

2005 WINE GRAPE

WEED CONTROL RESEARCH PROGRESS REPORT

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And

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San Joaquin County

ACKNOWLEDGEMENTS

The wine grape weed control program in San Joaquin County was conducted with the cooperation and management assistance of Aberle Acres (Bob Aberle & Donald Lutz) located near Woodbridge, CA. Appreciation and many thanks are extended to them for their assistance, interest and patience.

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Caution

This report is a summary of grape weed control studies conducted in San Joaquin County. **It should not in any way be interpreted as a recommendation of the University of California.**

Trade names of herbicides are used in this report, as well as the less familiar common names to familiarize the reader with the various products tested. No endorsement of products mentioned or criticism of similar products is intended.

The rates of herbicides in this report are always expressed as **active ingredient (a.i.) of material per treated acre.**

<u>Trade Name</u>	<u>Common Name</u>	<u>Company</u>
Chateau	Flumioxazin	Valent
Gramoxone Max	paraquat	Syngenta
Gramoxone Inteon	paraquat	Syngenta
DPXF9636	rimsulfuron	Dupont
Goal	oxyfluorfen	Dow
Princep Caliber 90	Simazine	Syngenta
Rely	glufosinate ammonium	Bayer
Roundup	glyphosate	Monsanto
Surflan	oryzalin	Dow
Weed Pharm	Acetic Acid	Pharm Solution, Inc.

2005 Grape Weed Control Trial Results

During the 2005 season, five weed control trials were established and evaluated in San Joaquin County. All of the field trials were located on Aberle Acres which is located near Woodbridge, CA.

All of the trials were established to evaluate the effectiveness of the candidate herbicides for controlling annual weeds in an established vineyard. Complete trial descriptions and weed control/crop phytotoxicity ratings for each trial follow.

Trial 1 – **Postemergence Herbicides for Controlling Turkey Mullein in Grapes.** Mick Canevari, Paul Verdegaal, Don Colbert, Randall Wittie & Scott Whiteley.

OBJECTIVE: Evaluate several herbicides for postemergence control of turkey mullein in an established California vineyard.

MATERIALS & METHODS: The following postemergence herbicides were applied to the berm of an established Sangiovese wine grapes near Lodi, CA on 4/20/2005: (1) Rely 1EC 1.0 lb ai/A, (2) DPXF9636 25WG 0.0625 lb ai/A, (3) DPXF9636 25WG 0.125 lb ai/A, (4) Gramoxone Inteon 2EC 0.75 lb ai/A, (5) Untreated Check and (6) Chateau 51 WG 0.33 lb ai/A. Unifilm 707 (NIS) was added to all herbicide treatments at 0.25% V/V. Treatments were arranged in a randomized complete block design with three replicates. Plot size was 6' by 14'. Applications were made with a CO₂ backpack sprayer, 35 psi in 32.4 gpa of water. Growth stages prior to application were: grapes = 12-20" shoots and turkey mullein (*Eremocarpus setigerus*) = 80% 6-10 leaf, .5-1.5" diameter and 20% 2-4 leaf, 0.5" diameter.

RAINFALL DATA: Weather Station: LODI.C (NCDC#5032, Lodi, CA)

PRECIPITATION AMOUNT (INCHES)*Application Date 4/20/2005

DATE	INCHES	DATE	INCHES
4/23/05	0.11	5/8/05	0.36
4/27/05	0.37	5/9/05	0.25
4/28/05	0.23	5/19/05	0.06
5/4/05	0.25	June/05	0.55
5/5/05	0.17		

RESULTS & DISCUSSIONS:

Grape Injury: Visually, all herbicide treatments showed no grape injury.

Weed Control: **6 DAT(Days After Treatment):** The only herbicide showing some quick burn down on the turkey mullein was Gramoxone Inteon, which gave 83%. **21 DAT:** Rely, Gramoxone Inteon and Chateau were giving 100%, 93% and 85% mullein control, respectively. Poor Mullein control with both rates of DPXF9636. **36 & 69 DAT:** DPXF9636 gave 55-62% turkey mullein control. Excellent control of mullein with Rely, Gramoxone Inteon and Chateau; 100%, 94% and 90%, respectively. **107 DAT:** On the final rating, % turkey mullein control were; Rely 1.0 lb ai/A = 99%. DPXF9636 0.0625 lb ai/A = 55%, DPXF9636 0.125 lb ai/A = 62%, Gramoxone Inteon 0.75 lb ai/A = 89% and Chateau 0.33 lb ai/A = 83%.

