At 3 to 4 weeks after bloom, the risks of black rot (BR) and Phomopsis fruit rot (Ph) are decreasing. Powdery mildew (PM) and downy mildew (DM) will be the main threats for the remainder of the season. While most Botrytis bunch rot infections occur around bloom and fruit set, bunch closing and veraison are also critical points for protection, especially on susceptible varieties. 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.

First Cover Spray (10–14 days after post-bloom spray)

- Apply the first cover spray near the end of the critical period for controlling fruit infection by BR, PM, and DM (immediate prebloom through 3 to 4 weeks after bloom). Ph is a diminishing threat in most vineyards because the fungus becomes inactive in hot weather.
- If the weather has been unusually wet and/or BR or Ph has been a problem in your vineyard, use captan in this spray. Captan also offers excellent protection against DM and late-season fruit rots. Otherwise, phosphites are inexpensive and effective for DM control.
- Scout for PM infections on pea-size fruit and 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 active PM but no protection against future-infections. Do not apply protectant fungicides other than sulfur to actively sporulating PM colonies.

Second Cover Spray (10–14 days after the 1st cover spray)

- Scout for PM and DM. If there are no active colonies, continue protectant sprays. While fruit are becoming resistant to infection, shoots, leaves, rachises remain susceptible until the end of the growing season.
  - For active PM colonies, see the notes under the 1st cover spray. For severe PM, apply a single “rescue” spray of stylet oil. According to NY research, one oil spray will not delay fruit ripening. Do not apply oil within 14 days of sulfur or captan to avoid vine injury.
  - For early DM (“oil spots” on leaves), apply a phosphite. For sporulating DM, apply Ridomil Gold or Aliette. Captan will protect healthy tissue from DM but will not eradicate infection.
- Lengthen spray intervals to 10–14 days, depending on the weather. Use a 10-day interval if you are ap-
Mid-Season Disease Management continued from page 1

Ply sulfur for PM or if 2 or more inches of rain have fallen since the last spray.

- 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.

Additional Cover Sprays (at 10–14-day intervals)

- Continue to scout for PM and DM. Adjust your spray program for the weather, diseases observed, varieties grown, and the expected harvest date.
  - For PM, maintain excellent fungicide protection until fruit reach 8° Brix (about 3 weeks before maturity) to avoid development of “diffuse infections” on fruit. These infections are difficult to see with the naked eye and can lead to fruit rots.
- At bunch closing and veraison, include a fungicide for Botrytis control, especially on bunch rot-prone varieties.
- Watch for rots, especially if there has been hail, bird damage, insect feeding, or PM on fruit. Protect healthy fruit with captan. Do not use captain or sulfur within 30 days of the expected harvest date, as they may impair wine quality. Pristine is an option for preharvest rot and Botrytis protection.

For more information, contact Dr. Joseph Fiola at jfiola@umd.edu.