Final Assessment of Certification Trade Mark Application 720347 lodged by the Australian Vine Improvement Association

The Australian Competition and Consumer Commission (the ACCC), in accordance with the requirements of the Trade Marks Act 1995, has completed its Final Assessment of the above Certification Trade Mark (CTM) application.

The ACCC's Final Assessment is that it is satisfied that:

(a) the approved certifiers are competent to certify the goods in respect of which the CTM is to be registered;

(b) the rules governing the use of the CTM would not be to the detriment of the public; and

(c) the rules governing the use of the CTM are satisfactory having regard to the principles relating to restrictive trade practices set out in Part IV of the Trade Practices Act 1974 (the Act); the principles relating to unconscionable conduct set out in Part IVA of the Act; and the principles relating to unfair practices, product safety and product information set out in Part V of the Act.

Signed...........................................(Deputy Chair)

Date.............................................28/4/2005
USE OF THE AVIA CERTIFICATION TRADE MARK (CTM)

1. **The trade mark, CTM**
The AVIA certification trade mark comprises a device using the letters ‘AVIA’ on a circular ground surrounded by ‘AUSTRALIAN VINE IMPROVEMENT ASSOCIATION’ above the word ‘CERTIFIED’ written horizontally; a copy is attached as appendix 1. Original art work is held by and available from the AVIA office in Irymple, Victoria.

2. **Purpose**
The purpose of the CTM is to enable identification of superior (in terms of genotype, certainty of identity and disease-freedom status and propagation method) grapevine planting material, for the benefit of the Australian grape and wine industries.

3. **Where the CTM will be used**
The CTM will be used to identify
a) approved processes used in the production of grapevine planting material by certified operators who may use the CTM for promotion on corporate stationery, signage, advertising and information and
b) certified material produced by certified operators where the CTM may be affixed to labels and/or packaging of the material, such as cuttings, rootlings, graftlings and vines.
There are no limitations on the colour, size or material used for the CTM nor where it may be used other than those listed under ‘Conditions for the use of the CTM’.

4. **Who may use the CTM**
The CTM may be used by operators approved by and meeting the guidelines set by AVIA, specifically including
a) AVIA,
b) Vine Improvement Groups and
c) Plant nurseries.

5. **Extent of use**
Potential and accredited users of the CTM are recorded by AVIA which body maintains a register of accredited bodies; refer appendix 2. There is no restriction on the extent of use of the CTM nor the number of product certified with the CTM, other than the requirement to comply with the conditions of accreditation and the rules for the use of the CTM detailed herein. Refer appendix 3.
6. Promotion of the CTM
The significance and use of the CTM is promoted by AVIA through private correspondence, newsletters, advertising and technical information in industry journals and technical seminars. The CTM may be promoted by certified operators through advertising and commercial promotion. While such promotions are on an ad hoc basis, AVIA will promote the CTM annually in its technical report on the distribution of grapevine cuttings, usually in April in the Australian Grapegrower and Winemaker publication.

7. Conditions for the use of the CTM
The CTM may be used to:
a) Indicate the competence of a supplier, who is certified and approved by AVIA, and/or
b) Verify the certified status of specific planting material meeting AVIA specifications.
While a certified supplier may produce and sell separately both certified and uncertified planting material, the CTM must not be used to describe uncertified material nor to imply that uncertified material complies with specifications for certified material.

8. Certification of approved users
Suppliers of grapevine planting material shall be approved users of the CTM subject to:
1) Application to AVIA for approval and certification
2) Payment of registration and audit fees
3) Adoption and implementation of AVIA Standard Procedures for National Vine Accreditation and/or AVIA Guidelines for Nurseries.
4) Demonstration of compliance with these standards, verified by surveillance and audit by a competent auditing body engaged by AVIA. The auditing body will be JASANZ accredited and currently is Quality Assurance Services (QAS).
5) Execution of an
   a) ‘Agency licence for vine improvement groups’ and/or
   b) ‘Licence for AVIA accredited nurseries’
agreement with AVIA.

9. Registration of approved users
AVIA maintains a register on computer database and hard copy of certified bodies and licensees authorised to use the CTM, at its Irymple, Victoria office. A list of approved users will be published from time to time.

24/09/1998
10. **Monitoring the use of the CTM**

The proper use of the CTM will be monitored by:

a) audits conducted by the qualified auditing body (QAS),
b) general surveillance by AVIA, through its executive officer and its technical and commercial representation on the governing committee, and
c) Vine Improvement Groups with agency agreements with AVIA, via their technical officers.

AVIA officers or representatives may inspect relevant materials and records of Vine Improvement Groups and of Nurseries, under the licence agreements.

11. **Discipline for improper use**

Should AVIA become aware of improper use of the CTM, as indicated herein and as detailed in the appropriate licence agreement, AVIA may:

a) demand in writing that the offending body cease using the CTM,
b) terminate the authorisation of an offending certified user, by giving notice in writing of the decision and grounds for that decision,
c) initiate legal action to prevent use of the CTM by an unauthorised body and
d) advise any interested party, including the public, of such action taken.

