

Canadian Grapevine Certification Network



Réseau Canadien de Certification de la Vigne

CANADIAN GRAPEVINE CERTIFICATION NETWORK

1634 South Service Road
St. Catharines, Ontario, L2R 6P9
Tel: 905-688-0990 ext. 222
info@cgcn-rccv.ca
www.cgcn-rccv.ca

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TITLE: **CGCN-RCCV Code of Practice - Interim Verification Program**

The Canadian Grapevine Certification Network – Réseau Canadien de Certification de la Vigne (CGCN-RCCV) is a national not for profit corporation with the mandate to develop and implement Verification and Certification schemes for the sanitary status of propagating material used in the production of grapevines. This code of practice refers to the verification of the absence of a limited number of viruses of concern in material used for propagating grapevines.

Updates

The Program will be amended from time to time as new knowledge emerges, and the most recent version will be published on the CGCN-RCCV website www.cgcn-rccv.ca. Users should ensure that they are referring to the most recent version.

Disclaimer

While this Program's objective is to allow verification of plant material that has been produced under a system which aims to minimize the risk of Leafroll 1, Leafroll 3, Red Blotch and Pinot Gris Virus infection being present in grapevines, there remains the possibility that a proportion of plants may contain these viruses, or other unlisted viruses. CGCN-RCCV accepts no liability for claims regarding virus being present in any verified plants.

Definitions

Agent: an independent body or individual charged with performing specific tasks for CGCN-RCCV.

Audit trail: a set of records pertaining to propagating material collected, processed, sorted, planted and sold as finished plants. Audit records are to be kept for 10 years

Chain of Custody: the chronological documentation or paper trail from the plants verified by CGCN-RCC used for propagating material to the nursery or contractor to the end consumer.

Code of Practice: a document describing processes and procedures

Co-mingling: integration of plants produced under the CGCN-RCCV Interim Verification Program coming into contact with plants NOT produced under the program. This can include, but is not limited to, being handled in the same facility without cleaning between, and storing vines in the same location.

Designated Phrase: “(*scion material*) produced from material verified to be free from GLRaV 1 and 3, GRBV and GPGV by the Canadian Grapevine Certification Network - Réseau Canadian de Certification de la Vigne”: bundle label and line on invoice to customer indicating that plants have been produced from material verified to be free from GLRaV 1 and 3, GRBV and GPGV by the CGCN-RCCV

Grapevine(s): Vines, cuttings, grafts, scions, buds, rootstock and other plants and plant products of grapevine for vegetative propagation.

Nursery: Canadian facility that produces grapevine nursery stock.

Pest: Anything that is injurious or potentially injurious, whether directly or indirectly, to plants or to products or by-products of plants, and includes any plant prescribed as a pest.

Pest control manager: A qualified person employed by an approved facility and given overall responsibility and authority for implementing the requirements of a specified program.

Propagation Block(s): Discrete/identifiable areas or fields used to produce vines for direct sale to growers. This may include fields, areas defined by physical separations such as a road, lane or creek, areas used potted plants or a greenhouse or a distinct, physically separated area within a greenhouse.

Tested: Having been subjected to an official examination, other than visual, by an Approved Lab in Appendix 2, to determine the presence or absence of a pest.

Virus: Virus and virus-like pathogens including phytoplasmas, viroids, and graft-transmissible agents.

General

Propagation blocks will be sampled and tested by an Approved Lab or Agent in Appendix 2. The protocol for sampling the grapevines in Appendix 4, must be followed to ensure that leaf or cane samples (dependant on time of year) are taken from the best locations on each grapevine. Since labels and tags can be inadvertently lost or removed from plants, nursery samples will be collected and tracked (via GPS) by an Approved Lab or Agent for traceability.

All testing will be at the expense of the nursery facility (see Appendix 5). Cost-share funding is available for testing in 2019-2021, please contact the CGCN-RCCV for more information and availability.

Pre-screening

An initial random sample of ten percent of the grapevines in the prospective propagating block will be collected, mapped and tested using the Sample Collection Protocol in Appendix 4 for Leafroll 1 and 3 (GLRaV 1 and GLRaV 3), Red Blotch Virus (GRBV) and Pinot Gris Virus (GPGV) (see Appendix 3) by an Approved Lab. If the rate of positive tests is below approximately 15%, CGCN-RCCV and the nursery will proceed to full testing of the propagation block(s) as described below. Blocks testing more than 15% positive for virus infection are not economically viable for the purpose of this program.