Table 1 – Postemergence Herbicides for Controlling Turkey Mullein in an Established Vineyard.
% Turkey Mullein Control - Days After Treatment

Treatments	Rate lb ai/Acre	6 DAT ¹	21 DAT ¹	36 DAT ¹	69 DAT ¹	107 DAT ¹	% Crop Injury
Rely (1EC)	1.0	37	100	100	100	99	0
DPXF9636 (25WG)	0.0625	7	33	62	62	55	0
DPXF9636 (25WG)	0.125	8	55	75	68	62	0
Gramoxone Inteon (2EC)	0.75	83	93	96	94	89	0
Chateau (51WG)	0.33	30	85	92	90	83	0
Untreated Control		0	0	0	0	0	0

1.Average of 3 replicates. 0=No weed control or crop injury

100 = Complete weed control; crop dead

DAT = Days after treatment

Trial 2 – **Postemergence Weed Control Study in Bearing Merlot Grapes.** Mick Canevari, Paul Verdegaal, Don Colbert, Randall Wittie & Scott Whiteley.

OBJECTIVE: Evaluate postemergence herbicides applied alone and tank mixes for overall weed control in an established grape vineyard.

METHODS & MATERIALS: The following herbicides were applied to the berm of an established Merlot vineyard near Lodi, California on 2/24/04: (1) DPXF 9636 25WG 0.047 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (2) DPXF 9636 25WG 0.0625 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (3) DPXF 9636 25WG 0.125 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (4) DPXF 9636 25WG 0.047 lb ai/A. + Karmex 80WP 1.6 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (5) DPXF 9636 25WG 0.0625 lb ai/A. + Karmex 80WP 1.6 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (6) Gromoxone Inteon 2EC 0.625 lb ai/A. + Unifilm 707 @ 0.25% V/V, (7) Gromoxone Inteon 2EC 0.75 lb ai/A. + Unifilm 707 @ 0.25% V/V, (8) Gromoxone Inteon 2EC 0.625 lb ai/A. + Princep 90Df 2.0 lb ai/A. + Goal 2EC 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (9) Gromoxone Inteon 2EC 0.75 lb ai/A. + Princep 90Df 2.0 lb ai/A. + Goal 2EC 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (10) Chateau 51WG 0.375 lb ai/A. + Unifilm 707 0.25% V/V, (11) Chateau 51WG 0.75 lb ai/A. + Unifilm 707 @ 0.25% V/V, (12) Chateau 51WG 0.375 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (13) Chateau 51WG 0.375 lb ai/A. + Princep 90DF 2.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (14) Chateau 51WG 0.375 lb ai/A. + Princep 90DF 2.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (15) Goal 2EC 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (16) Goal 2EC 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (17) Rely 1EC 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (18) Roundup Ultra Max 4SL 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (19) Gromoxone Max 3EC 0.75 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V. Treatment 20 is an Untreated Check. Treatments were arranged in a randomized complete block design with three replicates. Plot size was 6 ft. X 21 ft. Materials were applied with a CO₂ backpack sprayer, 35 psi in 40 gpa of water.

Growth stages prior to the application were as follows: grapes were dormant, common chickweed (*Stellaria media*) = flowering, 6-7" Ht., prickly lettuce (*Lactuca serriola*) = 8-12 leaf, 5-7" diameter, common groundsel (*Senecio vulgaris*) = flowering, 6-10" Ht., annual sowthistle (*Sonchus oleraceus*) = 8-12 leaf, 5-8" diameter, shepherd's purse (*Capsella bursa-pastoris*) = flowering with seed set, 15-19" Ht., annual bluegrass (*Poa annua*) = seed set, 3-5" Ht., redstem filaree (*Erodium cicutarium*) = flowering, 6-14" diameter, panicle willowherb (*Epilobium paniculatum*) = 4-6" Ht., barnyardgrass (*Echinochloa crus-galli*) = preemergence, large crabgrass (*Digitaria sanguinalis*) = preemergence and tumble panicgrass (*Panicum capillare*) = preemergence.

