

Long-Term Virus Strategy

CGCN-RCCV was incorporated in 2017 to create a clean plant network for domestically certified, virus-tested and pathogen free grapevines in Canada, as well as promote, coordinate and direct financing towards research on a national scale for the benefit of the Canadian grape and wine industry. Over the past 3 years, CGCN-RCCV has worked to develop two clean plant programs to both fill the short term need for virus tested materials, as well as the long term need for certified materials. In conjunction, research is ongoing into vectors, virus infection assessment and management of virus diseases.

Grapevine viruses pose a significant negative economic impact on the industry resulting in reduced yields, lower sugars, less colour, lower levels of aroma and flavour compounds and delayed ripening which translates into lower quality wines for the Canadian and international markets.

CGCN-RCCV would like to see a long-term virus strategy implemented in Canada by 2025. As this will likely be tough to facilitate at the federal level, provincial members (British Columbia Wine Grape Council, Grape Growers of Ontario, Conseil des Vins du Quebec and Grape Growers Association of Nova Scotia) would need to be involved, and lobby on behalf of CGCN-RCCV to their provincial governments.

In order to reduce and if possible, eliminate virus infections in vineyards across Canada the following conditions must be met:

1. As propagating material is the initial main source of viral pathogens, enough certified virus free grapevines of commercially acceptable varieties must be available to meet the routine replanting and expansion needs, as well as targeted pull out and replacement of infected blocks. As much as possible, these grapevines should be sourced from domestic production. The CGCN-RCCV will maintain a G1 repository, a list of approved nursery sources, and certification programs. Provincial legislation requiring that only certified virus free material from accepted sources would be allowed for replanting or establishing new vineyards could greatly contribute to the success of a virus mitigation strategy.
2. Well-timed, aggressive vector control that must be implemented by all growers in an area designated for virus load reduction and eventually eradication, will need to be implemented. Cleaning protocols for equipment that is moved between vineyards need to be implemented rigorously. Currently, the known vectors of Grapevine Leafroll associated Virus 1 and 3 can be effectively controlled in both conventional and organic vineyards. Participation in vector control programs will need to be mandatory to achieve substantial reduction of spread of infection. In areas where Pinot Gris Virus is present, *Colomerus vitis* (Erineum mite) might be capable of transmitting the virus and must therefore be controlled. In the case of Grapevine Red Blotch Virus, the modality of transmission and spread is still under investigation. While some species of tree hoppers may be involved in the

transmission, there is still a lack of certainty whether there may not be other factors contributing to the spread.

3. Once sufficient certified propagating material of desired varieties and clones is available, there will be a need for targeted, coordinated area wide roguing or whole block pull out and replacement. Initial area wide random sampling of 10% of the plantings will need to be performed to determine whether sampled blocks will qualify for targeted removal of infected plants, or whether whole block removal will be warranted. This portion of the virus elimination strategy will be the most controversial. The program will only be successful if all vineyard owners in a selected region cooperate and remove infected plants in the same dormant season. In the best-case scenario, all growers will see the need for removal and support the long-term benefit with little opposition. If some growers refuse to cooperate, they may have to be forced to do so by Provincial authority, as a single grower with infected plants can potentially cause the failure of the area wide removal program by maintaining sources for re-infection of new, clean plantings. In addition, Provincial authority may be needed to remove pathogen-containing abandoned vineyards or wild grapevines. Securing Provincial funding to help with the cost of testing, roguing, replanting and loss of income would help to make this program more acceptable to industry. The inevitable reduction in available raw product for the wine sector will cause hardship, although the long-term benefit of higher quality grapes and higher yields will outweigh the shorter-term pain of reduced income for participating growers and wineries.

Once all infected vines have been removed in a participating Province, it may be possible to re-list the Leafroll complex Viruses, Fanleaf Virus, (Red Blotch Virus), Arabis Mosaic Virus and others as quarantinable pests for that Province, which would reduce the chance of re-introduction through imports. Provinces could also require that all grapevines planted must be from accepted certified sources.