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ORGANIZACION NORTEAMERICANA DE PROTECCION A LAS PLANTAS
CANADA UNITED STATES MEXICO

NAPPO Regional Standards for Phytosanitary Measures (RSPM)

RSPM No. 15
Guidelines for the Importation of Grapevines into a NAPPO Member Country

Part 1: Viruses and Virus-like Pests, Viroids, Phytoplasmas and Bacteria

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Review

NAPPO Regional Standards for Phytosanitary Measures are subject to periodic review and amendment. The next review date for this NAPPO standard is 2007. A review of any NAPPO Standard may be initiated at any time upon the request of a NAPPO member country.

Endorsement

This Standard was approved by the North American Plant Protection Organization (NAPPO) Executive Committee on October 20, 2002.

Approved by:

_____	_____
Robert Carberry	Richard Dunkle
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Effective Date

This standard will become effective on the date of endorsement.

Amendment Record

Amendments to this Standard will be dated and filed with the NAPPO Secretariat. The most recent version will be posted on the NAPPO website at: www.nappo.org/stds_e.htm

Distribution

This standard is distributed by the Secretariat of the NAPPO within NAPPO, including Sustaining Associate Members and Industry Advisory Groups, to the FAO IPPC Secretariat, to the ICGPP, and to the Administrative Heads of the Regional Plant Protection Organizations (RPPOs).

Introduction

Scope

This Standard describes the requirements for the importation of grapevines by the member countries, and the movement of grapevines among the member countries of NAPPO. Grapevine pests specifically dealt with in this Standard are viruses and virus-like agents, viroids, phytoplasmas, and bacteria. The scope of this Standard does not include non-pest related items such as varietal trueness-to-type, and quality grades and standards.

References

Determination of pest status in an area, 1998. ISPM Pub. No. 8, FAO, Rome.
Export certification system, 1997. ISPM Pub. No. 7, FAO, Rome.
Glossary of phytosanitary terms, 2002. ISPM Pub. No. 5, FAO, Rome.
Glossary of phytosanitary terms, 2002. NAPPO.
Guidelines for pest risk analysis, 1996. ISPM Pub. No. 2, FAO, Rome.
Guidelines for phytosanitary certificates, 2001. ISPM Pub. 12, FAO, Rome.
Guidelines for surveillance, 1997. ISPM Pub. No. 6, FAO, Rome.
Pest risk analysis for quarantine pests, 2001. ISPM Pub. No. 11, FAO, Rome.
Requirements for the establishment of pest free areas, 1996. ISPM Pub. No. 4, FAO, Rome.
Requirements for the establishment of pest free places of production and pest free production sites, 1999. ISPM Pub. No. 10, FAO, Rome.
The accreditation of laboratories for phytosanitary testing, 1998. NAPPO.

Definitions, Abbreviations and Acronyms

Audit inspection	An examination to determine the reliability of prescribed quarantine procedures (NAPPO 2002)
Buffer zone	An area in which a specific pest does not occur or occurs at a low level and is officially controlled, that either encloses or is adjacent to an infested area, an infested place of production, a pest free area, a pest free place of production or a pest free production site, and in which phytosanitary measures are taken to prevent spread of the pest (FAO, 2002)
Containment	Application of phytosanitary measures in and around an infested area to prevent spread of a pest (FAO, 2002)
Grapevine(s)	Vines, cuttings, grafts, scions, buds, rootstock and other plants and plant products of grapevine for vegetative propagation. (NAPPO, 2002)