RAINFALL DATA: Weather Station: LODI.C (NCDC # 5032, Lodi, CA)

PRECIPITATION AMOUNT (INCHES) *Application Date 2/24/05

DATE	INCHES	DATE	INCHES
2/27/05	0.61	3/20/05 - 3/29/05	0.06 (.01"/Day)
3/1/05	0.39	3/20/05-3/29/05	1.56
3/2/05	0.14	Aprial/05	1.40
3/3/05	0.09	May/05	1.09
3/4/05	0.10	June/05	0.55
3/5/05	0.01		

RESULTS & DISCUSSIONS:

DPXF9636 + Roundup and DPXF9636 + Roundup + Karmex treatments:
 Postemergence activity = All treatments gave commercial control (92-100%) of annual sowthistle, prickly lettuce, common chickweed, annual bluegrass, panicle willowherb, common groundsel and shepherd's purse. Redstem filaree control (63-80%) was not commercial. Preemergence activity = Gave excellent control of barnyardgrass 162 DAT and commercial control of panicgrass and large crabgrass 91 DAT. Large crabgrass control 162 DAT fell off to 67-85%.

Gramoxone Inteon alone and Gramoxone Inteon + Goal + Princep treatments:
 Postemergence activity = All treatments gave excellent control (96-100%) of common groundsel, shepherd's purse, redstem filaree, prickly lettuce, common chickweed, annual bluegrass and willowherb. Gramoxone Inteon + Princep + Goal treatments gave better (87-97%) sowthistle control than Gramoxone alone treatments (40-80%). Preemergence activity = As expected, Gramoxone Inteon alone showed no activity on

the grass species. The tank mixtures gave good to excellent control of barnyardgrass and panicgrass 91 DAT. Crabgrass control was excellent 54 DAT but control fell off to 53--58% 91 DAT. Barnyardgrass control 162 DAT was 70-72%.

Chateau alone and tank mixed with Surflan, Princep or Roundup + Surflan treatments:

Postemergence activity = Both rates of Chateau alone gave excellent control of shepherd's purse, common chickweed, annual bluegrass and panicle willowherb. Both rates gave poor control of annual sowthistle and common groundsel. Needed the 2x rate of 0.75 lb ai/A to control redstem filaree. Preemergence activity = All treatments gave 92-100% control of the above grass species.

Surflan tank mixed with either; Gramoxone, Roundup, Rely, Goal or Roundup + Goal;

Postemergence activity = The best treatments for controlling redstem filaree, annual sowthistle, prickly lettuce, common chickweed, annual bluegrass, panicle willowherb, common groundsel and shepherd's purse were in the following order; (1) Surflan + Rely (99-100%), (2) Surflan + Gramoxone (93-100%), (4) Surflan + Roundup and Surflan + Roundup + Goal (88-100%) and (5) BY far the least effective tank mixture was Surflan + Goal which controlled only one weed, prickly lettuce. Preemergence activity = 91 DAT all treatments gave excellent control of barnyardgrass, panicgrass and large crabgrass (88-100%). The best treatments 162 DAT for controlling both, barnyardgrass and large crabgrass were in the following order; (1) Surflan + Roundup + Goal, (2) Surflan + Goal, (3) Surflan + Rely, (4) Surflan + Gramoxone and (5) Surflan + Roundup.

