

Plain Language Research Summary - AgriScience Grape & Wine Cluster 2023-2024

Activity 5: Managing grapevine viruses and their arthropod vectors

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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 no work conducted in this activity during the 2023-2024 fiscal year and consequently no progress updates/milestones to report. No work was conducted due to the significant delay on the approval of the Grape and Wine cluster under which this activity falls. The Minister announced the approval of the Grape and Wine Cluster late in the 2023 year and scientists were informed on the approval of their activities early in 2024 but funding was not made available to scientists in the 2023-2024 fiscal year.

In addition, the deep freeze British Columbia suffered in January 2024 has decimated the industry with 99 to 100% bud damage. There is still uncertainty on the current situation and plant survival in vineyard blocks. We expect to have more information about the impact of the winter kill around mid-summer when a better assessment on full vine

survival will be made. This has significantly impacted BC industry and consequently the research proposed in this activity. It is possible that many vineyard blocks will be pull out and replanted while many others will be re-trained. Efforts will be made at our end to find suitable vineyard blocks to complete the research proposed but is still early to know how this will finally impact the block selection and research.

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? If so, please provide a brief description here and either link it here or send the file as an attachment along with this summary.

As no work was conducted during 2023-2024 due to the delay in funding, no material is currently available related to this research activity.