



Timely Viticulture

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"Timely Vit" is designed to give those in the Maryland grape industry a timely reminder on procedures or topics they should be considering in the vineyard.

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Pre-Bloom To Post-Bloom Disease Management

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The period from just before bloom to 3 to 4 weeks after bloom is critical for protecting flowers and newly set fruit from black rot (BR), Phomopsis fruit rot (Ph), powdery mildew (PM), downy mildew (DM), and Botrytis bunch rot infection. Maryland growers may refer to Extension Fact Sheet 848, Guidelines for Developing an Effective Fungicide Spray Program for Wine Grapes in Maryland for specific management recommendations.

Immediate Pre-bloom to Early Bloom

- At immediate pre-bloom, inflorescences are fully developed and flower buds are separating; bloom begins with capfall (Eichhorn-Lorenz stages 17–19). Apply a pre-bloom spray at this stage or 10 days after the last shoot spray.
- From pre-bloom through post-bloom, use the most effective fungicides for BR and Ph. Wine grape fruit are susceptible to BR and Ph infection for up to 6 weeks after bloom, though Ph becomes less active as the weather warms up.
- Botrytis protection may be advisable at pre-bloom in wet years, especially on varieties with tight fruit clusters such as Pinot.
- Continue PM protection. If you have successfully protected shoots and foliage from primary PM infections earlier in the season, you will have less inoculum in your vineyard to create secondary infections on fruit and leaves. PM spores can travel long distances, however, and fruit remain susceptible until they reach 8° Brix, about 3 weeks before maturity.
- Continue DM protection. If you are using a strobilurin, including Pristine, to control other diseases, add a DM fungicide to the tank as insurance against strobilurin-resistant strains of the DM fungus. Good choices include captan, mancozeb, or a phosphorous acid (phosphite).
- Keep spray intervals at 7–10 days through the post-bloom spray and ensure thorough coverage. Use a 7-day interval if you are applying sulfur for PM or if 2 or more inches of rain have fallen since the last spray. If rain is predicted between 7 and 10 days after the last spray, make the next spray before the rain.

Bloom

- Bloom encompasses the stages from capfall to late bloom, when up to 80% of the caps have fallen (Eichhorn-Lorenz stages 19–25). Apply a bloom spray 7–10 days after the pre-bloom spray.

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- Continue maximum protection for **BR**, **Ph**, and **DM** (see pre-bloom notes).
- Scout for primary **PM** infections on rachises. If you see actively sporulating colonies, apply a potassium salt (e.g., Armicarb, Kaligreen, Nutrol) as an eradicant, plus sulfur for protection. With thorough coverage, potassium salts provide moderate to good control of developing powdery mildew colonies but no protection against future infections. Do not apply protectant fungicides other than sulfur to actively sporulating PM colonies.
- Begin **Botrytis** protection if you did not do so at pre-bloom. Most fruit infections occur during the bloom to post-bloom period.
- If you are using a fungicide that is at high or medium risk of resistance development (e.g., sterol-inhibitors, strobilurins, Quintec, Endura), rotate to a fungicide with a different mode of action after each spray. Limit total applications of these fungicides to no more than 2 per season. See Table 2 of Fact Sheet 848 for more information on fungicide classes and resistance risks.

Post-bloom

- The post-bloom period may run from late bloom through fruit set (Eichhorn-Lorenz stages 25–27). Apply a first post-bloom spray 7–10 days after the bloom spray.
- Continue protection for **BR**, **Ph**, and **DM** (see pre-bloom notes). Apply a protectant for **PM** if you do not have active infections. Otherwise, see the bloom notes on eradicants.
- Continue protection for **Botrytis** if needed. If you applied Botrytis materials at pre-bloom and bloom, you may not need a 3rd application if the weather is dry and your varieties are loose-clustered.

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