12. **Dispute resolution and appeal process**

Any dispute on the use of the CTM shall be resolved by:

a) the licensee rectifying and remedying the breach, to the satisfaction of AVIA, within fourteen days of notice from AVIA of the breach, or, failing that by
b) consensus reached by negotiations between AVIA and the user of the CTM, or,
   failing that by
   c) recourse to legal action under the Commercial Arbitration Act (Victoria) or related act.

13. **Fee for the use of the CTM**

The fee for the use of the CTM is deemed to be included in fees for registration and certification; no specific fee solely for the use of the CTM applies.

Fees for registration and certification are set by AVIA on a cost recovery basis to finance such items as administration of the scheme, maintaining the register, printing (of information material, certificates, lists of certified users) and contract fees for auditing bodies. Refer appendix 4.

14. **Related documentation**

These rules on the use of the CTM will apply in conjunction with:

1. The articles of association of AVIA
2. AVIA: ‘National Vine Accreditation Scheme; part 1 - Source area maintenance and vine multiplication’
3. AVIA: ‘National Vine Accreditation Scheme; part 2 - Guidelines for Nurseries’.
4. AVIA: Agency licence for vine improvement groups’
5. AVIA: Licence for AVIA accredited nurseries’

24/09/1998
APPENDIXES

Appendix 1. THE LOGO FOR THE CTM

[Image of the AVIA logo]

Appendix 2. REGISTER AND IDENTITY OF USERS

a) Users of trade mark initially, September 1998:
   Australian Vine Improvement Association Inc.
   PO Box 5057
   MILDURA, VIC 3502

b) Potential users of the CTM:
   14 Vine improvement groups throughout Australia;
   7 State-wide groups
   7 Intra-state groups.
   It is anticipated that all groups will become users of the CTM eventually.

   120 (estimated) commercial nurseries, of the Australian total of around 150.
   To date 80 nurseries have formally registered expressions of interest and paid
   an initial registration fee.

c) The register of authorised users is included in the register of AVIA accredited
   bodies which includes the following information on each body:
   Name (business name where appropriate) of body
   Responsible representative of that body
   Address for correspondence
   Location of operations
   Scope of operations (Vine improvement group, Vinifera nursery, Grafted vine
   nursery etc).
   Application date
   Accreditation details (dates of audit, approval of treatment equipment etc)
   License agreements (for use of CTM) entered into
   Fees paid

24/09/1998
Appendix 3. EXTENT AND VALUE OF THE MARKET

Annual production of vine cuttings

- ex AVIA vinifera rootstock 9,000,000
- Total AVIA 22,000,000
- other sources est 13,000,000
- Estimated Aust total 35,000,000

Value, estimated Australian total

- 23,000,000 Vinifera cuttings @ $0.25 $5,750,000
- 9,000,000 Graftlings @ $3.50 $31,500,000
- 12,000,000 of above Vinifera grown on and sold as rootlings @ $1, value add $0.75 $9,000,000

Estimated total value, when sold to growers $46,250,000
(Several estimates and projections have been used so this $ value indicates the scale of the market only).

Appendix 4. FEES FOR USE OF CTM

While the level of fees has not been fixed at September 1998, the basis of fees and indicative rates are:

<table>
<thead>
<tr>
<th>Initial</th>
<th>Application fee</th>
<th>$50</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Registration</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td>Initial audit</td>
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</tr>
<tr>
<td>Annual</td>
<td>Registration</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td>Surveillance audit</td>
<td>$1000</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>$1500</td>
</tr>
</tbody>
</table>

The fee for use of the CTM is included in the registration fee.

24/09/1998
The National Vine Accreditation Scheme for Vine Improvement Groups

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Grape industries in Australia are aware of the advantages of using healthy, genetically superior and pathogen-tested vines for new plantings and vineyard redevelopment. The Vine Improvement Groups (now under AVIA coordination) were established to make superior planting material available to grape growers.

A National Vine Accreditation Scheme was developed to improve access to quality propagation material for the Australian grape industries. The scheme, coordinated and administered by AVIA, is designed to enable the supply of certified cuttings, rootlings and graftedings for vineyard establishment.

AVIA has developed a two-stage approach to quality assurance in the production of vine planting material through its publication of procedures manuals:

**Part One: The National Vine Accreditation Scheme for Vine Improvement Groups**

This describes mandatory procedures and controls for quality assurance activities supervised by AVIA and its' associated vine improvement groups (VIG) and affiliated agencies. The volume is a procedures manual, which forms part of the core documentation for quality assurance activities used by vine improvement societies, associations and groups in their production and management.