Table 1 - Postemergence Weed Control Study in Bearing Merlot Grapes

Treatments	Rate lb ai/Acre	Percent Weed Control ¹ DAT ²											
		Redstem Filaree	Common Sowthistle	Prickly Lettuce	Chickweed	Annual Bluegrass	Panicle Willowherb	Common Groundsel	Spotted Spurge	Barnyard grass	Large Crabgrass	Panicgrass	Crop Injury
		28 54	28 54 91	28 54 91	28 54	28 54	28 54 91	28 54	28 54	54 91 162	54 91 162	91	162
DPXF9636 (25WG) + Roundup (4SL)	0.047 + 1.0	63 68	100 100 100	97 96 95	100 100	100 100	100 100	100 100	100 100	100 100 90	100 92 67	93	0
DPXF9636 (25WG) + Roundup (4SL)	0.0625 + 1.0	57 73	100 100 100	93 97 95	100 100	100 100	100 100	100 100	100 100	100 100 100	100 96 72	97	0
DPXF9636 (25WG) + Roundup (4SL)	0.125 + 1.0	53 80	90 100 100	88 92 92	100 100	100 100	96 100	99 100	100 100	100 100 97	100 99 85	100	0
DPXF9636 (25WG) + Roundup (4SL) + Karmex (80DF)	0.047+1.0+1.6	57 63	82 97 97	87 90 96	100 100	100 100	100 100	100 100	100 100	100 100 98	100 93 72	99	0
DPXF9636 (25WG) + Roundup (4SL) + Karmex (80DF)	0.0625+1.0+1.6	83 80	97 100 100	90 93 96	100 97	100 100	100 100	100 100	100 100	100 100 97	100 99 73	100	0
Gramoxone Inteone (2EC)	0.625	96 96	27 27 40	100 100 100	97 97	100 100	100 100	100 100	100 100	0 0 0	0 0 0	0	0
Gramoxone Inteone (2EC)	0.75	98 96	45 50 80	100 100 100	100 99	100 100	100 100	100 100	95 96	0 0 0	0 0 0	0	0
Gramoxone Inteone (2EC) + Princep (90DF) + Goal (2EC)	0.625+2.0+1.0	96 95	90 87 87	100 100 100	100 99	100 100	100 100	100 100	100 97	98 83 70	99 53 37	99	0
Gramoxone Inteone (2EC) + Princep (90DF) + Goal (2EC)	0.75+2.0+1.0	98 99	95 97 97	100 100 100	100 100	100 100	100 100	100 100	100 100	98 93 72	98 58 37	97	0
Chateau (51WG)	0.375	43 57	50 56 61	100 78 80	100 100	100 100	100 100	40 50	100 100	100 100 100	100 98 96	100	0
Chateau (51WG)	0.75	88 93	67 53 53	100 100 100	100 100	100 100	100 100	60 47	100 100	100 100 100	100 100 99	100	0
Chateau (51WG) + Roundup (4SL) + Surflan (4F)	0.375+1.0+3.0	90 90	100 100 100	100 100 100	100 100	100 100	100 100	100 100	100 100	100 100 100	100 100 96	100	0
Chateau (51WG) + Surflan (4F)	0.375+3.0	82 86	67 55 57	100 93 93	100 100	97 100	100 100	15 20	100 100	100 99 95	100 99 90	100	0
CHATEAU (51WG) + Princep (90DF)	0.375+2.0	85 88	93 83 87	100 100 100	100 100	100 100	100 100	30 40	100 100	100 98 92	100 100 94	100	0
Goal (2EC) + Surflan (4F)	1.0 + 3.0	53 58	37 33 40	100 83 90	78 73	63 67	100 100	42 43	52 53	100 99 83	100 99 86	100	0
Goal (2EC) + Surflan (4F) + Roundup (4SL)	1.0 + 3.0 + 1.0	92 88	100 100 100	100 100 100	100 100	100 100	100 100	100 100	100 100	100 100 89	100 100 88	100	0
Rely (1EC) + Surflan (4F)	1.0 + 3.0	98 99	99 100 100	100 100 100	100 100	100 100	100 100	100 99	100 100	100 99 92	100 93 58	100	0
Roundup (4SL) + Surflan (4F)	1.0 + 3.0	83 88	100 100 98	100 100 100	100 100	100 100	97 95	97 95	100 100	100 99 73	100 88 33	100	0
Gramoxone Inteone (2EC) + Surflan (4F)	0.75 + 3.0	97 94	92 87 93	100 100 100	100 100	100 100	100 100	100 100	94 100	100 100 87	100 93 55	100	0
Untreated Check		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

1. Average of three replications: 0 = No weed control; no crop injury
100 = Complete weed control; crop dead

2. DAT = Days after treatment

Trial 3 – Postemergence Herbicides for Controlling Marestalk in Bearing Sangiovese Grapes. Mick Canevari, Paul Verdegaaal, Don Colbert, Randall Wittie & Scott Whiteley.

Objective: Evaluate several herbicides and combinations for postemergence weed control in California wine grapes.