Full Testing

Samples of grapevines (either dormant grapevines or late season leaf material, dependant on time of year) will be collected, mapped and tested in contiguous full or part blocks of grapevines as per the Sample Collection Protocol by an Approved Lab. Grapevines tested in the pre-screening process will not be re-sampled. Samples will be tested by an Approved Lab (Appendix 2) for the Viruses of Concern (Appendix 3). The grapevines associated with any positive samples (in both pre-screening, and full screening) will have to be either removed from the planting or retested individually to identify the infected plant(s) which will then have to be removed. Grapevines in the composite samples with positive readings will only be re-tested for the virus/viruses identified previously.

Once initial testing is completed and removal of positives is confirmed by the Approved Lab or Agent, the nursery or owner of the block is free to collect wood for the purpose of producing own rooted or grafted grapevines.

Ongoing Maintenance of Virus Free Status

In the second year and subsequent years random consolidated samples from ten percent of the planting will be collected in the late summer or fall, in addition to samples of remaining plants that are adjacent to plants in the same row that were removed in the previous year. All samples will be taken in accordance with the sample collection protocol in Appendix 4, by an approved lab in Appendix 2. Any grapevine(s) testing positive for one or more virus(es) of concern will have to be removed as described above.

If yearly random samples show a consistently higher positive count than the acceptable level of 0.1%, the Propagation block(s) must be sampled and tested at a higher level, in consultation with CGCN-RCCV and the Approved Lab or the block will have to be abandoned for the purpose of providing verified propagating material.

Frequent vector monitoring and properly timed control in both the propagating blocks and the nursery/greenhouse will be key to maintaining 'clean' status. The nursery will be required to document vineyard maintenance, as well as report immediately to CGCN-RCCV any visual changes indicating possible virus in the vineyard.

Record Keeping

The chain of custody needs to be documented and maintained in a manner to prevent accidental loss and be legible and retrievable for 10 years. CGCN-RCCV or one of its agents will have to be granted access in order to be able to verify the audit trail from the site of collection of material to the end consumer. Failure to produce records in a timely manner may jeopardize verification status. Records include, but are not limited to:

- Amount and location of wood collected (either: number of buds, meters of wood or number of cuttings) and resulting chain of custody to saleable plants
- Number of marketable plants, and whether green or dormant
- Identification and demonstration that plants under CGCN-RCCV program are properly identified and segregated from non-tested material
- Procedures to ensure that co-mingling of verified and non-verified material cannot occur
- Records of vector monitoring and control measures
- Record of location and removal procedure of infected grapevines or samples that test positive and associated vines,
- Records of sale or plant movement, invoices. The records must list all grapevines (grafted or own rooted) planted and sold under the CGCN-RCCV Interim Verification Program;

Descriptive Phrase

Nursery plants produced from material that has been tested and found free of the viruses of concern will be able to make the claim that they were *“produced from material verified to be free from GLRaV 1 and 3, GRBV and GPGV by the Canadian Grapevine Certification Network - Réseau Canadian de Certification de la Vigne” (or the CGCN-RCCV logo)* if both rootstock and scion wood have been verified by CGCN-RCCV or the plant is own rooted and propagated from CGCN-RCCV verified material.

If only the scion part of a grafted plant is from material verified by CGCN-RCCV the descriptive phrase *“the scion part of the plant was produced from material verified to be free from GLRaV 1 and 3, GRBV and GPGV by the Canadian Grapevine Certification Network - Réseau Canadian de Certification de la Vigne” (or the CGCN-RCCV logo and the words “Scion verified by”)* will be used. The nursery has the option to identify the provenance and certification status of the rootstock.

The descriptive phrase will be used on documentation accompanying shipment of plants and on invoices, clearly identifying only those grapevines, or part of the grapevines that have been produced from verified by CGCN-RCCV material.