**Part Two: The National Vine Accreditation Scheme for Nurseries**

This volume provides procedures and controls for nurseries wishing to propagate vine planting material to standards set by AVIA. The volume is a guide and a standard for the types of procedures and controls that vine nurseries will be required to adopt, in order to label vine planting material produced by the nursery under the AVIA scheme as “AVIA Certified”.

**Policy - Australian Vine Improvement Association (AVIA)**

The Vine Improvement Groups have a policy of supplying the best grapevine propagation material available to the viticultural industry. AVIA and its affiliated regional Vine Improvement Committees/Societies and affiliated, accredited agencies (herein referred to as “Vine Improvement Groups” or VIG) are committed to supporting this policy by implementing procedures to be followed during the production of vine planting material. AVIA plans to fulfil this commitment by the adoption of the best technology available and by the application of sound quality assurance practices.
The National Vine Accreditation Scheme for Vine Improvement Groups

Disclaimer
The AVIA Vine Accreditation Scheme is strictly limited to the act of endorsing a body or material as meeting the conditions of the Scheme. Except to the extent expressly set out in the AVIA Vine Accreditation Scheme documents, AVIA does not test or review any body or plant material.

AVIA takes no responsibility for any conditions or circumstances beyond its control, or circumstances affecting plant materials, which have not been individually tested or approved by AVIA, other than required by law or as expressly set out in the AVIA Vine Accreditation Scheme.

No conditions or warranties, express or implied, of quality or fitness for any particular purpose or of merchantability is given by AVIA in respect of certified plant material other than as required by law, or as expressly set out in the conditions of the AVIA Vine Accreditation Scheme.

AVIA takes no responsibility for the conduct of any accredited body. Accreditation is limited strictly to the endorsement of bodies who agree to conduct their operations under the requirements of the AVIA Vine Accreditation Scheme.

Policy procedures are reviewed from time to time, and it is the responsibility of the individual to ensure that he/she has obtained the most current version.

Policy procedures have been prepared, having regard to the information available at the time of their preparation, and individuals should therefore have regard to any information, research or material, which may have been published or become available subsequently.

Whilst AVIA endeavours to ensure that policies are as current as possible at the time of their preparation, it takes no responsibility for matters arising from changed circumstances, or information or material which may have become available separately.

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Strategy
The commercial use of improved vines is achieved by:

Establishment of superior clones
Superior source vine material acquired through clonal selection, vine breeding or importation needs to be evaluated, characterised in terms of its disease status, identified and maintained in established germplasm collections. To date, these activities have been the responsibility of the Commonwealth DPIE/ AQIS, State Departments of Agriculture or Primary Industry, Vine Improvement Groups, CSIRO
The National Vine Accreditation Scheme for Vine Improvement Groups

and private companies. AVIA sets standards for selection of clones, establishment of germplasm sources, testing and characterising clones and for verifying that germplasm propagules comply with these standards.

Multiplication of material
Propagules from germplasm collections are used to establish source areas whose integrity must be maintained. Cuttings from these source areas are collected, treated and distributed using controlled procedures managed by the Vine Improvement Groups that make up AVIA. Operating procedures are standardised for all regional Vine Improvement Groups. Where local conditions provide compelling reasons for variations, modified procedures are authorised, documented and implemented.

Propagation
Cuttings are grown or are grafted onto rootstocks by plant nurseries for sale to grapegrowers.
Propagation of planting material is under the control of plant nurseries. For planting material to be certified;

1. The source material must be Certified and
2. The nursery must be Accredited by AVIA.
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This sequence of events is illustrated in the chart below.

Vine Material Flow Chart

- **Establishment of superior clones**
  - Clonal Selection
  - Vine Breeding
  - Importation
    - Trial, characterise, determine sanitary status, identify
    - Germplasm
      - Vine Planting
  - Source Propagules

- **Multiplication of Material**
  - Pre Multiplication Establishment
    - Source Propagules
  - Source Area
    - Vineyard Class A
      - Harvest, grade/select, treat, package, distribute

- **Propagation**
  - Certified Cuttings
    - Rootstock
      - Strike
    - Store
      - Graft
    - Grafted rootling
      - Own roots rootling
    - Commercial Vineyard
  - Scion
    - Strike


AVIA Certified Logo
The application of sound procedures and verification mechanisms will ensure the production of high quality planting material, which then can be certified, as identified by the “AVIA Certified” logo:

![AVIA Certified Logo]

Certification
Certified grapevine planting material may be released as:

AVIA Certified cuttings
Cuttings derived from a registered germplasm source and supplied by an Accredited Vine Improvement Group.

AVIA Certified rooting/graftings
Rootlings or graftlings propagated from certified cuttings or tissue culture material by an accredited nursery complying with standards approved by AVIA.