METHODS & MATERIALS: The following herbicides were applied to the berm of an established Sangiovese grape vineyard located near Woodbridge, California on 2/24/05: (1) Chateau 51WG 0.375 lb ai/A. + Unifilm 707 @ 0.25% V/V, (2) Chateau 51WG 0.375 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25 V/V, (3)Goal 2EC 1.0 lb ai/A. + Roundup Ultra Max 4SL 1.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (4) Rely 1EC 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (5) Roundup Ultra Max 4SL 1.0 lb ai/A. + Surflan 4F 3.0 lb ai/A. + Unifilm 707 @ 0.25% V/V, (6) DPXF 9636 25WG 0.125 lb ai/A. + Unifilm 707 @ 0.25% V/V and (7) Untreated Check. Treatments were arranged in a randomized complete block design with three replicates. Plot size was 6' X 21'. Materials were applied with a CO₂ backpack sprayer, 35 psi in 40 gpa of water. Growth stages prior to the application were as follows: grapes were dormant, common chickweed (*Stellaria media*) = 5-7" Ht., flowering, marestalk [horseweed] (*Coryza canadensis*) = 0.5-3.0" diameter, 8-16 leaf, turkey mullein (*Eremocarpus setigerus*) = preemergence to cotyledon, 0.25" diameter and preemergence to panicgrass [witchgrass] (*Panicum capillare*) and large crabgrass (*Digitaria sanguinalis*).

RAINFALL DATA: Weather Station: LODI.C (NCDC # 5032, Lodi, CA)

PRECIPITATION AMOUNT (INCHES) *Application Date 2/24/05

DATE	INCHES	DATE	INCHES	DATE	INCHES
2/27/05	0.61	3/7/05-3/12/05	0.06(.01"/Day)	3/27/05	0.17
3/1/05	0.39	3/19/05	0.15	3/28/05	0.03
3/2/05	0.14	3/20/05	0.09	3/29/05	0.27
3/3/05	0.09	3/21/05	0.27	April/05	1.40
3/4/05	0.10	3/22/05	0.58	May/05	1.09
3/5/05	0.01	3/23/05	0.15	June/05	0.55

RESULTS & DISCUSSION:

Grape Injury: No visual grape injury was observed from any of the herbicide treatments.

Weed Control 28 & 54 DAT: Large crabgrass and panicgrass were not up prior to the herbicide applications. The control of these two grasses is due to the soil residual characteristic of the herbicide. First observations on % grass control were taken on 54 DAT. Chateau treatments gave excellent control (94-100%) of all the weed species except for marestalk (23-27%). The tank mix treatments of Surflan + Rely, Surflan + Roundup and Surflan + Roundup + Goal gave similar results; excellent control of all the weed species except for turkey mullein.

Weed Control 124 DAT: Large crabgrass and panicgrass were not up prior to the herbicide applications. The control of these two grasses is due to the soil residual characteristic of the herbicide. Both, Chateau alone and Chateau tank-mixed with Surflan gave poor control (20-23%) of marestalk with excellent control of common chickweed and turkey mullein. Both treatments showed good soil residual activity, with complete control of large crabgrass and panicgrass. Goal + Roundup + Surflan gave excellent control of all the weed species except for turkey mullein. Rely + Surflan resulted in excellent control of chickweed, horseweed and large crabgrass with no activity on turkey mullein. Panicgrass control was excellent 91 DAT but had fallen off to 63% 124 DAT. Roundup + Surflan gave 78% marestalk control, excellent control of chickweed and large crabgrass with no activity on turkey mullein. 91 DAT panicgrass control was 90% but fell off to 83% 124 DAT. DPXF9636 gave excellent control (93-100%) of all the weed species.

Weed Control 162 DAT: Chateau alone and Chateau tank-mixed with Surflan gave excellent control of turkey mullein, panicgrass and large crabgrass. Goal + Roundup + Surflan resulted in excellent control of the grasses with poor control of mullein. Both, Rely + Surflan and Roundup + Surflan treatments gave 90% control of large crabgrass with poor activity on mullein and panicgrass. DPXF9636 gave excellent control of mullein and panicgrass with 83% large crabgrass control.