Import permit	Official document authorizing importation of a commodity in accordance with specified phytosanitary requirements (FAO, 2002)
Infestation (of a commodity)	Presence in a commodity of a living pest of the plant or plant product concerned. Infestation includes infection (FAO, 2002)
Inspection	Official visual examination of plants, plant products or other regulated articles to determine if pests are present and/or to determine compliance with phytosanitary regulations (FAO, 2002)
International Standard for Phytosanitary Measures	An international standard adopted by the Conference of FAO, the Interim Commission on phytosanitary measures or the Commission on phytosanitary measures, established under the IPPC (FAO, 2002)
International Plant Protection Convention	International Plant Protection Convention, as deposited with FAO in Rome in 1951 and as subsequently amended (FAO, 2002)
IPPC	International Plant Protection Convention, as deposited in 1951 with FAO in Rome and as subsequently amended (FAO, 2002)
ISPM	International Standard for Phytosanitary Measures (FAO, 2002)
NAPPO	North American Plant Protection Organization (NAPPO, 2002)
National Plant Protection Organization	Official service established by a government to discharge the functions specified by the IPPC (FAO, 2002)
NPPO	National Plant Protection Organization (FAO, 2002)
Official	Established, authorized, or performed by a National Plant Protection Organization (FAO, 2002)
Pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products (FAO, 2002)
Pest Risk Analysis	The process of evaluating biological or other scientific and economic evidence to determine whether a pest should be regulated and the strength of any phytosanitary measures to be taken against it (FAO, 2002)
Post-entry quarantine	Quarantine applied to a consignment after entry (FAO, 2002)
PRA	Pest Risk Analysis (FAO, 2002)
Prohibition	A phytosanitary regulation forbidding the importation or movement of specified pests or commodities (FAO, 2002)

Quality system	Organizational structure, procedures, processes and resources needed to implement quality management. (ISO 8402:1994)
Quarantine station	Official station for holding plants or plant products in quarantine (FAO, 2002)
Quarantine	Official confinement of regulated articles for observation and research or for further inspection, testing and/or treatment (FAO, 2002)
Quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (FAO, 2002)
Regional Plant Protection Organization	An intergovernmental organization with the functions laid down by Article IX of the IPPC (FAO, 2002)
Regulated pest	A quarantine pest or a regulated non-quarantine pest (NAPPO , 2002)
Regulated non-quarantine pest	A non-quarantine pest whose presence in plants for planting affects the intended use of those plants with an economically unacceptable impact and which is therefore regulated within the territory of the importing contracting party (FAO, 2002)
Release (into the environment)	Intentional liberation of an organism into the environment (see also "introduction" and "establishment") (FAO, 2002)
Restriction	A phytosanitary regulation allowing the importation or movement of specified commodities subject to specific requirements (FAO, 2002)
RPPO	Regional Plant Protection Organization (FAO, 2002)
Test	Official examination, other than visual, to determine if pests are present or to identify pests (FAO, 2002)

Outline of Requirements

This standard outlines a program for managing viruses and virus-like agents, viroids, phytoplasmas and bacteria, achieved through a combination of prohibitions, restrictions and certification approaches. General Requirements of the Standard address the pest risk analysis and pest risk management measures. Specific Requirements identify the components of a grapevine certification program pertinent to the management of the regulated pests identified in Appendix 1.

General Requirements

The requirements of this Standard provide for equitable and orderly trade of grapevine propagative material while assuring that the probability of the introduction of regulated pests are reduced to an acceptable level. Consequently, the objectives of this Standard are to:

- Prevent the introduction of quarantine pests into NAPPO member countries.

- Manage regulated non-quarantine pests within NAPPO member countries.
- Facilitate equitable and orderly trade into and within the NAPPO region.

This Standard deals specifically with viruses and virus-like agents, viroids, phytoplasmas and bacterial pests of grapevines. Economic impacts of these pests on grapevines include delayed maturity, increased agricultural inputs, reduced growth, yield and fruit quality, graft incompatibility, and plant mortality. The same pests may also cause diseases in other crops with varying economic impacts.

1.1 Grapevine Pests

The presence or absence of viruses and virus-like agents, phytoplasmas, viroids and bacterial pests within NAPPO member countries have been identified in Appendix 1.

1.2 Pest Risk Analysis

All Pest Risk Analyses (PRAs) for grapevine pests should be performed in accordance with ISPM Pub. No. 2 *Guidelines for pest risk analysis* and ISPM Pub. No. 11 *Pest risk analysis for quarantine pests*. Application of phytosanitary measures should be based on the results of Pest Risk Analyses. The pests in Appendix 1 may be classified as regulated pests, depending on their presence in a country and the official control measures applied.

1.3 Pest Risk Management Measures

To prevent the introduction or spread of regulated pests, the importation and movement of grapevines can either be prohibited or restricted.