Accreditation
Vine Improvement Groups and affiliated agencies and nurseries that comply with AVIA standards and employ procedures approved by AVIA, are accredited to supply AVIA Certified cuttings, rootlings and graftlings. Accreditation requires the adoption of this quality assurance program, adopting the procedures, controls and treatments described in this manual. Vine Improvement Groups must sign an Agency Licence Agreement with AVIA, for authorised use of the trademark AVIA Certified logo. (Refer Section 43 Appendix 5: Agency Licence for Vine Improvement Groups). The state Vine Improvement Groups as agents of AVIA, license the accredited nurseries for their use of the logo.

Composition of this procedures manual
The manual includes Sections, Procedures and Forms relating to:

Quality system
Management and administration - organisation and procedures to ensure satisfactory operation of the whole system.
The National Vine Accreditation Scheme for Vine Improvement Groups

Planting material available
A “Schedule of products” supplied by AVIA. Listed in the National Register of Grapevine Varieties and Clones.

Specifications
Of planting material, which must be met to achieve certification.

Process control procedures
These procedures include a Vine Material Flow Chart, which is a guide to subsequent Standard Operating Procedures (or how to do it) and to quality control checks and records.

Quality control procedures
Methods to verify that operations are completed and/or specifications met.

Records
Data, events, observations, measurements are written to provide documentary evidence of compliance with the procedures and specifications.

Additional reference information
Included in the List of Appendices, and in the External Documents and References.

Using the manual
The manual is written to be used by AVIA and regional Vine Improvement Groups. While there is continuity in the arrangement of sections (“what is produced” to “how it is produced” to “checking that it was produced correctly”), each document is written as a stand-alone document.
This approach,
a) enables the use of one or two relevant procedures in the workplace, without the confusing complexity of having the whole manual in such places, and
b) facilitates updating individual procedures, specifications etc. without the need to reprint the entire manual.

Procedures are dated in the upper right hand corner. This allows ready identification of the currently authorised document and avoids the continued use of obsolete documents.
Quality assurance

AVIA maintains control over operations within its charter through a quality assurance system. The essential procedures and standards are described in this "Standard Procedures Manual - Part 1, Source area maintenance and vine multiplication". AVIA's policy (Page 1), to supply the "best available planting material", implies an appreciation of quality and demands a strategy to produce quality. Quality is defined as "all those properties that satisfy the requirements and expectations of the customers". A quality assurance system enables the production of such quality products essentially through

Customer focus

Process control, including

(i) using suitable raw materials
(ii) employing sound operational methods
(iii) monitoring processes and inspecting products.

Customer focus is addressed by determining Customer Expectations and translating these into Product Specifications.

Processes are planned, contingencies considered, adequate facilities provided, and individual processes are controlled.

Raw material is controlled, for example, by accessing only reliable and superior germplasm material.

Production operations are defined by Standard Operating Procedures.

Successful, or otherwise, operation and the output of quality products are verified by monitoring these processes and by inspecting the planting material at various stages of development.

Activities and the results of these activities are recorded systematically which provides evidence of the quality of products, enables a review of operations and provides opportunities for improvement.

The quality assurance program is integrated and driven by some administrative or "quality system" procedures which ensure the effectiveness of subsequent quality documents.

Where the guidelines of the standard "AS/NZS ISO 9001 Quality systems - Model for quality assurance in design, development, production, installation and servicing" are relevant to this manual, these guidelines are followed. Not all elements of the standard are within the scope of this manual so not all are addressed here.

Some definitions of relevant terms are included in the Glossary. Some quality system procedures are described below.
The National Vine Accreditation Scheme for Vine Improvement Groups

Certification
and

Accreditation
are the responsibility of AVIA.

Quality Policy
is included in the Introduction

Document control
All procedures are numbered, dated and controlled. The Management review group, plus regional Vine Improvement Group managers review new and changed procedures when appropriate. This review and authorisation is recorded on a Document Authorisation Sheet, form number R9603. Distribution of controlled and numbered copies of the manuals is listed in Quality System. The manual holders are responsible for destroying obsolete procedures and for maintaining and using only current procedures as listed in the latest issue of the Contents. Master copies of all current procedures are held on computer file under the control of the AVIA Executive Officer.

Management review
The operation of the Vine Improvement Groups, the performance of the Quality System and the suitability of procedures and standards are reviewed regularly (at least annually) by the management group acting as the review committee. The management group comprises the Executive Officer of AVIA and the elected representatives of each State Vine Improvement Group. Minutes are kept of meetings and are filed.

Internal audit
The Management Review Committee appoints an audit sub-committee of three to audit the quality assurance operations of each accredited Vine Improvement Group. Audits are conducted annually, findings are recorded and, where nonconformity's are observed the auditors issue a request for corrective action.

Corrective - Preventive Action
The regional Vine Improvement Group is responsible for implementing appropriate action in response to an audit finding, to a recommendation from the Management Review Committee, to a customer response or to an internal assessment of actual or potential causes of nonconformity to procedures or specifications.

