

Vinews
Viticulture Information News, Week of 10 August 2015
Columbia, MO



Grapevine Vein Clearing Virus (GVCV)

The longer you grow grapes it seems the more pest problems you encounter. A few years ago GVCV was reported for three Midwestern states – Missouri, Illinois, and Indiana. Research has demonstrated that GVCV can be transmitted through grafting. It is believed that insects may also play a role in transmitting GVCV. Current research in Jim Schoelz's virology laboratory has been to investigate the role of mealybugs as potential vectors of GVCV. At this time, the role of mealybugs in transmitting GVCV is still unknown. When you think about potential insect vectors a number of insects are potential candidates. By determining which insect(s) are vectors of GVCV, there becomes the possibility of implementing management strategies to limit the spread of GVCV. The GVCV can also be spread via clonal propagation and so it is important to make sure that you are getting virus free plants when replacing or establishing a new vineyard.

Similar to other grape diseases, some grape cultivars are susceptible and others are resistant to GVCV. When GVCV infected buds were grafted onto GVCV-free cultivars the virus was transmitted to Vidal Blanc, Cayuga White, and Traminette, but not to Chambourcin. This suggests that Chambourcin is resistant to GVCV. In similar grafting experiments using Norton, GVCV was transferred to Norton, but Norton did not show severe disease symptomology, suggesting that Norton is tolerant to GVCV.

Learning to identify the symptoms of GVCV is the first step in management. The first symptoms that are readily noticed on vines infected with GVCV are the yellow translucent leaf veins (Figure 1).

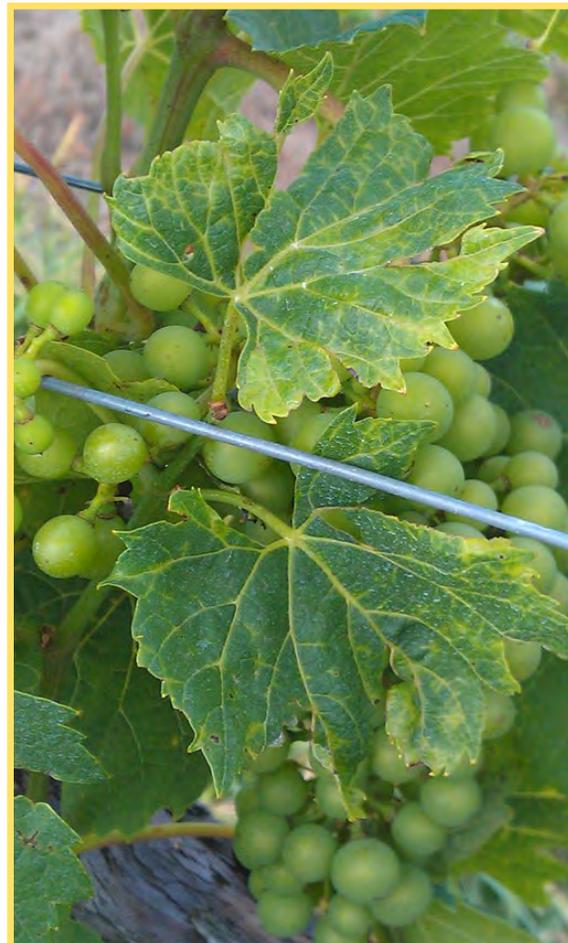


Figure 1. The translucent yellow major and minor leaf veins are classic symptoms caused by Grapevine Vein Clearing Virus. Photo submission: James Schoelz.

The translucent leaf veins are the most distinguishable symptoms of GVCV. Be aware that not every leaf will show these symptoms. A few leaves on a shoot may have the classic translucent leaf veins and the rest of the leaves on the shoot will be healthy/normal in appearance. In addition, other grape leaves infected with GVCV may appear crinkled and spotted with different colors from yellow to green (Figure 2). The GVCV infected grape vines will have smaller grape clusters with poor fruit set and aborted berries (Figure 3). Susceptible grape cultivars infected with GVCV will have reduced vigor compared to healthy uninfected grape vines. Over time GVCV infected susceptible grape cultivars can die from the disease.

If you have known GVCV susceptible grape cultivars it is important to scout for infected vines. There are no chemical management strategies to control GVCV infected vines. Vines infected with GVCV should be removed from the vineyard to reduce the potential of being spread to other vines by insect vectors. At this time it is unknown what insects are vectors of GVCV.

References

[Grapevine Vein Clearing and Vine Decline Disease.](#)

Guo, Q, S. Honesty, M. L. Xu, Y. Zang, J. Schoelz, and W. Qiu. 2014. Genetic diversity and tissue specificity of Grapevine vein clearing virus. *Phyto*. 104: 539-547.

Zhang, Yu, K. Singh, R. Kaur, and W. Qui. 2011. Association of a novel DNA virus with the grapevine vein-clearing and vine decline syndrome. *Phyto*. 101: 1081-1090.



Figure 2. Grape vines infected with Grapevine Vein Clearing Virus may also display leaves that are crinkled and spotted with colors ranging from yellow to green. Photo submitted by James Schoelz.



Grape vines infected with Grapevine Vein Clearing Virus will produce smaller clusters with poor fruit set and aborted berries. Photo submitted by James Schoelz.

Phenology from Gasconade County



Chambourcin on
August 10, 2015.
Gasconade County



Vignoles on August
10, 2015. Gascon-
ade County

Cumulative Growing Degree Days for the Seven Grape Growing Regions of Missouri from April 1 to August 10, 2015.

Region	Location by County	Growing Degree Days ¹		
		2015	2014	30 Year Average
Augusta	St. Charles	2567	2407	2455
Hermann	Gasconade	2446	2255	2336
Ozark Highland	Phelps	2662	2515	2515
Ozark Mountain	Lawrence	2632	2445	2482
Southeast	Ste. Genevieve	2678	2484	2494
Central	Boone	2444	2254	2400
Western	Ray	2399	2332	2360

¹Growing degree days at base 50 from April 1 to August 10, 2015. Data compiled from Useful and Useable at <https://mygeohub.org/groups/u2u/tools>. Click on link below to determine growing degree days in your area.

To determine the number of growing degree days accumulated in your area since April 1, click this link [Search for GDD at your location using this tool](#).

Please scout your vineyards on a regularly scheduled basis in an effort to manage problem pests. This report contains information on scouting reports from specific locations and may not reflect pest problems in your vineyard. If you would like more information on IPM in grapes, please contact Dean Volenberg at 573-882-0476 or volenbergd@missouri.edu