

**Plain Language Research Summary - AgriScience Grape & Wine Cluster - 2024-2025**

**Activity #5: Managing grapevine viruses and their arthropod vectors**

Principal Investigator(s): Dr. Jose Ramon Urbez-Torres (AAFC Summerland)

**1. What is the overall focus of this research activity?**

Grapevine virus diseases, in particular grapevine leafroll disease (GLD) and grapevine red blotch disease (GRBD) cause important economic losses to the Canadian grape and wine industry as a result of yield losses and reductions in fruit and wine quality. Considerable progress has been made in the past years with respect to identify the different viruses affecting vineyards in Canada, their insect vectors and the impact that these viruses have on plant health and fruit and wine quality under Canadian grape growing conditions. However, additional research is required to develop and implement methods to reduce and prevent the spread of these diseases and to control their insect vectors.

The research outlined in this project addresses methods to prevent and manage the natural spread of GLD, caused primarily by *Grapevine leafroll associated virus 3* (GLRaV-3) and GRBD, caused by *Grapevine red blotch virus* (GRBV) within and between vineyard blocks in British Columbia. The focus of this project includes i) evaluation of the effectiveness and economics of rogueing, a cultural practice focus on the removal and replacement of virus infected vines ii) investigation of novel techniques to prevent infections based on recently developed molecular techniques, iii) assessment of methods to manage insect vectors responsible for the transmission of GLRaV-3 and GRBV, and iv) determine the economic impact that both GLD and GRBD have on grapevine production in Canada.

**2. What are the main progress updates/milestones in terms of work that was done on this research activity this year?**

There was minimal progress on this activity again this year. Project approval continued to be delayed with final approval in February of 2025. As a result, no budget was allocated for the 2024-2025 fiscal year. AAFC provided limited risk management funds to Dr. Úrbez-Torres with the goal of continuing the day-to-day operations in the laboratory and conduct some research. An undergraduate student was hired for the summer term (May-August) who assisted to complete work in the Entomology program since the delay in hiring the new grape entomologist left the program with only a research technician. Accordingly, day-to-day operations and limited work in some of the activities was conducted. No updates and/or milestones to report at this moment.

**3. What is this research activity's intended impact on the Canadian grape and wine industry? What benefits could/will the growers, wineries, consumers, etc. see as a result of this research?**

The main goal of this research project is to develop and implement proper management and mitigation strategies for grapevine virus diseases and their insect vectors affecting the grape and wine industry in Canada. The goal of this research is to transfer these management techniques to industry in order to minimize the economic impact that grapevine viruses have on production.

**4. Do you have any communications materials, publications, or other content related to this research activity that you would like CGCN-RCCV to share?**

**Úrbez-Torres, J.R.**, and Lowery, D.T. 2023. Roguing, an effective technique to manage *Grapevine red blotch virus* in British Columbia, Canada. In: proceedings of the 20<sup>th</sup> Congress of the International Council for the Study of Viruses and Virus-like Diseases of the Grapevine. pp. 79-80. September 25-29, 2023. Thessaloniki, Greece. (Oral presentation, published proceedings).  
<https://icvg.org/proceedings.cfm>

Kahl, D.H.W., Lowery, D.T., Brauner, A.M., and \***Úrbez-Torres, J.R.** 2023. Optimized methods for detecting of *Grapevine red blotch virus* and a rapid and inexpensive approach to identifying its candidate insect vectors in British Columbia. In: proceedings of the 20<sup>th</sup> Congress of the International Council for the Study of Viruses and Virus-like Diseases of the Grapevine. pp. 144-145. September 25-29, 2023. Thessaloniki, Greece. (Poster presentation, published proceedings).  
<https://icvg.org/proceedings.cfm>

\***Úrbez-Torres, J.R.**, Boulé, J., Bowen, P., and Bogdanoff, C. 2023. Effects of *Grapevine leafroll-associated virus 3* on plant health and fruit quality in white cultivars in British Columbia, Canada. In: proceedings of the 20<sup>th</sup> Congress of the International Council for the Study of Viruses and Virus-like Diseases of the Grapevine. pp. 226-227. September 25-29, 2023. Thessaloniki, Greece. (Poster presentation, published proceedings)  
<https://icvg.org/proceedings.cfm>

Roberts, A., Hart, M., Usher, K., and **Úrbez-Torres, J.R.** 2025. The role of cluster thinning and viral load on the impacts of grapevine leafroll disease in Merlot and Cabernet Sauvignon in British Columbia, Canada. *American Journal of Enology and Viticulture* 76:0760004.  
<https://doi.org/10.5344/ajev.2024.24052>