2006 Grape Disease Potential at Crown Valley Winery Ste. Genevieve, MO
(Data not recoded from 5 June to 24 July)

Black Rot: **risk** is greatest from just before bloom until about 6 weeks after bloom. So if the risk is >1 during this time period then there is a pretty good likelihood that infections could occur. About 6 weeks after bloom the fruit become resistant. **Risk > 1 (> 7 hrs leaf wetness)** indicates protectant spray needed to prevent infection on 22-23 April, 2, 10-11, 20-22, 30-31 May, 2 June and 9 – 15 Aug. (St. James area had high risk 7, 17-18, 23 June, 10-11, 14 July) (black arrows indicate spray timing)

Botrytis: NC recommends 4 sprays, one a bloom, closing, veraison and preharvest. Bloom spray may not be needed in AR which may be supported by the botrytis model. If conditions aren't favorable then you could probably omit the spray safely. I'd be more cautious with the spray at closing and just include a botrytis spray at veraison and preharvest. **Risk > 1 indicates high risk of infection on 23 April (pre-bloom, so no problem) and 10 and 20 May due to > 9 Hours with air > 95% RH and > 15 hours of leaf wetness but no conditions for Botrytis infection since.** (black arrow indicates spray timing)
**Downy Mildew:** First infections usually occur when there is 5-10 inches of shoot growth and foliar infections can occur through the summer and into the fall. **Vines are most susceptible from about 2 weeks before bloom until 4 weeks after bloom.** The model should give an idea of when leaf infections have occurred during the summer. Since the phosphorus acid products are primarily eradicants, after model predictions of infections would be a good time to use them. **Risk > 2 indicates high risk of infection on 10 and 23 May to 1 June... 29 July** but probably no vine susceptibility after mid-July when conditions conducive for high infection risk (black arrows indicate spray timing).

![Downy Mildew Graph](image)

**Powdery Mildew:** Infections can occur soon after bud break. **The most important sprays must protect fruit a week or 2 before bloom to about 1 month after bloom on vinifera.** The model requires 3 consecutive days with at least 6 hours between 70-85°F to trigger the conidial index which increases 20 points each day with at least 6 hours between 70-85°F. Index decreases 10 points each day with less than 6 hours between 70-85°F or any day with a minimum temperature above 95°F. **Conidial index increasing past 60 (blue horizontal line below) means pathogen will be producing conidia in 5 days.** Needed powdery mildew fungicide protectant sprays by: 15 April and 23 May but low risk in August (*St. James area had high risk during June to early July*) (see black arrows below). An index of 0-30 indicates the pathogen is functioning minimally and reproductive rate is every 15 days or not at all. Ignore the red points indicating ascospore severity.

![Powdery Mildew Graph](image)
The leaf wetness (LW) and soil moisture (SMSA in units kPa) for June (Crown Valley Winery in Ste. Genevieve, MO). Note that the soil was adequately moist from April through early June but became dry from late July to 15 August, from 9 to 22 September and from 10 to 16 October (need irrigation or rain when sensor > 60 kPa).