

Regional Pest Alert



Grapevine Red Blotch-associated Virus

Red leaf symptoms that differed from other known red leaf diseases affecting grape foliage were first noticed in vineyards planted with red wine grape cultivars in Napa County, California, in 2008. A virus now known as Grapevine red blotch-associated virus (GRBaV) was subsequently identified in grapevines exhibiting red blotch symptoms in 2011. It is now confirmed that red blotch disease is present in many major grape production regions of the United States and Canada.

Red Blotch Disease Symptoms

Leaf symptoms first appear approximately mid-summer; however, timing of symptom expression differs among grapevine cultivars and year. In red-fruited cultivars, common symptoms include red blotches originating from the leaf margin or within the leaf blade and primary and secondary veins that often turn red. In white fruit cultivars, symptoms appear as pale green to pale yellow patches. Symptoms usually start on basal leaves and progress up the shoot. In some cultivars, such as 'Chardonnay' and 'Zinfandel', marginal burning may occur similar to severe potassium deficiency. In some red-fruited cultivars such as 'Malbec' and 'Mourvèdre', the entire blade may turn red by harvest. Foliar symptoms are generally distinct from those of grapevine leafroll disease (GLD) early in the season, but leaf blade coloration may resemble those of GLD by late fall. At this time, red blotch disease is not known to kill grapevines.

Effect of Red Blotch Disease on Fruit

The effect of the virus infection on yield and fruit quality parameters appears to vary among cultivars. However, total soluble solids are consistently reduced in juice produced from fruit on diseased grapevines. The effect on pH and titratable acidity is also variable.

The Virus

GRBaV is a virus similar in genome organization to geminiviruses and is comprised of a single circular DNA molecule with ~3206 nucleotides. The virus can be detected using a laboratory PCR test. The virus appears to have become widely spread through infected



Grapevine red blotch symptoms on Cabernet franc in mid-September. Note the red veins on infected leaves (left).

material used for propagation. Commercial testing is available from several plant virus testing laboratories in the USA.

The clustered and/or leading edge patterns of disease incidence in vineyards resemble that of movement by insects not commonly found feeding on grapevines; however, no vector has been identified to date.

Guidelines for Management

Plant vines produced from GRBaV-tested scion and rootstock source material. In established vineyards, suspect grapevines showing red blotch symptoms should be flagged and tested by a commercial lab to confirm the presence of GRBaV. If positive, a decision on whether to rogue and replant infected vines needs to be made. The epidemiology of GRBaV is not currently known, therefore the decision to rogue will likely be based on the economic impacts of GRBaV on fruit quality. There is no “cure” for a virus infected vine at this time, and there are no chemicals known to control for GRBaV. Because a vector remains unconfirmed, there are no pesticide recommendations that would target a vector at this time.

For more information on Grapevine Red Blotch-associated Virus, please visit www.ncipmc.org/action/alerts/redblotch.php



Grapevine red blotch symptoms on dry farmed Zinfandel leaves at the end of August.



Chardonnay grapevines in early September (left), and again in mid-November (below)



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