Why do we need to scout and monitor for pests, if we are going to apply a pesticide anyway? (This question was asked of me at the Wisconsin Fresh Fruit and Vegetable Conference this past January.)

On the disease side of grape production, we often take a preventative approach to protecting the crop. This means applying fungicides before we see signs of infection or disease symptoms. Many fungicides or tank mixes of fungicides will prevent a broad range of pathogens from infecting grapes and grape plant tissue. All in all, a preventative approach to disease management protects the crop. As time goes on, failures in disease management are likely to occur. There are a number of reasons why disease management is going to fail at some point. Grape vines are always growing. Two or three weeks after a fungicide application there will be many new leaves, petioles, tendrils, and shoots that are unprotected, regardless if the last fungicide application was a protectant (Captan, Mancozeb, Copper, or Sulfur) or systemic (strobilurins – Abound, Sovran, Flint, Pristine [strobilurin + boscalid]). The active ingredient of protectant fungicides remains on the leaf surface, whereas the active ingredient of many systemic fungicides are locally systemic (move within the area where applied). As the grape plant grows and produces new tissue after a fungicide application, the new tissue is unprotected and systemic fungicides become diluted within the increased plant tissue mass. Another reason why disease may develop is that weather prevents you from applying a fungicide at the right time. For example, your last fungicide cover is nearing its effective time limit and wet rainy weather precludes a timely fungicide application. If this occurs, you need to know what potential pathogens may have infected your crop during a potential infection period. Remember, an infection period is when environmental conditions are conducive for an infection to occur. However, disease symptoms often do not become apparent for some time.
This means you have to understand the biology and ecology of some of the disease causing pathogens and the environmental conditions that favor infection. Another reason why disease may develop is simply that some grape varieties are more susceptible to some pathogens. For example, La Crescent is highly susceptible to downy mildew. Therefore, a preventative disease program for La Crescent may require that fungicides be applied more frequently. A disease may also develop because a pathogen has developed resistance to a particular fungicide (see last week’s IPM report). The point is that simply spraying fungicides on a calendar schedule may work for a while, but at some point the system is going to fail. Then you will have to learn disease symptomology, environmental conditions that favor infection, and the efficacy of fungicides on specific pathogens.

For a good grape disease IPM program keep the following in mind

- When was the last cover spray applied
- What are the forecasted environmental conditions for the immediate future
- With these environmental conditions, what are potential disease problems
- Will the last cover spray protect the crop through the forecasted conditions
- Where in the vineyard do disease problems occur annually
  - Why – lack of air flow, variety, uncontrolled vegetative growth – high nitrogen
  - What is this telling me and what can I do culturally
    - Open the canopy early through shoot thinning
    - Balance prune
- Where in the vineyard do disease problems seldom occur
  - Why – good air flow, good weed control, variety resistance, balanced growth and fruiting

The last two points above can only be learned from spending time in the vineyard and scouting and monitoring. Your goal should be to get the longest protection from your fungicide without putting your crop at risk. This can only be done by taking the factors listed above into consideration. In essence, IPM needs to be balanced with risk assessment.

Answer

The light yellow spots are an early infection of downy mildew and La Crescent is highly susceptible to downy mildew. Now you need to know when was the last potential infection period and what fungicides were applied during the last cover. In this case the last fungicide application was 7 days ago and the fungicides applied were Pristine and Mancozeb. Upon consultation the grower chose not to apply anymore fungicides. Why? The thought was that Pristine would likely “burn out” the existing infections. Three days latter, the yellow spots were gone. Now what would you have done?
Development of wine grapes in the grape variety trials at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI and West Madison Agricultural Research Station (WMARS), Madison, WI

Brianna at PARS 6.11.2012
28 to 32 inch shoots
Full Bloom

Brianna at WMARS 6.11.2012
Pea sized berries

Foch at PARS 6.11.2012
18 to 30 inch shoots
20% Bloom

Foch at WMARS 6.11.2012

Frontenac at PARS 6.11.2012
26 to 34 inch shoots
Full Bloom

Frontenac at WMARS 6.11.2012
Development of wine grapes in the grape variety trials at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI and West Madison Agricultural Research Station (WMARS), Madison, WI

La Crescent at PARS 6.11.2012
24 to 30 inch shoots
40% Bloom

La Crescent at WMARS 6.11.2012

La Crosse at PARS 6.11.2012
20 to 24 inch shoots
15% Bloom

La Crosse at WMARS 6.11.2012

Marquette at PARS 6.11.2012
30 to 42 inch shoots
40% Bloom

Marquette at WMARS 6.11.2012
Development of wine grapes in the grape variety trials at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI.
What’s lurking in or near the vineyard this week?

Rose chaffer appeared near the end of last week in Door County. The light tan beetle is typically a major pest of grapes planted on sandy soils. Rose chaffer appears near the end of May or early June around the time of grape bloom. The beetles consume grape foliage and young grape clusters. In newly planted vineyards, large uncontrolled outbreaks of Rose chaffer can cause considerable damage and set back grape production. For control recommendations see 2012 Midwest Small Fruit and Grape Spray Guide, page 18.

Downy mildew on wild grape leaf. The appearance of “oily” yellow spots on the top of the leaf (left photograph) and a slight yellow-brown discoloration on the bottom of the leaf (right photograph). Although the disease has not progressed to the point of spore production. Remember downy mildew will produce a “downy” mass on the bottom of the leaf, in contrast, powdery mildew can form a “powdery” mass on both the top or bottom of a leaf.

Downy mildew on La Crescent (left). These light yellow, “oily” spots are symptoms of an early infection and the disease has not progressed as quickly as the downy mildew on wild grapes (above photographs). The progression was arrested by the last fungicide application of Pristine.
Degree Day\(^1\) (base 50) Accumulation from April 1 to June 10, 2012 at Peninsular Agricultural Research Station in Sturgeon Bay, WI

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<th>Date</th>
<th>2012</th>
<th>2011</th>
<th>5 Year Average(^2)</th>
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<td>4/1 to 6/10</td>
<td>483</td>
<td>372</td>
<td>418</td>
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\(^1\)Modified method.
\(^2\)Average from 2007 to 2011.

Degree Day\(^1\) (base 50) Accumulation from April 1 to June 10, 2012 at West Madison

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<td>4/1 to 6/10</td>
<td>716</td>
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\(^1\)Modified method.
\(^2\)Average from 2007 to 2011.

Accumulated degree days\(^1\) (base 50) for the month of March in Sturgeon Bay and Madison, WI.

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\(^1\)Modified method.
\(^2\)Data from http://www.doa.state.wi.us/degreedays/

Please scout your vineyards on a regularly scheduled basis in an effort to manage problem pests. This report contains information on scouting reports from specific locations and may not reflect pest problems in your vineyard. If you would like more information on IPM in grapes, please contact Dean Volenberg at (920)746-2260 or dean.volenberg@ces.uwex.edu.