1.3.1 Prohibition

If no satisfactory measure to reduce risk to an acceptable level can be found, the final option may be to prohibit importation of the grapevine material. This should be viewed as a measure of last resort and should be considered in light of the anticipated compliance, especially in instances where the incentives for illegal import may be significant.

1.3.2 Restrictions

Following a pest risk analysis, there are five restriction options for grapevines that are imported directly into a NAPPO member country. Refer to section 2.2 **"**Criteria For The Post-entry Quarantine Of Non-approved Grapevines" for post-entry quarantine criteria where appropriate.

- **Grapevines for research purposes and subsequent destruction.** Grapevines are maintained under pre-approved conditions to prevent the introduction of regulated pests. Plant material may be tested for naturally transmissible pests before transfer to a quarantine site. Alternatively, the quarantine site should be structured and/or sufficiently isolated to prevent the spread of pests to neighbouring areas. Plant material should be destroyed at the completion of the research unless otherwise instructed by the NPPO.

- **Grapevines for quarantine and testing at NPPO-approved facilities and subsequent distribution.** This option applies to grapevines that do not come from an official certification program. Grapevines are imported for quarantine and testing in a NPPO-approved high containment quarantine facility within the importing NAPPO member country. Detected regulated pests should be eliminated before release.

- **Grapevines for quarantine at importers' premises and subsequent distribution.** This option applies to grapevines that do not come from an official certification program. Grapevines are planted under quarantine conditions on the importer's premises. The NPPO should test and/or visually examine, as appropriate, for regulated pests before release. This option may apply to the importation of grapevines from a certification program under evaluation.

- **Grapevines from an approved certification program.** Grapevines may be imported into a NAPPO member country if produced under an official grapevine certification program that has been evaluated using this Standard and approved by the importing NPPO. The NPPO may perform an audit inspection, including testing samples for the presence of regulated pests. The NPPO may require post-entry quarantine conditions.

- **Grapevines from a pest-free area, pest free place of production, or pest free production site.** Grapevines may be certified free from specific pests for entry into NAPPO member countries based on absence of these pests in the exporting site or area. The NPPO should perform audit inspections and may take samples to test for the presence of regulated pests. The NPPO may require post-entry quarantine conditions.

1.4 Documentation Requirements

A phytosanitary certificate should be issued by the exporting country, if required by the NPPO of the importing country. A permit to import should be obtained by the importer, if required by the importing NPPO.

Specific Requirements

2.1 Grapevine Certification Program

This Standard deals specifically with viruses and virus-like agents, viroids, phytoplasmas and bacterial pests of grapevines. Certification programs should be comprehensive and manage the economically significant pests listed in Appendix 1.

The grapevine certification program should be under the control of a certifying agency charged with the administration of program requirements. These requirements include terminology, testing, eligibility, the nomenclature of certification levels, horticultural management, isolation and sanitation requirements, inspection and re-testing, documentation, identification and labelling, quality assurance, non-compliance and remedial measures, and criteria

for post entry quarantine.

Certifying agencies approved by the NPPO should notify the NPPO of changes to the grapevine certification program or deviations from program requirements. This does not apply when the certifying agency is the NPPO.

2.1.1 Program Administration

The grapevine certification program should be administered by a NPPO approved certifying agency that employs administration, inspection and laboratory diagnostic personnel that have the education, training, and experience required to implement the grapevine certification program.

This program should specify the roles and responsibilities of the certifying agency, its personnel, laboratories involved in testing, non-agency organizations accredited to perform certification and testing activities, and participants in the program.

The certifying agency should ensure that diagnostic, certification and inspection staff employed by the agency or accredited non-agency organizations meet appropriate training, experience, educational and proficiency requirements. The agency should be prepared to supply, upon request, this information to its country's NPPO.

The exporting country's NPPO should notify the importing country`s NPPO of any changes to its certification program or testing procedures.

2.1.2 Terminology

The grapevine certification program should define all terminology specific to the grapevine certification program using sufficient detail to ensure clear understanding of the certification requirements. The terminology used by the NAPPO countries for similar purposes should be harmonized to the greatest extent possible.