Table 1 - Postemergenc Herbicides for Controlling Marestalk in Bearing Sangiovese Grapes.																					
Treatments	Rate lb ai/Acre	Percent				Weed					Control		DAT ²								Crop Injury ¹
		Marestalk				Turkey		Mullein			Common Chickweed		Large		Crabgrass		Panicgrass				
		28	54	91	124	28	54	91	124	162	28	54	54	91	124	162	54	91	124	162	
Chateau (51WG)	0.375	28	23	27	23	100	100	100	100	100	100	100	100	100	100	100	100	100	98	0	
Chateau (51WG) + Surflan (4F)	0.375 + 3.0	47	37	28	20	97	98	98	96	94	100	100	100	100	100	99	100	100	100	99	0
Goal (2EC) + Roundup (4SL) + Surflan (4F)	1.0+1.0+3.0	100	100	99	96	57	53	37	20	0	100	100	100	100	97	95	100	99	99	93	0
Rely (1EC) + Surflan (4F)	1.0 + 3.0	100	100	99	97	13	7	3	0	0	100	100	100	99	98	92	100	88	63	0	0
Roundup (4SL) + Surflan (4F)	1.0 + 3.0	100	100	83	78	7	3	0	0	0	100	100	100	97	95	89	100	90	83	50	0
DPXF9636 (25WG)	0.125	89	100	100	100	83	99	98	96	94	100	100	100	97	93	83	100	100	100	96	0
Untreated Control		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1. Average of three replications 0 = No weed control; no crop injury
100 = Complete weed control; crop dead
2. DAT = Days after treatment

Trial 4 – **Postemergence Herbicides for Controlling Hairy Fleabane in Bearing Merlot Grapes**, Mick Canevari, Paul Verdegaal, Don Colbert, Randall Wittie & Scott Whiteley.

OBJECTIVE: Evaluate several postemergence herbicides tank-mixed with Surflan for controlling hairy fleabane and other weed species in an established vineyard located near Woodbridge, California.

MATERIALS & METHODS: The following postemergence herbicides were applied on 2/24/05: (1) Chateau 51%WG 0.375 lb ai/A + Surflan 4F 3.0 lb ai/A, (2) Rely 1EC 1.0 lb ai/A + Surflan 4F 3.0 lb ai/A, (3) DPXF9636 25%WG 0.125 lb ai/A + Surflan 4F 3.0 lb ai/A and (4) Untreated Check. Unifilm 707 (NIS) was added to each herbicide treatment at 0.25% V/V. All treatments were applied with a CO₂ back pack sprayer, 35 psi and 40 gpa of water. Plot size: 6' by 40' strip, three observations taken from each strip and recorded. Growth stages prior to application: Merlot variety grape = dormant, hairy fleabane (*Erigeron bonariensis*) = 6-16 leaf, 1-4" diameter, redstem filaree (*Erodium cicutarium*) = flowering to seed set, 6-14" diameter, annual sowthistle (*Sonchus oleraceus*) = 8-12 leaf, 5-8" diameter, common chickweed (*Stellaria media*) = flowering, 6-7" height, annual bluegrass (*Poa annua*) = seed set, 3-5" height, common groundsel (*Senecio vulgaris*) = flowering, 6-10" height, shepherd's purse (*Capsella bursa-pastoris*) = flowering, 15-19" height, large crabgrass (*Digitaria sanguinalis*) = preemergence and barnyardgrass (*Echinochloa crus-galli*) = preemergence.

RESULTS & DISCUSSIONS:

Grape Injury:

14, 28 & 54 DAT: No visual grape injury from any of the treatments.

Weed Control: Herbicide treatments were tank-mixed with the soil residual herbicide Surflan.

14 DAT: Based on % total burndown, Rely was by far the most active with 93% followed by Chateau with 48% and DPXF9636 30%.

28 DAT: Chateau gave 85-100% control of redstem filaree, common chickweed, annual bluegrass and shepherd's purse with poor activity on hairy fleabane, common groundsel and annual sowthistle. Rely gave excellent control of all the above weed species. DPXF9636 resulted in the following % control: hairy fleabane = 83%, redstem filaree = 58%, annual sowthistle = 72% and 100% on chickweed, groundsel, shepherd's purse and annual bluegrass.

