Canadian Grapevine Certification Network
CGCN • RCCV
Réseau Canadien de Certification de la Vigne

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

Activity #6: Sustainable control of grapevine trunk diseases under a changing climate

Principal Investigator(s): Dr. José Ramón Úrbez-Torres (AAFC Summerland)

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

Grapevine trunk diseases (GTD) are responsible for significant economic losses to the grape and wine industry not only in Canada but worldwide and they are the main biotic factor reducing yields and limiting vineyard longevity. Though GTD research is still at the early stages in Canada, studies led by the plant pathology laboratory at the Summerland Research and Development Centre during the past years have significantly contributed to better understand the status and role that these diseases play on Canadian vineyards' health.

The current project aims to understand the role that stress factors caused as a result of climate change (water stress, heat domes, freezing events) factors play on GTDs development. In addition, this research project aims to develop and implement sustainable management strategies against these diseases in Canada based on the implementation of locally sourced biological control agents and cultural practices.

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

There has been very small 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 laboratory work for objective 1 as described in the report. Dr. Da Ros, collaborator in this activity, was also able to conduct some work under objective 2.

The winter freeze the Okanagan Valley experienced in January of 2024 resulted in devastating consequences to the industry but also to the research vineyards at the Summerland RDC. The significant damage caused to the SuRDC research vineyards resulted on its pull out in Fall of 2024. We are working to replant the vineyard blocks but it is not estimated to have plantings in the ground until Spring of 2026. With no research vineyards currently available at the SuRDC many objectives in this activity have been directly affected.

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 activity is to develop effective and sustainable control strategies against grapevine trunk diseases, including biological controls. In addition, this research intends to better understand the effect that abiotic and biotic stress factors have on disease development and vine mortality. Developing sustainable control activities and understanding how stress affect disease we aim to provide the industry with the proper and effective management tools to mitigate the effects that these devastating diseases have on grape 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?**

Four out of the five peer-reviewed research articles published to date on the subject are open access:

Pollard-Flamand, J., Boulé, J., Hart, M., and Úrbez-Torres, J.R. 2023. Biological control of Botryosphaeria dieback of grapevines in British Columbia, Canada. *American Journal of Enology and Viticulture* 74:0740034.
https://doi.org/10.5344/ajev.2023.23052
A figure from the manuscript was chosen as cover picture of the journal issue.
Manuscript awarded with the 2024 best Viticulture Paper Award by the American Society of Enology and Viticulture
https://www.asev.org/awards-lectures/awards/best-paper-awards/

Hrycan, J., Theilmann, J., Mahovlic, A., Boulé, J., and Úrbez-Torres, J.R. 2023. Health status of ready-to-plant grapevine nursery material in Canada regarding young vine decline fungi. *Plant Disease* 107:3708-3717.
https://doi.org/10.1094/PDIS-05-23-0900-SR

Úrbez-Torres, J.R., Boulé, J., Hrycan, J., and O'Gorman, D.T. 2023. Potential role of *Fusarium* spp. in grapevine decline. *Phytopathologia Mediterranea* 62(2):269-281.
https://doi.org/10.36253/phyto-14697

Hrycan, J., Bowen, P., Forge, T., and Hart, M., Úrbez-Torres, J.R. 2025. Impact of water stress on *Phaeomoniella chlamydospora* abundance and Petri disease symptom development in young grapevines. *OENO One* 59(1):8217.
https://doi.org/10.20870/oeno-one.2025.59.1.8317