Rootstock

Domestically produced rootstock under this program will be treated the same as scion wood above. In the case of domestic tested scion wood grafted onto imported rootstock:

- If the rootstock is from certified sources in California, Oregon or Washington State, the label can identify that the rootstock is certified by the respective State and the scion wood can claim *“the scion part of the plant was produced from material verified to be free from GLRaV 1 and 3, GRBV and GPGV by the Canadian Grapevine Certification Network - Réseau Canadien de Certification de la Vigne” (or the CGCN-RCCV logo and the words “Scion verified by”)*.
- If the rootstock is of French origin, it will have to be identified as such and the scion wood can claim *“the scion part of the plant was produced from material verified to be free from GLRaV 1 and 3, GRBV and GPGV by the Canadian Grapevine Certification Network - Réseau Canadien de Certification de la Vigne” (or the CGCN-RCCV logo and the words “Scion verified by”)*.

Third party involvement in the production or sale of CGCN-RCCV Verified Material

If a contractor, sub-contractor or any other third party (Contractor) is performing part or all of the wood collection, storage, grafting, callousing, planting, harvesting, grading, selling or any other activity involved in this process, this contractor or sub-contractor is subject to all the rules and conditions in this Code of Practice, including but not limited to record keeping, inspection of facility if requested by CGCN-RCCV and any activity that is part of the chain of custody.

Application to Participate

Nurseries must submit a completed application to the CGCN-RCCV on an annual basis (Appendix 1) by March 31st. Nurseries will be required to sign a contract provided by CGCN-RCCV to participate in this program.

Verification and Audits

One annual audit will be required, by an independent auditor appointed by the CGCN. An additional audit or verification may be required at any time, based on the program history of the nursery or if the quality of the final plants is directly at risk of being lowered by a non-conformance. Facility management representation during the audit is recommended.

As part of quality control, CGCN-RCCV will be surveying growers and wineries to identify any grower concerns related to material purchased, identified with the descriptive phrase. Any relevant issues discovered by CGCN-RCCV will be shared with the nursery.

Appendices

Appendix 1: Application to CGCN-RCCV Interim Verification Program

Name of facility: _____

Location of facility: _____

Mailing address of facility (if different from location):

Telephone number: _____ Fax number: _____

Email Address: _____

Name, contact phone and email of owner/person having the possession, care or control of the facility:

Name and contact phone and email of Pest Control Manager:

Intended Canadian provinces for sales of produced grapevines:

I, _____ the owner/person in possession, care, or control of the above-named nursery have read and understood all the conditions and obligations stated herein by which I may sell grapevine nursery stock, *Vitis* spp., in accordance with the CGCN-RCCV Interim Verification Program Code of Practice.

I agree to immediately suspend shipment of regulated commodities if notified by the CGCN-RCCV that the designated facility is in non-compliance with the CGCN-RCCV Interim Verification Program Code of Practice. I will immediately notify the CGCN-RCCV if viruses or any other regulated pests are found in the facility. I will allow the name and location of my facility to be included on a publicly accessible website list of nurseries approved under the CGCN-RCCV Interim Verification Program.

Dated _____, 20__ at _____,

Province of _____

Applicant's Signature _____

Facility and Preventative Control Plan evaluation completed and facility recommended for participation by:

Authorized CGCN-RCCV Official: _____ Date: _____

Facility registration number: _____

Application approved by: _____

Authorized CGCN-RCCV Official Date: _____

Appendix 2: Approved Labs

The CGCN-RCCV has approved the following labs for testing of grapevine material in the CGCN-RCCV Interim Verification Program. Lab choice for testing is based on location, and lab availability. Other labs will be considered as needed.

Approved labs:

CCOVI Virus Diagnostic Lab at Brock University
1812 Sir Isaac Brock Way
St. Catharines, Ontario, Canada
L2S 3A1
Contact: Sudarsana Poojari

Appendix 3: Viruses of Concern

The CGCN-RCCV Interim Verification Program has identified the viruses of concern for testing. This is subject to revision as necessary.

Grapevine Viruses of Concern:

Grapevine Leafroll Associated Virus 1

Grapevine Leafroll Associated Virus 3

Grapevine Red Blotch Virus

Grapevine Pinot Gris Virus

Appendix 4: Sample Collection Protocol

Instructions for the collection of grape leaves with petioles for virus testing. Vines will be individually tracked by GPS. All vines will be collected by an Approved Lab from Appendix 2 or Agent.