Training
The nature of suitable training is advised by AVIA. The regional Vine Improvement Group manager assesses the skills and training needs of his/ her staff and arranges suitable training. Training activities are documented.
The National Vine Accreditation Scheme for Vine Improvement Groups

Management Responsibility
The National Vine Accreditation Scheme is administered by the Executive Officer of AVIA who is the official “Quality Representative”. The individual state and regional Vine Improvement Groups, while constitutionally independent bodies, do, for the purpose of the Vine Accreditation Scheme, report to AVIA and agree to adhere to the procedures specified by AVIA.

Responsibility for quality system functions

Quality representative/ coordinator
AVIA Executive Officer

The Management structure of the Australian Vine Improvement Association
(Chart 1)

Management review group
AVIA Chairman
AVIA Vice Chairman
AVIA Executive Officer
Department of Agriculture/ Research representation
Elected representatives from Vine Improvement Groups

Document authorisation
AVIA Executive Committee

Technical reference committee
AVIA Executive Officer plus managers of all affiliated Vine Improvement Groups and specialist scientists with expertise in subject under review.

Chart 1. Management structure of the Australian Vine Improvement Association

Executive Officer - Chairman - Vice Chairman

Management Board
Representatives of each State Vine Improvement Group

New South Wales (2)
Northern Territory (1)
Queensland (1)
South Australia (2)
Tasmania (1)
Victoria (2)
Western Australia (1)
The relationship between the Vine Improvement Groups is shown in Chart 2.

Chart 2. Administrative structure of Vine Improvement Groups
Good business and the ISO standard demand that AVIA verify its ability to meet contracts to supply cuttings of the quality and in the quantities agreed. This section outlines matters considered and procedures followed to ensure capability to supply and profitability of the dealings.

**Documenting customer requirements**

- specifications
- variations
- customer responses

is the responsibility of regional group managers.

**Negotiating with other bodies**

Overseas plant breeders, suppliers
AQIS, CSIRO, Departments of Agriculture & Primary Industries
Private importers, Nurseries, Growers
Suppliers of materials, services
Plant Breeders’ Rights, royalties
Quarantine and plant health issues

is the responsibility of the AVIA Executive Officer.

**Contracts with growers of Registered Source Areas**

The Vine Improvement Group regional manager, negotiates written agreements, based on the AVIA standard format, with the owners of source areas where either:
The Vine Improvement Group has rights to cuttings and collects a levy, or
The grower has rights to cuttings and pays a levy.

**Determination and verification of supply capability**

The regional manager assesses the number of cuttings available and the ability to meet the demand, which is indicated by orders received.

**Pricing, Terms of Trade and Warranties**

AVIA in its role as a National body does not assume any responsibility for, or purport to exercise any control over the determination of pricing mechanisms for grades of cuttings, terms of trade for sale of cuttings or the nature and scope of any warranties offered by suppliers.
The National Vine Accreditation Scheme for Vine Improvement Groups

Insurance
Obligations are advised by AVIA and executed by the Regional Managers.

Review of Contracts
The Management Review Committee annually reviews the capability of the Vine Improvement Groups to supply, conditions of supply, contracts with grower suppliers, prices charged from, and warranties given to, customers and any other matters relevant to contractual arrangements.

Accreditation
*Vine Improvement Groups and Nurseries.*
Authority to supply “AVIA Certified” planting material is the responsibility of the AVIA committee. Qualified quality systems auditors will audit the quality system of individual bodies and companies.
Customer Expectations & Responses

Consistent with its explicit policy of supplying the best grapevine propagation material to the viticultural industry, AVIA has formal procedures to determine the viticultural industry concept of “best”. AVIA determines the expectations of its customers within the industry and reacts to responses from those customers.

AVIA, through its agencies, serves customers at three levels, namely:
Nurseries, with the direct supply of vine cuttings
Grape growers, directly and indirectly via nurseries.
Consumers (with table grapes) and processors (eg. wineries, dried fruit packers) indirectly.

Determining customer expectations
The management group of AVIA determines what customers require, expect and want from the sources listed below. Such expectations are documented, reviewed and interpreted as product specifications.

a) Nurseries
   - Representatives on AVIA committee and societies
   - Statistical data of past supplies and forward orders
b) Grapegrowers
   - Representatives on regional Vine Improvement Groups
   - Recommendations of Departments of Agriculture/Primary Industries
   - Liaison with grapegrower representative bodies
c) Consumers
   - Wine and Brandy Producers’ Association
   - Australian Dried Fruits Association
   - Tablegrape Growers’ Association

Customer responses
All responses from customers (including expressions of satisfaction, complaints, grievances and claims) are recorded and filed by the manager of the Vine Improvement Group.
The management committee takes action, either immediately by the manager or after review. Such action is recorded and filed.
Customer responses and the effects of remedial action taken are reviewed regularly by AVIA management committee.

Choosing the best clone
AVIA supplies the clone requested by the customer and does not give any guarantee of the quality characteristics or suitability of that particular clone.
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Grapevine Planting Material Available

This document lists the varieties and clones of cuttings, the classes of origin and the various grades of cuttings, which are available from AVIA associated Vine Improvement Groups. It is the Schedule of Products of AVIA.