2.1.3 Testing

Approved tests are listed in Appendix 1. Testing will be done by the certifying agency or laboratories approved by the NPPO. If private laboratories are used, they should be accredited by the NPPO.

Upon request, the exporting NPPO should provide to the importing NPPO the diagnostic tests results, test methodology and a list of pests regulated in the grapevine certification program in the exporting country.

Tests not listed in the Appendix or modifications to the approved tests should be approved by the NPPO of the importing country. The importing country may refuse the import of grapevines if a new test or modifications to an approved test have not been approved.

2.1.4 Eligibility

Potential program participants should file an application to the certifying gency. Eligibility is conferred by the certifying agency if the conditions of the grapevine certification program have been met.

2.1.5 Certification Levels

Certification levels are a categorical measure of the health status of plants based upon controlled propagation and the pest management applied. The grapevine certification program should clearly define certification levels, including nomenclature, propagation and pest management measures.

2.1.6 Horticultural Management

The grapevine certification program should define horticultural management requirements for hosts of pests or pest vectors within the field and buffer zones.

The grapevine certification program should require that all grapevines in a field be kept in good horticultural condition.

2.1.7 Isolation and Sanitation

The isolation requirements of the certification program should be based on the biology of the regulated pests and their vectors known to exist in the certification area.

The grapevine certification program should specify isolation and nematode suppression precautions required to adequately protect plants produced under the program from exposure to regulated nepoviruses via infected nematode vectors. The grapevine certification program should specify the measures by which the risks associated with any movement of soil potentially infested with nematode vectors are mitigated to acceptable levels.

The grapevine certification program should specify:

- isolation and suppression precautions required to adequately protect plants produced under the program from exposure to regulated pests via other vectors.
- acceptable crops and weed control measures within the isolation buffer zone required to reduce alternate pest hosts to acceptable levels.
- elapsed time since previous host crops and the crop rotation or chemical control requirements for a block to become eligible for use as a certified production site.

2.1.8 Inspection and testing

The grapevine certification program should specify the inspection requirements.

Field plantings should be inspected at least once per growing season at a time appropriate for the detection of disease symptoms. This field inspection should be conducted according to acceptable survey patterns.

The grapevine certification program should specify:

- the process to be undertaken upon suspicion of infestation by regulated pests.
- the process to be undertaken upon confirmation of infestation by regulated pests.
- notification and inspection requirements when selling or purchasing certified material.
- frequency of testing, test requirements, and the tests used for regulated pests for each certification level.
- requirements for increasing the size of existing plantings and establishing new production sites.
- inspection requirements including reviews of production site maps, variety labelling practices, new production sites and any deviations between inventory, sales and purchases.

2.1.9 Documentation and Identification

The certifying agency responsible for the grapevine certification program should sufficiently document inspection, certification and testing activities to ensure the eligibility and status of the production sites, participants and all certification levels of the grapevines. These documents should be available, upon request, to the NPPO for audit, traceback and other regulatory purposes.

The grapevine certification program should use an approved system to identify plants during growth and post harvest. The system should specify the appropriate level, the name and address of the participant, location of the field of production, the variety and rootstock.

Certified grapevine purchases and sales, previous cropping history for production sites, and production site maps should be retained by the participants for a period of time specified by the certifying agency.

2.1.10 Quality Systems

The NPPO should ensure that the certification program includes a quality system ensuring the program's validity and reliability. This system should be based on international standards for quality systems.

2.1.11 Non-compliance and Remedial Measures

The grapevine certification program should specify the consequences of non-compliance. In addition, the remedy measures should be specified to enable a suspended or de-certified participant, production area or variety to become eligible for re-certification or reinstatement.

2.2 Post-entry Quarantine of Non-approved Grapevines

Grapevines that cannot be imported directly into NAPPO member countries may be imported under post-entry quarantine criteria. The post-entry criteria should be based on the nature of the pests involved, their host range, their means of natural spread, and the likelihood of transmission by local vectors. Post-entry criteria should specify the roles and responsibilities of the NPPO of the importing

country, duly authorized officials and the importer.

