimper nel	Prickly lettuce	Yellow nut sedge	Rye- grass	Lambs - quar ter	Wild radish	Filaree	Total weeds
Glyph 1x	6.3	1.0	1.3	0.0	2.3	2.0	0.0	0.0	0.3	1.3	0.0	0.0	0.0	0.0	0.0	14.3
Glyph 2x	5.0	0.3	1.3	0.5	2.3	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	10.8
Trellis 1.0 lb	0.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Trellis 1.0 lb Surflan 3 qt	1.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Goal 6.0 pt Surflan 3 qt	0.0	0.0	0.3	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Trellis 1.0 lb Goal 4.0 pt	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Trellis 1.0 lb Goal 6.0 pt	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Chat. 12 oz	0.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Matrix 4.0 oz	1.5	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Alion 5.0 oz	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trellis 0.6 lb Alion 3.8 oz	0.3	0.8	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Alion 5.0 oz Matrix 2.0 oz	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Venue 4.0 oz	2.8	5.8	0.3	0.3	2.0	4.8	0.0	0.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	16.5
Miss. 2.85 oz pre	0.3	0.0	0.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Miss. 2.85 oz post	2.0	2.8	1.3	0.3	4.8	2.0	0.0	0.0	0.8	1.3	0.3	0.0	0.0	0.0	0.0	15.3
Zeus 12 oz	3.5	0.5	0.0	0.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
Pr>F treat	<0.0001	<0.0001	0.0 01 4	0.0793	0.0068	0.2053	NA	0.60 32	0.5627	0.0419	0.5093	NA	NA	NA	NA	<0.0001
LSD 0.05	2.3	2.0	0.8	NS	2.4	NS	NA	NS	NS	0.9	NS	NA	NA	NA	NA	4.8



Miss. 2.85 oz post	4.5	5.5	1.8	0.3	4.3	5.0	0.3	0.0	1.0	0.3	0.8	0.0	0.0	0.0	0.0	23.5
Zeus 12 oz	3.5	6.0	0.0	0.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5
Pr>F treat	0.0011	0.0018	0.0521	0.5043	0.0005	0.017	0.5506	0.7619	0.5455	0.564	0.6901	0.5063	0.0035	NA	NA	<0.0001
LSD 0.05	3.8	4.1	NS	NS	3.0	4.1	NS	NS	NS	NS	NS	NS	0.2	NA	NA	7.6

Table 4. June 17, 2014. Weed counts (18 ft<sup>2</sup>).

Treatment	Rip gut brome	Yellow sweet clover	Short pod mustard	Ox tongue	Sow thistle	Conyza Sp.	Little mallow	Knot weed	Scarlet pimpernel	Prickly lettuce	Yellow nut sedge	Rye-grass	Lambs-quarter	Wild radish	Filaree	Total weeds
Glyph 1x	1.3	1.8	1.5	0.8	5.3	4.3	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5
Glyph 2x	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Trellis 1.0 lb	0.8	1.0	0.0	0.0	0.3	4.0	2.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	8.3
Trellis 1.0 lb Surflan 3 qt	0.3	2.0	0.0	0.0	0.8	2.3	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	5.5
Goal 6.0 pt Surflan 3 qt	0.0	0.3	0.5	0.0	0.0	4.5	0.3	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	8.8
Trellis 1.0 lb Goal 4.0 pt	0.5	0.3	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.8
Trellis 1.0 lb Goal 6.0 pt	0.0	0.8	0.0	0.0	0.0	1.8	0.3	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	3.5
Chat. 12 oz	0.3	0.3	0.0	0.0	1.5	2.3	0.3	0.3	0.0	0.0	2.3	0.0	0.0	0.0	0.0	7.0
Matrix 4.0 oz	0.3	2.8	0.3	0.0	2.0	1.5	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	7.8
Alion 5.0 oz	0.0	0.8	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	1.5

Trellis 0.6 lb Alion 3.8 oz	0.0	1.3	0.0	0.0	0.0	0.5	0.3	1.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	3.8
Alion 5.0 oz Matrix 2.0 oz	0.0	0.0	0.0	0.0	0.0	1.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Venue 4.0 oz	0.8	1.0	0.3	0.0	3.0	4.0	1.8	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	11.8
Miss. 2.85 oz pre	0.5	0.8	1.8	0.3	2.5	0.3	0.3	0.0	0.0	0.3	0.8	0.0	0.3	0.0	0.0	7.5
Miss. 2.85 oz post	1.5	0.0	0.0	0.0	4.3	1.8	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	7.8
Zeus 12 oz	1.0	3.5	0.0	0.5	2.0	6.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	14.0
Pr>F treat	0.2578	0.0018	0.0 01	0.4498	0.0001	0.0603	0.62 25	0.1514	0.5093	0.6712	0.6493	NA	0.5148	NA	NA	<0.0001
LSD 0.05	NS	1.5	0.9	NS	2.4	NS	NS	NS	NS	NS	NS	NA	NS	NA	NA	4.8

Table 5. August 15, 2014. Weed counts (18 ft<sup>2</sup>).

Treatment	Rip gut brome	Yellow sweet clover	Sho rt po d mu star d	Ox tongue	Sow thistle	Conyza Sp.	Little mall ow	Knot weed	Scarlet pimper nel	Prickly lettuce	Yellow nut sedge	Rye- grass	Lambs- quarter	Wild radish	Filaree	Total weeds
Glyph 1x	0.5	0.5	0.0	0.5	12.0	6.5	0.8	0.8	0.5	0.5	0.0	0.3	0.0	0.3	0.0	23.0
Glyph 2x	0.0	0.0	0.0	0.0	1.8	0.5	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.8	0.0	3.8
Trellis 1.0 lb	0.0	0.3	0.8	0.0	2.3	4.5	1.8	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	11.0
Trellis 1.0 lb Surflan 3 qt	0.0	1.5	2.3	0.3	1.3	1.8	0.3	0.0	0.0	0.0	0.3	0.5	0.0	0.3	0.0	8.3
Goal 6.0 pt Surflan 3 qt	0.0	0.5	0.0	0.0	1.0	2.8	0.3	0.0	0.0	0.0	3.5	0.0	0.0	0.3	0.0	8.3

