Powdery Mildew

Roger Duncan, Pomology Farm Advisor, UC Cooperative Extension, Stanislaus County

The powdery mildew fungi that affect grapes and peaches are different species, yet their management in the field is very similar. These mildew fungi grow and disperse very quickly when temperatures are between 70° and 85° F and do not need (or even want) rain to infect your plants. If you feel comfortable outside with a T-shirt on, you can bet mildew is in high gear. A mildew model was established a few years ago to help grape growers manage their mildew sprays. When temperatures are mild (warm, not hot), mildew spays should be applied on a tight schedule. On the other hand, if temperatures are too high or too low, growers can stretch their mildew spray intervals and perhaps save a spray or two. Although the model was developed for grapes, I think peach growers can use it as a good general guide also.

The model is simple to use as long as you have access to hourly temperature data. Hourly temperature data can be accessed for the Escalon area by going to the University of California Integrated Pest Management webpage (http://ipm.ucdavis.edu), clicking on weather data, and then selecting the Escalon weather station in San Joaquin County. All Stanislaus County weather stations only have daily weather summaries – you need hourly summaries to use the model.

The model is based on a point system that ranges from 0 – 100. Each day that we have 6 or more continuous hours of temperatures between 70° & 85° F, we add 20 points. If we have less than 6 hours between 70° & 85° or if temperatures exceed 95° F, we subtract 10 points. Total points can never go above 100 or below 0. For example:

	No. of Hours 70°-85° F	Daily Points	Total Points (Mildew Index)
Day 1	2	0	0
Day 2	5	0	0
Day 3	6	20	20
Day 4	8	20	40
Day 5	3	-10	30
Day 6	6	20	50
Day 7	7	20	70
Day 8	8	20	90
Day 9	6	20	100
Day 10	7	20	100
Day 11	2	-10	90
Day 12	0	-10	80

When the index is low (0 - 30), growers can comfortably double mildew spray intervals. For example, sulfur is usually applied on a 7 – 10 day interval. When the index is low (as it has been for most of this year so far), sulfur can be safely applied on a 14 – 20 day schedule. If the index hovers in the 40-50 point range, mildew sprays should be applied at moderate intervals (about every 10 days for sulfur). If the index stays at 60 points or more, intervals between sprays should be very short (every 7 days for sulfur). Last season the mildew index stayed near 100 points all spring. A few growers who stretched their mildew sprays had mildew problems. Due to the cool spring so far this year, the mildew index has been zero for most of this season. That means that growers could have saved money by skipping mildew sprays or significantly stretching intervals between sprays. For more information on how to use this model, contact me at 525-6800 or go to our IPM website at http://ipm.ucdavis.edu and click on interactive tools and models.