Varieties and Clones available

The clones held in germplasm collections throughout Australia are listed in:
deLaine, A. & Nicholas, P. 2000. *National register of grapevine varieties and clones*. Australian Vine Improvement Association Inc. ISBN 0 957 76650 5. This register is updated regularly to ensure that it is current.

The variety and clones available are classified into *Winegrape varieties, Tablegrape varieties, Multipurpose and Drying Varieties* and *Rootstock Varieties*. The register lists the State(s) where the clone is maintained and can be sourced.

Material available in South Australia is listed in:
Nicholas and Cirami; *Grapevine germplasm collections* (PISA)
Nicholas *Registered source areas for planting material 1995* (PISA)

In Victoria, VAMVVIA publishes a photocopied list:
“Available grapevine clones”, (Irymple)

In NSW the varieties and clones available are listed in the “MIA Vine Improvement Society ORDER FORM” (Yenda).

Rootlings and graftlings

Rootlings/graftlings are produced by some Vine Improvement Groups and by commercial nurseries (some of which are operated by grape growing and/or winemaking companies). Detailed specifications and procedures for nursery operations are beyond the scope of this manual.

Quality Rating

The quality rating is indicated by the information given on the label attached, namely: *Variety and clone*, as indicated by the clone name or number
*Certification status* based on source area and sanitation status A, B or C.
*Grade of cutting* (as per list 1 to 2, above).

None of this data indicates the suitability of the clone to an area, its yield or its fruit quality potential. This information must be traced though the clonal identification.
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Clone information
The variety name and the clone identification enable access to information about the particular clone, such as:
- Yield potential
- Fruit quality
- Growth characteristics and vigour
- Pest and disease susceptibility
- Rootstock-scion compatibility

Sources of clonal information


Nicholas, P R ‘The effect of vine rootstock's on grape yield and quality in a warm high yielding irrigated area’ (PISA).


AVIA Policy on virus infected material
This Policy on virus infected material has been determined with regard to general circumstances applicable to the industry, and it is the responsibility of each individual to have express regard to the particular circumstances in each case, and the application of this Policy in each case. The Policy is reviewed regularly and purchasers should source the most current information available.

List One : -Virus types unacceptable for distribution
- Grapevine Leafroll associated Virus type 1 (GLRaV1)
- Grapevine Leafroll associated Virus type 2 (GLRaV2)
- Grapevine Leafroll associated Virus type 3 (GLRaV3)
- Grapevine Virus A (GVA)
- Grapevine Virus B (GVB)
- Grapevine Fan Leaf Virus (GFLV)
- Tomato Ringspot Virus (TomRSV)
- Arabis Mosaic Virus (ArMV)
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List Two:- Virus types tolerated in distribution material
Where no other source is available and if there is a strong demand, material with the following viruses will be distributed under specific conditions.

Rupestris Stem Pitting associated Virus 1 (RSPaV-1)
Rupestris Stem Pitting associated Virus 2 (RSPaV-2)
Grapevine Virus D (GVD)
Grapevine Leafroll associated Virus type 4 (GLRaV4)
Grapevine Fleck Virus A (GFkV-A)
Grapevine Fleck Virus B (GFkV-B)

*Detection of these viruses is determined by Biological Indexing results, Enzyme Linked Immunosorbent Assay (ELISA), Polymerase Chain Reaction (PCR) methodology, visual symptoms or a combination of these detection methods.
The specifications herein describe planting material that meets the customers' expectations, in objective and measurable terms. The quality of vine planting material is perceived in terms of:

- **Clone identification**
- **Variety, trueness to type**
- **Potential in terms of yield**
- **Fruit quality**
- **Growth habit.**
- **Pest and disease status** (especially with respect to viruses, virus-like organisms and bacteria and quarantined pests).
- **Vigour** (indicated by physical characteristics, vine health).

The quality of vine planting material is determined by the customer (grower, processor, and consumer). The responsibility of AVIA when supplying cuttings is limited to:

Ensuring material is true to type with respect to species, variety and clone.
Providing details of sanitary (pest and disease) status.

**Clone identity**
AVIA certified material is true to the identity stated (with respect to variety and clone), with documentary evidence to verify this fact.

**Trueness to type**
Cuttings and rootlings supplied are true to type, the certainty of which is indicated by the source area classification A, B or C. The Vine Improvement Group replaces any off-type material detected in the field.

**Pest and disease status**
Certified planting material originates from germplasm that is:
Derived from imports from an approved source and imported under AQIS control
or
Selected for local plantings for which the virus status is known
or
Bred from vines of known disease status.

and is:
Maintained in a dagger nematode and phylloxera free area,
Of known virus status
Free of quarantinable pests and diseases,
Physical condition
Physical dimensions, visual condition and apparent vine health reflect the likely vigour and viability of cuttings. Criteria of physical condition are included in the detailed specifications below.