1) Label the sample collection bag

Label each sample collection bag (typically, medium size freezer Ziploc bag or any other bag with a closure) using a permanent marker with the following information

- a. Name of the Vineyard
- b. Name or Number of the Block
- c. Name of the Variety/Cultivar
- d. Number of the Row
- e. Number of the Panel or Post
- f. Number of the Vine

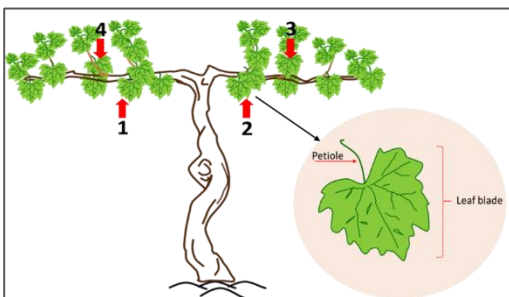
Example: AA/B10/CH/R1/P2/V3 (Vineyard name short form / Block number / Varietal name / Row number / Panel (post) number / Vine number)

2) Collect the Sample – either leaves with petioles or cane cuttings, dependent on season.

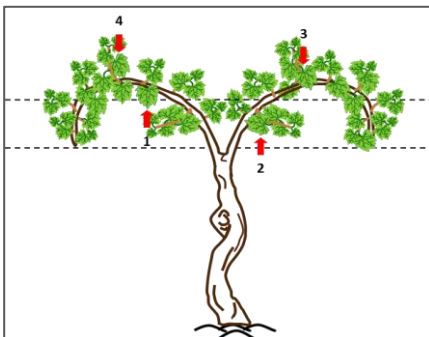
Leaves with Petioles (Late season sampling)

As shown in the cartoon, collect mature leaves with petioles attached from the bottom portion of the canopy. The petiole is the slender stem that connects the leaf blade to the shoot.

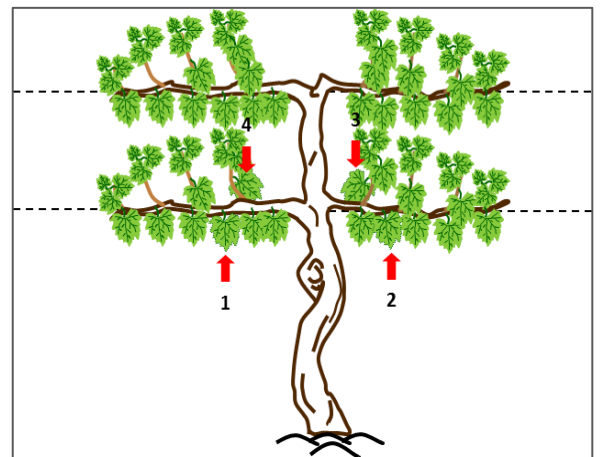
Included are examples of how to sample from common grapevine training systems within Ontario. **Leaf sample collection should always be from the bottom canopy covering both the front and back of the vine.**



