

EFFICACY OF AUXIGRO FOR CONTROL OF GRAPE POWDERY MILDEW ON CABERNET SAUVIGNON, 2000:
Fungicide treatments were arranged in a randomized complete block design in a block of 'Cabernet Sauvignon' planted in 1985 on a 7x10 ft spacing. Vines were trained to a bilateral cordon with spur pruning. The number of buds was adjusted based on pruning weights at the rate of 30 buds/kg canes. Shoot thinning occurred 22-24 May. Each treatment was replicated on 3 sets of 5 vines. Treatments were applied using a handgun sprayer at 300 psi at a rate of 100 gal water/A for the first application. All following applications were applied using a hooded boom sprayer at 300 psi at a rate of 150 to 200 gal water/A. Approximately 3-5 gal of spray suspension was applied per 15 vines depending on time of year and growth of vines. Fungicides were applied on 25 May (6-12 inch shoots, EL growth stage 10-12), 9 Jun (prebloom, EL 17), 22 Jun (10% bloom, EL 20), 6 Jul (EL 27, shatter), 20 Jul (bunch closure), and 2 Aug. Rally was accidentally applied to one set of vines treated with Auxigro on 22 Jun. No leaves were removed from the fruiting zone. According to the Gubler-Thomas powdery mildew forecasting model, there were 12 rain events between budbreak (20 Apr) and end of bloom that were favorable for ascospore release and infection: 4 severe infection periods (21 Apr, 9 May, 6 and 11 Jun), 4 moderate infection periods (28 Apr, 1, 7 and 27 May), and 4 low infection periods (24 Apr, 2, 4 and 29 May). Urea fertilizer was spread within vine rows on 14 Apr at 250 lb/A. The herbicide Roundup Original (12 oz/A) plus R-11 (12 oz/A) was applied to control weeds in the vine row on 27 Jun. Incidence of powdery mildew on leaves was evaluated on 21 Jun, 3 Jul, 10 Jul, 25 Jul, 14 and 22 Aug by randomly examining 50 leaves from the middle 3 vines of each replicate. Severity of powdery mildew on leaves was evaluated on 14 Aug. Incidence and severity of powdery mildew on clusters was evaluated on 3 Aug by randomly examining 50 clusters from the middle 3 vines of three replicates. Comparisons among treatments for incidence of powdery mildew on leaves were evaluated by calculating the area under disease progress curves (AUDPC). AUDPC was calculated by multiplying the mean severity from two observation dates by the number of days between observations ($\sum[Y_{i+1} + Y_i]/2][X_{i+1}-X_i]$ where Y_i is incidence of mildew at i th observation and X_i is the day of the i th observations). Values calculated between each pair of observations are added together to obtain a total AUDPC.

Powdery mildew was first found very early in the year on 17 May on adjacent Chardonnay vines not treated for powdery mildew the previous year. The incidence of powdery mildew on nontreated Chardonnay leaves had jumped from 12% on 21 Jun to 83% on 3 Jul. During that same time period, vines treated with Auxigro plus Break-Thru or Break-Thru alone jumped from an average of 3% to 52% of the leaves with powdery mildew. Vines treated with Auxigro plus Break-Thru had significantly more powdery mildew than vines treated with Rally when all measures of disease are compared. Vines treated with Auxigro plus Break-Thru had statistically similar levels of powdery mildew as vines treated with Break-Thru alone when all measures of disease are compared. Vines treated with Auxigro plus Break-Thru alternated with Rally had significantly higher AUDPC than vines treated with Rally alone. Vines treated with Rally to start the season alternated with Auxigro plus Break-Thru (and thus Rally again at 10% bloom) had statistically similar cluster severity when compared to vines treated with Rally alone. No phytotoxicity was observed on any vines treated with any fungicide.

Treatment and Rate/A	Time of Application**	% Leaves with Powdery Mildew (14 Aug)*		AUDPC (Leaves)*	% Clusters with Powdery Mildew (3 Aug)*	
		Incidence	Severity		Incidence	Severity
Break-Thru 8 oz.....	All.....	90.7 a	12.7 a	43.7 a	100 a	79.7 a
Auxigro 4 oz +						
Break-Thru 8 oz.....	All.....	94.7 a	13.3 a	41.6 a	100 a	73.6 a
Rally 40 WP 4 oz	All.....	32.7 c	0.7 b	8.1 c	80.9 b	5.5 c
Auxigro 4 oz +						
Break-Thru 8 oz Alternate....	A, C, E					
Rally 40 WP 4 oz	B, D, F.....	66.7 b	5.8 ab	22.5 b	100 a	20.5 b
Rally 40 WP 4 oz Alternate	A, C, E					
Auxigro 4 oz +						
Break-Thru 8 oz	B, D, F.....	76.0 ab	5.8 ab	26.5 b	99.3 a	14.3 bc

* Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05)

** Application dates: A = 25 May (6-12 inch shoots, EL growth stage 10-12), B = 9 Jun (prebloom, EL 17), C = 22 Jun (10% bloom, EL 20), D = 6 Jul (EL 27, shatter), E = 20 Jul (bunch closure), and F = 2 Aug.