Planting material for source areas
Propagules used for the establishment of Source Areas conform to the following;

Form
Propagules are supplied and transported as:
(a) Potted rootlings or
(b) Bare rooted rootlings or
(c) Cuttings

Origin
The propagules are cut from, or grown from cuttings from registered germplasm collections and:
Are maintained to prevent infection by virus and phytoplasma disease and by virus vectors (such as nematodes, mealy bug),
Protected from endemic diseases (downy mildew, oidium etc.),
Inspected and kept free of off-types, mutants etc.

This planting material is derived from known, documented sources. Imported clones have been subjected to import protocols of AQIS and Departments of Agriculture/Primary Industry. The clone is available legally under Plant Breeders’ Rights agreements.

Clonal details
The species, variety and clonal identification are known and documented.
Clones are described in terms of such characteristics as:
Potential yield, growth characteristics
Fruit quality and composition
Susceptibility to disease
Stock-scion compatibility
Ideally this information has been determined under standard conditions, compared with that of a known ‘benchmark’ clone and documented in standard format.
Pest and Disease status
Is documented:
- Viruses tested, including the methods used
- Bacteria (especially Agrobacterium) tested or treated
- Block hygiene status of germplasm source is known

Treatment
Propagules for establishing source area plantings are disinfested by treatment with hot water.

Specification of AVIA cuttings

Class of cuttings
Cuttings are classified on the certainty of their conformance to type thus, based on the degree of control of the source area.

Germplasm (White Label)
The nuclear vine collection (mother vines) of imported, Australian bred or clonally selected vines.

Pre-Multiplication (Green Label)
From germplasm collections.

Class A (Blue Label)
From Class A vineyards or source areas which are first generation plantings of certified pre-multiplication propagules.

Class B (Yellow Label)
From Class B vineyards or source areas which are second generation plantings, i.e. propagated from class A source areas.

Class C (Red Label)
From Class C vineyards, not controlled as for classes above.

Treatment
Cuttings are hydrated by immersion in water. Dormant cuttings are treated with hot water to provide added protection against Crown Gall, Nematodes and phytoplasma-like organisms.

Physical characteristics
All cuttings are selected from healthy, live wood with viable buds. Tendrils are to be removed during cutting.

Cuttings
Cuttings are supplied in any one of several grades, namely:
1. Scions
   a) Ungraded scion
   b) Bench grade scion
   c) Chip grade scion
   d) Thin grade scion
The National Vine Accreditation Scheme for Vine Improvement Groups

2. Rootstock
a) Bench grade rootstock
b) Field grade rootstock
c) Thin grade rootstock

Packaging
Cuttings normally are bundled in standard lots of 100, or a lesser specified number for special orders, tied securely with inert material (e.g. polypropylene) and hydrated, labelled clearly with waterproof labels and packed to minimise moisture loss. Bundled cuttings are held in cool store pending collection or distribution.

Specification

Vine rootlings and graftlings
While specifications and procedures for the propagation of rootlings and graftlings by nurseries is outside the scope of this manual, the following guidelines for propagation material are included for the sake of completion. Cuttings certified by AVIA retain that certification only when conditions outlined below are met.

Certified rootlings and graftlings
An “Accredited Nursery” using the essential treatments specified propagates a certified rootling from certified cuttings only, by AVIA below.

Identification
Scion rootlings are identified by variety, clone, and class of cutting used for propagation.
Rootstock rootlings are identified by species, variety, clone and class.
Graftlings are identified by both the scion (V. vinifera) and the rootstock as detailed above.
Scion/rootstock class status is the same as that of the cuttings used, except that if mixed classes are grafted the lesser class applies, i.e. Class A budwood onto Class B rootstock cutting gives a Class B graftling.

Requirements of Nurseries
In order to supply certified rootlings nurseries need to be accredited by AVIA to the standards set in the National Vine Accreditation Scheme for Nurseries.
Germplasm

A Germplasm is the varietal-clonal plantings of known and certified origin, maintained by technically competent staff, usually from Departments of Agriculture/Primary industry, CSIRO and/or Vine Improvement Groups.

Germplasm sources are established from cuttings or rootlings; bare rooted material must be hot water treated, potted rootlings must be grown in sterile potting media. Such plantings are housed in designated repositories, regularly inspected, properly maintained and protected from contamination by off-type vines, soil borne pests and diseases and, as far as possible from viruses.

Germplasm vines include:

- Mother vines or nuclear vines from the original import, vine breeding or local selection.
- Second generation vines propagated from the nuclear vines using appropriate procedures. The disease status of these vines is known and documented.
- Germplasm collections are held at Merbein (Vic), Irymple (Vic), Griffith (NSW), Nuriootpa (SA), Loxton (SA) Wokalup (WA), Alice Springs (NT), Stanthorpe (Qld).