Double-cordon sampling

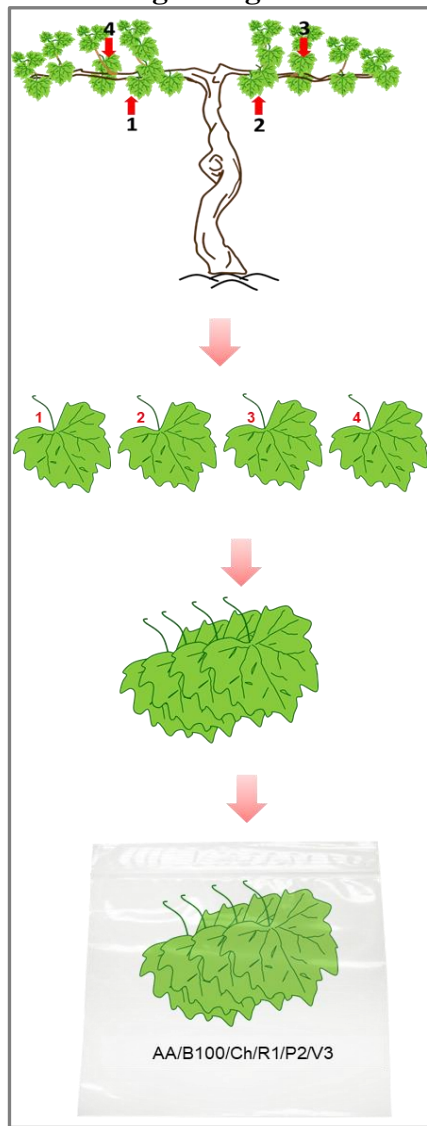


Pendlebogen sampling



Four-arm Kniffin sampling

For Testing a Single Vine



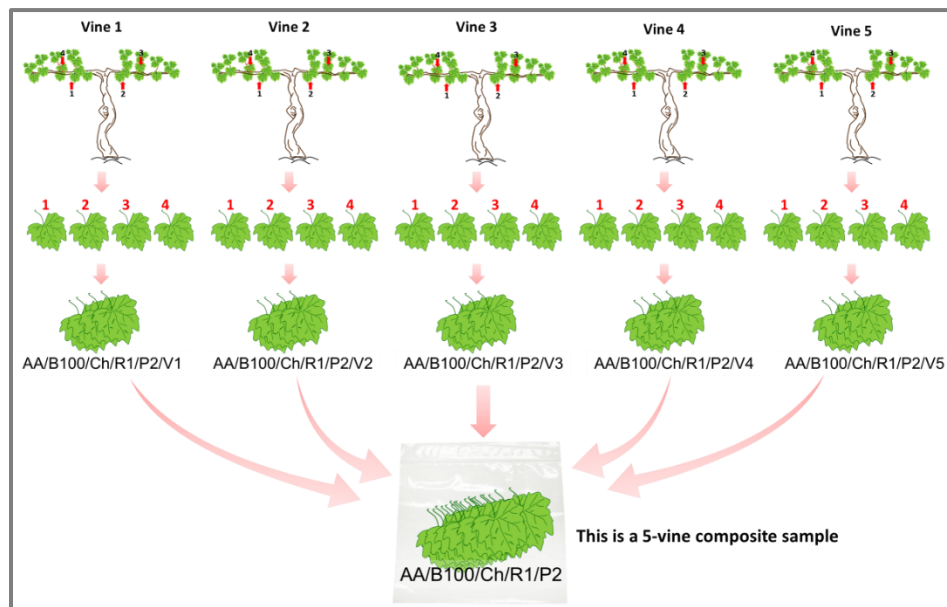
1. As shown in the cartoon, please collect **FOUR** mature leaves with petioles covering **FRONT** and **BACK** portion of the vine from all **FOUR** directions (a total of **4 leaves per vine**)
2. Place all **FOUR** mature leaves with petioles on top of each other and place them inside the pre-labeled sample collection bag
3. Seal the bag before sending the sample to the laboratory

PLEASE AVOID:

- a) Collecting when raining (for virus testing moisture free leaves are expected) and avoid adding additional moisture to samples
- b) Young leaves or leaves from the upper canopy
- c) Dead or senescing leaves
- d) Leaves covered with soil/dirt
- e) Leaves that are heavily damaged by insects feeding or damaged by animals, agriculture equipment, etc.
- f) Touching end of petiole where it is attached to the shoot

For Testing Composite of Five Vines

1. As shown in the cartoon, please collect **FOUR** mature leaves with petioles covering **FRONT** and **BACK** portion of the vine from all **FOUR** directions (a total of **4 leaves** with petioles **per vine**)
2. Collect accordingly for all 5 vines.
3. Place the **four leaves** of each vine on top of each other and stack all the **20 leaves** with petioles (four leaves with petioles from each vine) on top of each other and place them into a pre-labeled sample collection bag as shown in the cartoon below.
4. Seal sample bag before sending to the laboratory.



Note: In composite samples all 5 vines are tested as one combined sample

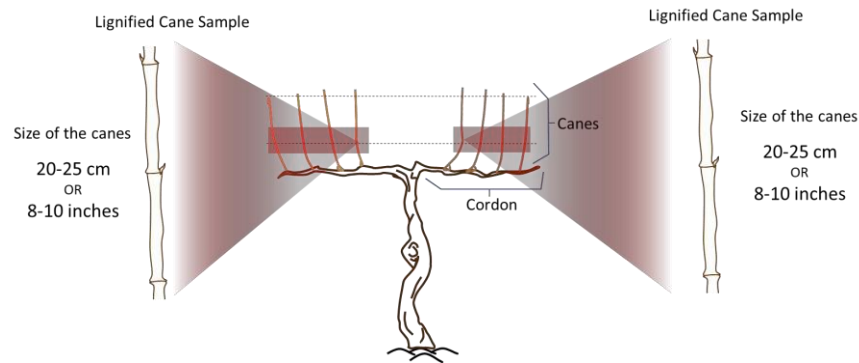
When collecting leaf samples, PLEASE AVOID:

