

**Project Report
Viticulture Consortium
May 2000-February 2001**

Project Title: Development of a “Soft” Powdery Mildew Program for Sustainable and Organic Growers in the North Coast.

Principle Investigator: Glenn McGourty

Objectives and Experiments Conducted to Accomplish Objectives:

A. Evaluate alternatives to sulfur dust that are also acceptable to organic and sustainable viticultural farming systems:

A test plot was developed at Roederer Estate US in a Chardonnay block noted for powdery mildew incidence. A randomized complete block statistical design was used. Nine treatments were applied to 4 reps of three vines, for a total of 120 vines. Fungicides tested included Rallye (grower standard), MKP, Elexa, MKP + Elexa, AQ-10, Kaligreen, Rallye +Erase, Erase only, and a control (sprayed with water).

Weather monitoring data was collected with an Adcon System station, and the powdery mildew index was consulted, allowing longer intervals between some of the applications. According to the model, high pressure occurred on at least 18 days during the course of the experiment.

From budbreak until bloom, micronized wettable sulfur was applied to all vines. Sulfur dust was applied during bloom period. Following bloom, materials were applied according to label rates, using the recommended calendar intervals for control. For most of the “soft” materials, these intervals are similar to sulfur dusting, 7-10 days. For Rallye, up to 21 days between sprays is acceptable. Erase, a new experimental eradicant fungicide, is applied when powdery mildew is visible. Erase was applied twice late in the season. Following is a summary of the materials applied:

Material	Rate	#Sprays	Dates Applied
AQ-10	1 oz./acre	6	6/13, 6/20, 6/27, 7/7, 7/17, 7/27
Elexa,	1%	6	as above
Elexa + MKP	1 % +	6	as above
MKP only		6	as above
Kaligreen	2.5 lbs/acre	6	as above
Rallye	4 oz./acre	3	6/13, 6/27, 7/17
Rallye, + Erase	4oz.+ 1 qt./acre	3, +2	Rallye as above, Erase 7/27, 8/8
Erase Only	1qt./acre	2	7/27, 8/8
Material	Rate	#Sprays	Dates Applied
Control, water	100 gpa	6	6/13, 6/20, 6/27, 7/7, 7/17, 7/27

B: Microvinify wines to assure that there are no off-flavors or other difficulties during fermentations.

Approximately 5 gallons of wine were made from the plots containing Elexa, Elexa +MKP, Erase, and Erase+ Rallye, as well as an untreated control. Grapes were picked on September 15th at 22E brix, crushed and inoculated with yeast, and allowed to ferment dry in glass five gallon containers. At that time, the wines were inoculated with malolactic bacteria cultures. Wines were racked Dec.15th, sulfites added, and are presently maturing. Tastings are scheduled for March.

Major Accomplishments and Results:

Objective A: Happily for the grower, and unfortunately for us, powdery mildew failed to occur in our test plot. In general, 2000 was considered a low pressure year. In discussions with Doug Gubler, he feels that micronized wettable sulfur applied pre-bloom is among the most effective powdery mildew programs available. In the vineyard areas around the plot, sulfur dust was applied at 7-10 day intervals, also considered a highly effective program by Dr. Gubler. Consequently, there was little inoculum to infect the trial.

During this coming year, we will be in a different location more prone to mildew, and the grower will not apply wettable sulfur to the plot area prior to bloom. A brief cost analysis for the different products is below:

Material	Unit Cost	Cost for Season Control
Sulfur Dust	\$.14/ lb	\$16.80
Rallye	\$68.00/lb	\$51.00
Kaligreen	\$5.75/lb	\$86.25
AQ-10	\$15/ounce	\$90*
Erase, MKP, Elexa	Experimental, not available for use at this time	

*Fewer applications may be necessary than used in this trial

Sulfur dust remains the most economic of the materials used in this trial. Manufacturers of Elexa, MKP and Erase suggest that their materials will be similar in cost to conventional fungicides, but they haven't determined pricing at this time.

B. We were able to successfully microferment some of the treatments in this trial. At this time, we have not evaluated the wines, and are allowing them to age before comparative tasting.

Publications or Reports Resulting from the Project:

A summary of the project was give during the EcoWinegrowing Conference sponsored by UCCE and the Mendocino Winegrowers' Alliance held in August, 2000. No other reports or publications have been written.

Summary of Current Years Results

Development of a “Soft” Powdery Mildew Control Program for Sustainable and Organic Growers in the North Coast

Glenn McGourty, UCCE Lake and Mendocino Counties

A spray trial for powdery mildew control on winegrapes was conducted at Roederer Estate US in Philo in a block of conventionally farmed ‘Chardonnay’ grapes. Nine treatments were used, including Rallye, MKP and Elexa, Elexa only, Erase and Rallye, Erase only, MKP only, AQ-10, and a water control. A randomized complete block design consisting of 4 replications of 3 vines was used. Materials were applied at 7-10 day intervals depending on powdery mildew pressure as indicated by an Adcon Weather Monitoring Station. Experimental lots of wine were made for taste evaluation (six lots).

Unfortunately, powdery mildew failed to develop in the plot due to overall low pressure, and an effective prebloom micronized wettable sulfur spray program. In the coming year, the plot will be relocated to a higher pressure area, and prebloom sulfur sprays will not be applied to the test plot area.