

Disease Management Options for Vineyards Frozen Out by the Freeze – April 2007

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Many vineyards have experienced heavy crop losses due to the recent freeze. While it is not practical or necessary to maintain a complete fungicide spray schedule, you should spray frequently enough to maintain a reasonably healthy canopy. It is important not add additional stress to cold injured vines. If you have a partial crop and plan to harvest it you will need to follow a more complete spray program than outlined below.

Downy mildew has the greatest potential to defoliate vines since it is usually a problem from just before bloom and through much of the late summer and fall. Powdery mildew does not have as much potential to defoliate vines but can significantly reduce the photosynthetic potential of the leaves. It is important to control both of these diseases from 1-2 weeks before bloom until 4-6 weeks after bloom. If you control them early in the season, then they are not as likely to be a problem later in the season.

It is also a good idea to control phomopsis and black rot during the early part of the season. The primary reason for controlling these diseases is to prevent them from building up on the canes which will make the diseases more difficult to control next year.

Other rots such as botrytis, bitter rot and ripe rot may become a problem on any fruit that develop but they shouldn't result in an increased threat to the crop next year.

The most economical and effective programs to use are based on use of various combinations of mancozeb, captan, copper and sulfur. Most of the vinifera and hybrid varieties that we grow are not sensitive to copper or sulfur but you should check before using them. Mancozeb has good activity against downy mildew, phomopsis and black rot, but no activity on powdery mildew. Captan has similar activity but is a little weaker on black rot. Copper has good activity on downy mildew and will control powdery mildew when the disease pressure is not high. It is not very effective on black rot or phomopsis. Sulfur has activity primarily on powdery mildew.

As new growth begins to come out the following program matches the potential disease problems with the materials above.

First 2 sprays – copper (or copper + lime) – there are a number of copper products registered for grapes.

Prebloom – mancozeb + sulfur or copper + sulfur – mancozeb + sulfur has more activity on black rot and phomopsis

Post bloom – same as prebloom

Cover sprays – captan or mancozeb + sulfur or copper + sulfur – you can probably drop the sulfur out once threat of powdery mildew lessens, typically about a month after bloom. Since there are no fruit to harvest, mancozeb use is not restricted by the preharvest interval but is restricted by the pounds of product allowed per acre.

Spray about every 2 weeks early in the season. If we get into a wet period reduce the spray interval, and you can stretch it out if it's dry. During the summer spray every 3 weeks. If it's wet, this schedule might not adequately control downy mildew in the mid- to late-summer. Scout your vineyards on a regular basis for downy mildew and use Prophyt or a similar phosphite fungicide to control it if it becomes a problem.

Do not use any of the DMI fungicides (Nova, Elite, Rubigan, etc) or QoI fungicides (Pristine, Flint, Abound, Sovran) in frozen out vineyards this year. Resistance of the powdery mildew fungus to both of the groups of fungicides has been reported and we have documented resistance of the downy mildew fungus to the QoI fungicides in NC. By not using either we are putting less selection pressure on both fungi do develop resistant populations.

It is important to maintain a management program for vectors of the Pierce's disease bacterium in vineyards in the warmer growing regions in the Piedmont and southern Mountains. Unfortunately there are no inexpensive alternatives to use for managing the vectors.

Finally, we are likely to see a significant increase in crown gall in many vineyards. The bacterium is present in most vines but does not cause a gall unless there is an injury (freeze injury) that damages the cells and allows the bacterium to insert its DNA into grape cells.