54 DAT: Chateau results were similar as above but gave excellent preemergence control of the grasses; large crabgrass and barnyardgrass. Rely gave complete control of the above all weed species. DPXF9636 showed excellent activity on all weed species except for redstem filaree = 73% and annual sowthistle = 40%.

91 DAT: Rated only three weed species; hairy fleabane, large crabgrass and barnyardgrass. Chateau gave no control of hairy fleabane with excellent grass control. Rely was still giving 100 % barnyardgrass control but hairy fleabane and large crabgrass control dropped to 85% and 82%, respectively. DPXF9636 excellent activity on all three weeds species.

Treatments	Rate lb ai/Acre	Percent Weed Control ¹										DAT ²									
		Hairy Fleabane			Redstem Filaree		Annual Sowthistle		Common Chickweed		Annual Bluegrass		Common Groundsel		Shepards purse	Barnyard grass	Large Crabgrass	Crop Injury ¹			
		28	54	91	28	54	28	54	28	54	28	54	28	54	28	54	54	91	54	91	91
Chateau (51WG) + Surflan (4F)	0.375 + 3.0	10	0	0	85	79	65	52	100	100	100	100	28	42	100	100	100	100	100	100	0
Rely (1EC) + Surflan (4F)	1.0 + 3.0	90	93	85	100	98	100	100	100	100	100	100	100	100	100	100	100	100	100	82	0
DPXF9636 (25WG) + Surflan (4F)	0.125 + 3.0	83	90	90	58	75	72	40	100	100	100	100	100	100	100	100	100	100	100	100	0
Untreated Control		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1. Average of three replications: 0 = No weed control; no crop injury
100 = Complete weed control; crop dead
2. DAT = Days after treatment

Trial 5 – **Late Postemergence Herbicide Study for Hairy Fleabane Control in Bearing Merlot Grapes.**
 Benny Fouche, Mick Canevari, Paul Verdegaal, Don Colbert, Randall Wittie & Scott Whiteley.

OBJECTIVE: Evaluate several postemergence herbicides for controlling hairy fleabane in an established vineyard located near Woodbridge, California.

MATERIALS & METHODS:

The following herbicides were applied postemergence to the berm of an established Merlot grape vineyard located near Woodbridge, California on 4/11/05: (1) Weed Pharm 20% Acetic Acid/Liter 50 G/A of undiluted product/A, (2) ROUNDUP Ultra Max 4SL 1.0 lb ai/A, (3) Rely 1 EC 1.0 lb ai/A and (4) Untreated Check. Unifilm 707 adjuvant (NIS) added to each herbicide treatment at 0.25% V/V. Treatments were arranged in a randomized complete block design with four replicates. Plot size was 4' by 14'. Roundup Ultra Max and Rely were applied with a CO₂ backpack, 35 psi in 50 gpa of water. Fleischmann's Vinegar was applied undiluted at 50 G/A. Growth stages prior to application were: grapes = 3-8" shoots and hairy fleabane (*Erigeron bonariensis*) = 50% 8-10 leaf, 1-2" diameter, 25% tillering & bolting initiation, 20-40 leaf, 1.5-2" diameter and 25% tillering & bolted, 40+ leaf, 3-6" diameter. First rainfall occurred on 4/23/05, total .11 inches.

RESULTS & DISCUSSIONS:

Grape Injury: All treatments showed excellent grape tolerance.

Weed Control: Three days after treatment, Weed Pharm showed 75% necrosis on hairy fleabane. However, by the 28 day rating the fleabane had completely recovered. Rely gave 41% necrosis on the three day rating with 100% fleabane control 28 DAT. Roundup showed no burndown 3 DAT but gave complete control of the fleabane on the 28 day rating.

Table1-Late Postemergence Herbicides for Hairy Fleabane Control in Bearing Grapes						
Treatments	Rate lb ai/Acre		% Hairy Fleabane	Control	DAT ¹	Crop Injury
			3 DAT ¹	8 DAT ¹	28 DAT ¹	28DAT ¹
WeedPharm (20%AL)	50 Gal/Acre		75	50	0	0
Roundup (4SL)	1.0		2	60	100	0
Rely (1EC)	1.0		41	85	100	0
Check			0	0	0	0

1. DAT = Days after treatment