- a) Collecting when raining (for virus testing moisture free leaves are expected) and avoid adding additional moisture to samples
- b) Young leaves or leaves from the upper canopy
- c) Dead or senescing leaves
- d) Leaves covered with soil/dirt
- e) Leaves that are heavily damaged by insects feeding or damaged by animals, agriculture equipment, etc.
- f) Touching end of petiole where it is attached to the shoot

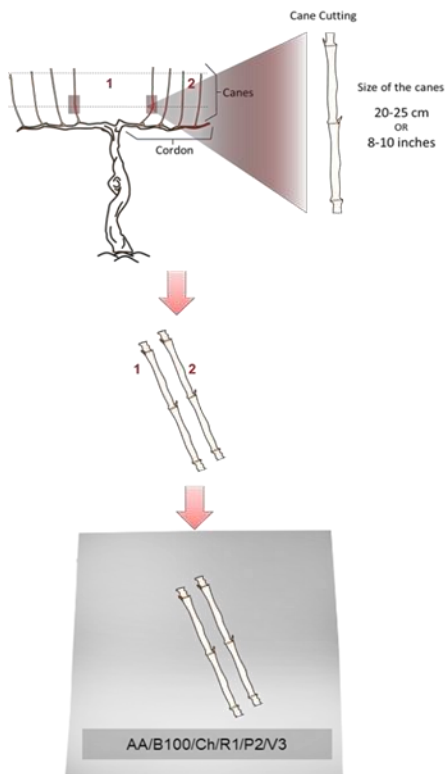
2) Collect the Sample

Cane Cuttings (dormant season sampling)

As shown in the cartoon, collect mature canes from bottom portion of the canopy. The cane cuttings should be 8-10 inches long.

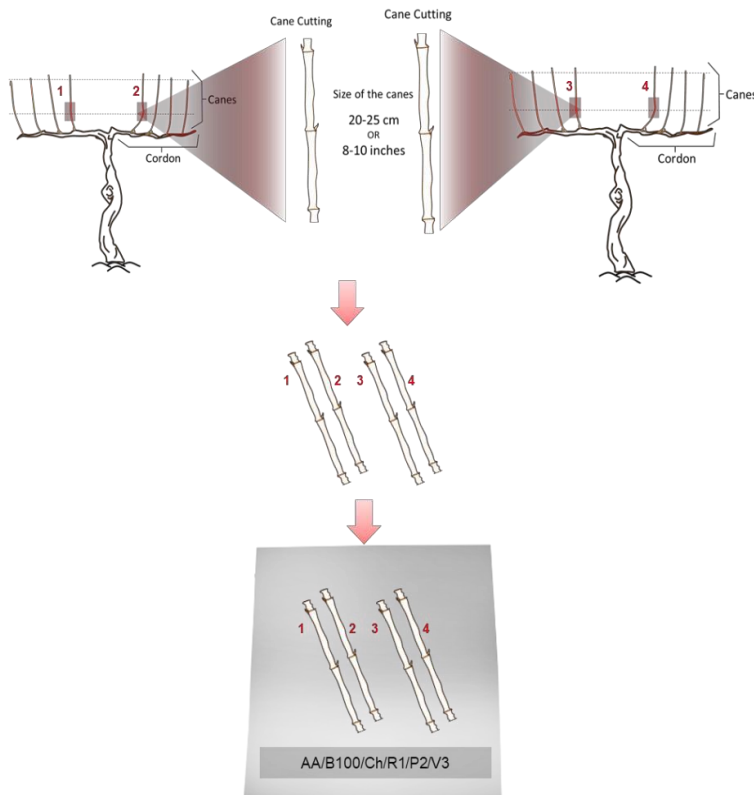


Sampling from a single vine



1. As shown in the cartoon, please collect TWO mature cane cuttings one from each side of the cordon/arm
2. Select any cane that is mature from each side of the cordon
3. Place both cane cuttings inside the pre-labelled sample collection bag
4. Seal the bag before sending the sample to the laboratory

