

**Cooperative Research Project, Doug Gubler, U.C. Davis Dept. of Plant Pathology**

Trial name.....	Grape powdery mildew fungicide Trial 2003
Location.....	Courtland, Sacramento Co. (Herzog Ranch)
Investigators.....	Doug Gubler, 530.752.0304; Ken Dell, Eugene Erickson 752.4982
Cooperators.....	John Baranek, Tom Herzog
Crop.....	Grape 'Chardonnay'
Disease.....	Powdery mildew, <i>Uncinula necator</i>

**Trial 3 layout and method**

Objective.....	Efficacy of fungicides for control of powdery mildew		
Experimental design ....	Treatments are field applications to 4 vine plots, in a randomized complete block design, with 4 replications.		
Application method ....	high pressure hand gun sprayer		
Vine spacing .....	7'	Row spacing.....	12'
Treatment unit.....	4 vines	Treatment unit area.....	336 ft <sup>2</sup>
Area/Treatment, sq ft ...	1344	Area/Treatment, acre .....	0.0308539
Vol. Water/acre, gal.....	138	Vol. water/trt, gal.....	4.25
Apps timing .....	A=shoot growth, B = pre-bloom; C=bloom, D=berry set, E=preclose, F,G=veraison		
		Evaluation stage.....	1 week after final app.

**Treatments protocol, Trial 3**

#	Color	Sponsor	Materials	App code	Interval	FP/A		Tol
1	W	Syngenta	Untreated					Y
2	P	Syngenta	Sulfur dust Sulfur 80DF Vangard 75DF	A1,A2 A3-B C-G	7d 7-10d 14d	4 10	lb oz	Y Y
3	B	Syngenta	Sulfur dust Sulfur 80DF Elevate 50WG	A1,A2 A3-B C-G	7d 7-10d 14d	4 1.5	lb lb	Y Y
4	PU	Lab	Sulfur dust Sulfur 80DF Flint 50WG	A1,A2 A3-B C-G	7d 7-10d 14-17d	4 1.5	lb oz	Y Y

Notes:

1. Tol indicates whether all products in the treatment have an EPA tolerance for grapes, and the crop can be harvested.
2. A slash '/' in a sequence of materials means 'followed by'.

**Materials list**

Sponsor	Product	Active Ingr.	Conc.	Tol.	Mfr
Syngenta	Vangard 75DF	Cyprodinil	75%	Y	Syngenta
	Elevate 50WG	Fenhexamid	50%		Arvesta
Lab	Flint 50WG	Trifloxystrobin	50%		Bayer

**Application schedule**

Date App.# Stage Vol/trt Color	7 Apr 03	14 Apr A1	23 Apr 03 A2 19, 55, 57 4.25 gal	29 Apr 03 A3 19, 55, 57 4.25 gal
Trt#	FP/trt	FP/trt	FP/trt	FP/trt
W	1	----	----	----
P	2	Sulfur dust	Sulfur dust	Sulfur dust or Sulfur 80DF 66 g
B	3	Sulfur dust	Sulfur dust	Sulfur dust or Sulfur 80DF 66 g
PU	4	Sulfur dust	Sulfur dust	Sulfur dust or Sulfur 80DF 66 g

Date App.# Stage Vol/trt Color	8 May 03 A4 BBCH 57 4.25 gal	16 May 03 B BBCH 57-61 4.25 gal	23 May 03 C BBCH 67 4.25 gal	5 Jun 03 D BBCH 71 4.25 gal
Trt#	FP/trt	FP/trt	FP/trt	FP/trt
W	1	----	----	----
P	2	Sulfur 80DF 66 g	Sulfur 80DF 66 g	Vanguard 75DF 8.75 g
B	3	Sulfur 80DF 66 g	Sulfur 80DF 66 g	Elevate 50WG 21 g
PU	4	Sulfur 80DF 66 g	Sulfur 80DF 66 g	Flint 50WG 1.3 g

Date App.# Stage Vol/trt Color	19 Jun 03 F BBCH 77 4.25 gal	3 Jul 03 F BBCH 79 4.25 gal	17 Jul 03 F BBCH 79 4.25 gal	21 Jul 03 F BBCH 81 4.25 gal
Trt#	FP/trt	FP/trt	FP/trt	FP/trt
W	1	----	----	----
P	2	Vanguard 75DF 8.75 g	Vanguard 75DF 8.75 g	Vanguard 75DF 8.75 g
B	3	Elevate 50WG 21 g	Elevate 50WG 21 g	Elevate 50WG 21 g
PU	4	Flint 50WG 1.3 g	Flint 50WG 1.3 g	Flint 50WG 1.3 g

**Calendar of events**

Date	Activity
twice	Grower-applied sulfur dust on rows 24-27
23 Apr	Grower-applied sulfur dust to new guard rows 26, 27
29 Apr	KD, EE;
8 May	KD, EE; 'A4' spray; 11:00-11:30; 55F; 0-10 mph west breeze; clear to P.C.; BBCH 57
16 May	KD, EE; 'B' spray; 7:00-7:20AM; 62F; calm; clear; BBCH 57-61
23 May	KD, EE; 'C' spray; 11:00-11:30AM; 82-84F; clear, calm to slight W breeze; BBCH 61-69 (avg 67)
5 Jun	KD, EE; 'D' spray; 9:00-9:30AM; 64-66F; clear, 5-10 mph W wind; BBCH 71
19 Jun	KD, EE; 'E' spray; 9:00-9:30AM; 62F; clear, 10 mph W wind; BBCH 75-79 (mostly 77)
23 Jun	'F'; KD, EE; 10:00-10:30AM; 70F; clear, 5-10 mph NW breeze; BBCH 78; sprayed all skipped vines w/ 2% Stylet Oil + Flint (1.5 oz/A)
3 Jul	'F'; EE, PO; 7:00-7:30AM; 65F; clear, calm, BBCH 79
17 Jul	'F'; EE, PO; 12:30-12:50PM; 90F; clear, calm; BBCH 79
21 Jul	'F'; EE; 11:15-11:30AM; 90F; clear, calm; BBCH 81
29 Jul	Lab rate; 7.5 brix
9 Sep	EE; map bad vines for next season; remove flagging tape

**Trial 3 treatment results**

#	Color	Materials, rate/A	Applications	Severity, %	Incidence,%
4	PU	Sulfur dust.....	AB	2.7 c	65.6 b
		Sulfur 80DF 4 lb.....	CDEF		
		Flint 50WG 1.5 oz.....	GHIJK.....		
2	P	Sulfur dust.....	AB	22.9 b	98.1 a
		Sulfur 80DF 4 lb.....	CDEF		
		Vanguard 75DF 10 oz.....	GHIJK.....		
3	B	Sulfur dust.....	AB	29.2 b	98.1 a
		Sulfur 80DF 4 lb.....	CDEF		
		Elevate 50WG 1.5 lb.....	GHIJK.....		
1	W	Untreated.....		100 a	100.0 a

Note: Applications are listed in alphabetical sequence, and each letter corresponds to one application. Values in a column followed by the same letter are not significantly different according to Fisher's LSD t test, P=0.05.