Post-entry quarantine criteria should specify:

- Horticultural management requirements to promote plant growth and the detection of regulated pests.
- Isolation and suppression measures to control pest vectors and prevent the movement of regulated pests within and outside the pest-entry quarantine area.
- Plant and weed control measures within the post-entry quarantine area to reduce alternate pest and vector hosts to acceptable levels.
- Soil and plant treatment, vector survey and suppression, facility design and other criteria to be met before an area or facility becomes suitable for post-entry quarantine.
- The requirements for movement of horticultural equipment and personnel into and from the post-entry quarantine area.
- Containment, security and access restrictions to the grapevines.
- Disposition of pruning waste and all other articles capable of transmitting or harbouring regulated pests.
- Inspection and testing to determine the presence of regulated pests in the grapevines.
- Conditions under which the grapevines would be removed from post-entry quarantine.
- Final disposition of plants from the post-entry quarantine area.
- De-contamination and subsequent use restrictions of a post-entry quarantine area.

2.3 Bilateral Agreements

Technically justified modifications to these guidelines may be negotiated on a bilateral basis.

Appendix 1. Significant Viruses, Virus-like Agents, Phytoplasmas, Viroids and Bacterial Pests of Grapevines: Presence or Absence in NAPPO Member Countries and Acceptable Diagnostic Tests

PEST	PRESENCE / ABSENCE[1]			ACCEPTABLE DIAGNOSTIC TESTS[2]
	CAN	USA	MEX	
Grapevine nepoviruses:				
Arabis mosaic virus (ArMV)	P5	P5	Ab1	Enzyme-linked Immunosorbent Assay (ELISA), Immunosorbent Electron Microscopy (IEM), *Chenopodium quinoa* or *C. amaranticolor*, Reverse transcription polymerase chain reaction (RT-PCR)
Blueberry leaf mottle virus (BBLMV)	Ab1	P12	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Grapevine Bulgarian latent virus (GBLV)	Ab1	Ab1	Ab1	*C. quinoa* or *C. amaranticolor*
Grapevine chrome mosaic virus (GCMV)	Ab1	Ab1	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Grapevine fanleaf virus (GFLV)	P5	P5	P5	*C. quinoa* or *C. amaranticolor*, ELISA; RT-PCR, IEM, *V. rupestris* du Lot 'St. George'
Grapevine Tunisian ringspot virus (GTRV)	Ab1	Ab1	Ab1	*C. quinoa*, ELISA, IEM
Peach rosette mosaic virus (PRMV)	P5	P5	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Raspberry ringspot virus (RRV)	Ab1	Ab1	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Strawberry latent ringspot virus (SLRV)	Ab3	Ab3	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Tobacco ringspot virus (TRSV)	P5	P5	P12	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Tomato black ring virus (TBRV)	Ab2	Ab1	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, IEM
Tomato ringspot virus (ToRSV)	P5	P5	Ab1	*C. quinoa* or *C. amaranticolor*, ELISA, RT-PCR, IEM
Grapevine leafroll complex:				
Grapevine leafroll disease	P1	P1	P1	*Vitis vinifera* Pinot noir or *Vitis vinifera* Cabernet franc
Grapevine leafroll-associated virus 1 (GLRaV-1)	P5	P5	Ab1	ELISA, RT-PCR, Pinot noir or Cabernet franc