Sampling from a composite of two vines



1. As shown in the cartoon from the first vine, please collect TWO mature cane cuttings one from each side of the cordon/arm
2. Collect the cane cuttings from the second vine accordingly
3. Place cane cuttings from both vines (total of FOUR cuttings) inside the pre-labelled sample collection bag
4. Seal the bag before sending the sample to the laboratory

When collecting cane samples, PLEASE AVOID:

- g) Collecting when raining (for virus testing moisture free canes are expected) and avoid adding additional moisture to samples
- h) Young cuttings or cuttings from the upper canopy
- i) Canes from dead vines
- j) Canes covered with soil/dirt
- k) Canes that are heavily damaged by insects feeding or by agriculture equipment, etc.
- l) Canes heavily covered with fungal growth
- m) Touching the ends of freshly cut canes

C. Sample Transport

Please submit the samples to the laboratory on the day of collection. If sending by mail, please store leaf samples in a Styrofoam cooler box with ice packs, seal them before shipping overnight. Transport the samples, in a sampling box (typically, a cooler with ice packs), to the laboratory as soon as possible with sample submittal form and/or store short-term (up to 48 hours) at 4°C. If storing make sure sample bags also contain sampling date.

Samples along with submission form should be addressed to the following address.

Shipping Label

Cool Climate Oenology and Viticulture Institute
Grapevine Virology Lab IH210
Brock University
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1 Canada
Phone: +1 905-688-5550
Web: www.brocku.ca/ccovi/

Appendix 5: Cost of sampling and testing

Prices quoted are subject to change. Cost-share funding is available for testing in 2019-2021, please contact the CGCN-RCCV for more information and availability.

Cost for testing differs between dormant and leaf samples:

- Dormant cane samples are composites from two vines; every test for the four viruses is \$66.00 for the testing and \$14.00 for collecting the sample and mapping it with GPS. In addition, actual travel costs will be added, determined by vineyard location
- Leaf samples collected between August and first fall frost are composites of five vines; every test for the four viruses is \$62.00 for the testing and \$14.00 for collecting and GPS mapping. In addition, actual travel costs will be added, determined by vineyard location plus travel.
- Sampling and testing costs for the initial pre-screening and the yearly follow up random sampling will be the same per sample as for the full block testing above.
- Sampling and testing individual vines in consolidated samples with positive results will vary, as only the virus(es) found previously will be tested for.
- CGCN-RCCV will collect \$0.25 per plant produced from the verified material for covering the cost of managing and auditing the program.

Cost for Travel to collect samples from vineyard:

The following travel costs are subject to change periodically. Travellers are obliged to keep all invoices and proofs of payment.

- Per diems will contribute to covering the costs for daily accommodation, meals, local or in city transportation (buses, taxis, vehicle rentals, etc.), ground transportation (including parking, to and from the public carrier terminal), entry documents (including passports and visas), insurance (all types), vaccinations and incidentals (personal phone calls, laundry, gratuities, currency exchange fees, etc.) for individual travel.
- Travellers may: a. claim the established per diem; or b. claim an amount less than the established per diem (based on actual costs). Whether using option (a) or option (b), individual invoices and proof of payment for these incurred travel costs will not be required for claims, however, proof of travel is required (for example, boarding pass, hotel invoice, trip report) and travellers are obliged to keep all invoices and proof of payment. If using option (a) per diems are payable for every day on travel status as follows:
 - i. day trip within Canada with no overnight stay: \$70 CAD/day
 - ii. day trip outside Canada with no overnight stay: \$100 CAD/day
 - iii. travel within Canada with an overnight stay: \$300 CAD/day
 - iv. travel outside Canada with an overnight stay: \$425 CAD/day
 - **Travel status:** occurs where a person, conducting CGCN-RCCV Interim Verification Program related activities, is more than 50kms (one way) from their assigned workplace using the most direct, safe and practical route, usually for more than one day.
- The traveller may claim cost for air, rail and ground transportation (to an out-of-city destination) for individual travel as follows:
 - a. air: economy rate (not Business or First Class) fare

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- b. private vehicle: kilometric rates (at a rate of up to \$0.55 per km) as well as costs for parking at the destination
- c. rental vehicle: the cost for a mid-size vehicle (or the cost of a larger vehicle, based upon factors such as, but not limited to, safety, the needs of the traveler, and the bulk or weight of goods transported), gas, and parking at the destination.