

## Botrytis Bunch Rot: What We Learned from 2010

By Drs. Michelle Moyer and Gary Grove, WSU-Prosser

*Please note: Much of this information will be available, in an expanded format, in the Spring 2011 issue of the Viticulture and Enology Extension News, available in April 2011.*

Bunch Rot BBR is a disease of sporadic occurrence in Eastern Washington's normally arid climate. However, unseasonably moist weather during May-June and again in September 2010 resulted in a severe epidemic of BBR. Climates with higher annual rainfall, and cooler conditions during bloom and harvest, such as those in Western Washington, are prone to annual outbreaks of BBR.

BBR can infect fruit at two different stages: from bloom to bunch closure, and again from véraison to harvest. BBR is favored by cool, moist conditions. During the first stage, BBR infects clusters through cap scars, dying stamens, and survives on floral and other debris that gets stuck inside the cluster during closure. These infections remain latent (inactive) until véraison, where they can then express classic BBR symptoms. At the end of the season, BBR can infect ripening fruit through wounds, often caused by insect feeding, powdery mildew damage, or berry splitting as a result of compact cluster architecture.

If we fall into our general summer weather patterns, there is the possibility of over spraying for BBR as a reaction to what happened last year. To avoid this, WSU in collaboration with WAWGG, held a grape disease workshop in January to help develop a rational strategy for managing BBR in 2011. Drs. Doug Gubler (UC-Davis) and Wayne Wilcox (Cornell University) shared their extensive experiences with BBR management in California and New York, respectively. Washington growers recognize the bloom to pea-sized berry period as the keystone for managing powdery mildew (PM) on fruit, and typically make 2-3 PM fungicide applications during this period to control it. Like PM management, the bloom period is critical for BBR control. The use of fungicides that offer control of both is recommended during bloom to control PM and to prevent the infection of flower parts by BBR (Table 1).

**Table 1-** Timing and type of fungicides for control of Botrytis Bunch Rot (BBR), or dual control of early BBR and Powdery Mildew cluster infections.

Timing	Compound	Powdery Mildew	Botrytis	Notes
<b>Bloom to Fruit Set</b>	Trifloxystrobin (Flint)	Yes	Yes	Apply at highest labeled rates for dual control.
	Pyracostrobin + boscalid (Pristine)	Yes	Yes	
	Difenconazole + cyprodinil (Inspire Super)	Yes	Yes	Read label for appropriate rates.
<b>Bunch Closure</b>	Trifloxystrobin (Flint)	Yes	Yes	Apply at highest labeled rates for dual control if wet weather conditions.
	Pyracostrobin + boscalid (Pristine)	Yes	Yes	
	Difenconazole + cyprodinil (Inspire Super)	Yes	Yes	Read label for appropriate rates.
<b>Véraison to Harvest</b>	Elevate (fenhexamid)	No	Yes	
	Scala (pyramethanil)	No	Yes	
	Rovral (iprodione)	No	Yes	
	Vanguard (cyprodinil)	No	Yes	

Drs. Gubler and Wilcox also recommended taking notes on prevailing and predicted weather conditions when devising BBR management strategies. If the 2011 season has above-average precipitation, additional dual-purpose fungicide applications should be considered at pre-bunch closure, while BBR specific compounds should be applied at véraison and preharvest (Table 1). It is imperative to realize that during years with “normal” precipitation (e.g. DRY between fruit set and harvest), véraison to preharvest fungicide applications for BBR may be unnecessary.

The role of leaf removal in managing both PM and BBR cannot be overemphasized. Both Drs. Gubler and Wilcox stressed the incorporation of this cultural practice into the overall vineyard disease management system. Dr. Gubler presented data indicating that leaf removal is equally or more important than fungicide applications for managing BBR. Leaf removal also improved management of PM. Much of this improved management of disease is through better spray penetration into the fruit zone, and increased air circulation and sunlight penetration, which reduces the environmental favorability for BBR and PM infection of fruit.

Last year also presented challenges in controlling PM, though not to the same extent as BBR. Targeting PM fungicides from bloom to set is the key to controlling disease development on fruit. What many people don't realize is that control of PM is also a key component of controlling BBR. Severe PM infections can result in fruit cracking, a clear entryway for BBR. However, light PM infections (referred to as “diffuse infections”), which can occur on fruit near the end of pea-size development, can also lead to substantial BBR. Diffuse infections create tiny damages in the grape berry skin, which are only visible with a hand lens or microscope, and are avenues for BBR infection.

More information on fungicide options for WA growers and how to develop a spray program are available in the 2011 WA State Grape Pest Management Guide, downloadable from [www.wine.wsu.edu/research-extension](http://www.wine.wsu.edu/research-extension).



*Powdery Mildew infection of clusters happens between bloom and fruit set. Severe cluster infection can result in cracked, dried berries.*



*Botrytis Bunch Rot can quickly spread within ripening clusters; grey fungal growth is readily visible. BBR is favored by cool, moist conditions during bloom and at véraison.*

*Use pesticides with care. Apply them only to plants, animals, or sites listed on the labels. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.*

*YOU ARE REQUIRED BY LAW TO FOLLOW THE LABEL. It is a legal document. Always read the label before using any pesticide. You, the grower, are responsible for safe pesticide use. Trade (brand) names are provided for your reference only. No discrimination is intended, and other pesticides with the same active ingredient may be suitable. No endorsement is implied.*