Grapevine leafroll-associated virus 2 (GLRaV-2)	P5	P5	Ab1	ELISA, RT-PCR, Pinot noir or Cabernet franc
Grapevine leafroll-associated virus 3 (GLRaV-3)	P5	P5	P5	ELISA, RT-PCR, Pinot noir or Cabernet franc
Grapevine leafroll-associated virus 4 (GLRaV-4)	Ab1	P5	Ab1	ELISA, RT-PCR, Pinot noir or Cabernet franc
Grapevine leafroll-associated virus 5 (GLRaV-5)	Ab1	Ab1	Ab1	ELISA, RT-PCR, Pinot noir or Cabernet franc
Grapevine leafroll-associated virus 6 (GLRaV-6)	Ab1	Ab1	Ab1	ELISA, Pinot noir or Cabernet franc
Grapevine leafroll-associated virus 7 (GLRaV-7)	Ab1	Ab1	Ab1	ELISA, Pinot noir or Cabernet franc
Grapevine rugose wood complex:				
Grapevine corky bark disease	Ab1	P5	P5	LN 33 (*Couderc 1613* X *Vitis berlandieri)*
Grapevine virus A (GVA)	Ab1	P5	Ab1	RT-PCR, ELISA
Grapevine virus B (GVB)	Ab1	P5	Ab1	RT-PCR, ELISA
Grapevine virus C (GVC)	Ab1	P5	Ab1	RT-PCR
Grapevine virus D (GVD)	Ab1	Ab1	Ab1	RT-PCR
Kober stem grooving disease (KSG)	Ab1	P5	Ab1	5 BB (*V. Riparia x V. berlandieri*)
LN33 stem grooving disease (LNSG)	Ab1	P5	P5	LN 33
Grapevine rupestris stem pitting disease (RSP)	P4	P4	P4	St. George
Grapevine rupestris stem pitting associated virus (RSPaV)	P4	P4	P4	St. George, RT-PCR
Grapevine phytoplasma diseases:				
Australian grapevine yellows	Ab1	Ab1	Ab1	Polymerase chain reaction (PCR)
Grapevine bois noir	Ab1	Ab1	Ab1	PCR
Grapevine flavescence dorée	Ab1	Ab1	Ab1	PCR
Grapevine vein yellows and leaf roll	Ab1	Ab1	Ab1	PCR
Grapevine vergelbungskrankheit	Ab1	Ab1	Ab1	PCR
Grapevine yellows in Europe - Elqui yellows	Ab1	Ab1	Ab1	PCR
Grapevine yellows outside Europe - leaf curl and berry shrivel	Ab1	Ab1	Ab1	PCR
Other grapevine viruses and diseases:				
Grapevine Ajinashika virus (GAV)	Ab1	Ab1	Ab1	ELISA, *Vitis vinifera* Koshu

Grapevine Algerian latent virus (GALV)	Ab1	Ab1	Ab1	ELISA, IEM
Grapevine berry inner necrosis disease	Ab1	Ab1	Ab1	*C. quinoa* or *C. amaranticolor*, *Vitis vinifera* Kyoho
Grapevine Bratislava mosaic disease	Ab1	Ab1	Ab1	*C. quinoa* or *C. amaranticolor*
Grapevine infectious necrosis	Ab1	Ab1	Ab1	visual inspection
Grapevine line pattern virus (GLPV)	Ab1	Ab1	Ab1	*C. quinoa*, *Cucumis sativus*
Tomato bushy stunt virus (TBSV)	P12	P12	P12	*C. quinoa* or *C. amaranticolor*, ELISA, RT-PCR
Xanthomonas ampelinus	Ab1	Ab1	Ab1	visual inspection
Xylella fastidiosa	P12	P5	P5	visual inspection, PCR, ELISA

[1] Presence or absence, unless otherwise noted, conform to the categories listed in the International Standard for Phytosanitary Measures # 8, entitled "*Determination of Pest Status in an Area*". For ease of reference alpha-numeric designations have been added here.

Ab1: Absent: no pest records
Ab2: Absent: pest eradicated
Ab3: Absent: pest no longer present
Ab4: Absent: pest records invalid
Ab5: Absent: pest records unreliable
Ab6: Absent: intercepted only
Ab7: Absence: confirmed by survey
Ab8: Absence: pest free area declared

P1:Present: in all parts of the area
P2:Present: only in some areas
P3:Present: except in specified pest free areas
P4:Present: in all parts of the area where host crop(s) are grown
P5:Present: only in some areas where host crop(s) are grown
P6:Present: only in protected cultivation
P7:Present: seasonally
P8 Present: but managed
P9 Present: subject to official control
P10: Present: under eradication
P11: Present: at low prevalence.
P12: Present: not associated with host crop (NAPPO category)

[2] Where possible, at least two tests, preferably including bioassay, are required to declare nuclear or initially tested mother plants free of a virus or disease for the production of subsequent generations in a grapevine certification program. An individual test may be suitable for monitoring and re-testing purposes within a certification program.