Class A Vineyard/Source Area/Registered Multiplication Block

Vineyard planting established directly from germplasm material under the control of competent staff of the Departments of Agriculture and or the Vine Improvement Groups. Source Areas are established outside vine disease districts and are inspected and maintained.

Class B Vineyard/Source Area/Registered Multiplication Block

Vineyards of known origin established from either germplasm or Class A planting material for commercial purposes but without all conditions for Class A vineyards. Class B vineyards are established outside vine disease districts and are inspected as for Class A vineyards.

Class C Vineyards

Documentation of origin and disease status is incomplete, but varietal identity is known. Class C cuttings do not have a "certified" status.
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Procedure 1: Acquisition of New Material

Procedure 2: Ordering Germplasm Material

Procedure 3: Virus Testing Procedure for Dormant Vine Material

Procedure 4: Establishment and Maintenance of Germplasm

Procedure 5: Germplasm Health Inspection

Procedure 6: Selection and Harvesting of Cuttings from Germplasm

Procedure 7: Establishment and Maintenance of Pre-Multiplication Rows

Procedure 8: Pre-multiplication Row Health Inspections
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Procedure 9: Selection and Harvesting of Cuttings from Premultiplication Rows

Procedure 10: Establishment and Maintenance of Field Nursery Rootlings

Procedure 11: Establishment and Maintenance of Source Area Plantings

Procedure 12: Source Area Health Inspections

Procedure 13: Allocation of Cuttings

Procedure 14: Selection and Harvesting of Cuttings

Procedure 15: Grading, Packaging and Storing Cuttings

Procedure 16: Distribution of Cuttings
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Revision date: 21 February 2000

Section 1: Procedure 1: Acquisition of New Material

Purpose
To access new clones and to ensure the reliability and integrity of these clones in germplasm sources.

Responsibility
AVIA CEO ensures that the required procedures have been followed for all germplasm sources used.

Procedure
New material may be collected as dormant cuttings or as in vitro cultures only.

1. a) Clonal material is imported by AVIA
Secure permit to import (QP36) from AQIS.
Verify credentials of overseas source, including disease status of vine. Ascertain the clone number, allocated at source. Agreement reached on any PBR and licence arrangements. Import and deliver to Quarantine Station in Australia (eg NSW-Ag at Rydalmere, NSW). If the overseas source is not accredited to supply material free of quarantinable diseases (Appendix 1), hold in quarantine for one to four years, during which time the imported material is observed, tested and checked for non quarantinable pathogens (Appendix 2). After quarantine the material is released subject to approval from the Commonwealth pathologist. Establish a germplasm (mother vines) planting following relevant procedures.

1. b) Material is acquired as an imported clone from other importer
Secure documentary evidence that the above procedures have been followed and file.
Relevant details, including the variety, clone identification number, the accession number (where applicable), location of germplasm planting and comments are documented and included in the ‘National Register of Grapevine Varieties and Clones’.

2. Clone acquired from an Australian breeding program (eg CSIRO)
Negotiations are held between AVIA and the breeder for the multiplication and distribution of the variety, including cost recovery, collection of royalty and remittance to the breeder. All agreements reached are documented and the varietal details added to the National Register of Grapevine Varieties and Clones.

3. Clone acquired from an Australian selection (eg Dept. of Agriculture)
AVIA complies with, and ensures all employees and agents comply with the Commonwealth Quarantine conditions of entry of plant material and inter/intra state quarantine requirements.

1-1
Section 2: Procedure 2: Ordering Germplasm Material

Purpose
To access new germplasm (nuclear) material.

Responsibility
AVIA CEO, Staff of CSIRO, State Departments of Agriculture/Primary Industry, State or Regional Vine Improvement Groups.

Procedure
Order forms are printed in triplicate and mailed to the Vine Improvement Groups.
AVIA sets a due date by which time the order forms need to be returned accompanied with a deposit.
Orders are consolidated and forwarded to germplasm supplier.
AVIA forwards the Summary of Orders to the relevant source of germplasm material.

Documentation
Section 18 Form 1: Order Form for Germplasm Material
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000


Purpose
To establish the virus status of the vine.

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, State or Regional Vine Improvement Groups.

Procedure:
- Samples should be taken when vine is dormant
- Use pre-printed identification label (Figure 1)
- Place label around trellis wire in the "V" of the crown (Figure 2)
- Mark trunk with flagging tape 20 – 30 cm below crown (optional)
- Record the date, label number, row and vine number on the Virus Collection Sheet
- Cut sample canes (10 to 12 cm in length) from three sites across the vine canopy. The canes selected should be approximately 6mm diameter (pencil thickness).
- Enclose the samples in a self-sealing plastic bag and place sticky label with label number on sample bag.
- Double check the Virus Collection Sheet, vine location, and ensure the Sample ID, Vine label number and Sample Bag numbers correspond.
Despatch of Virus Samples

- Keep samples cool but not frozen until ready for despatch.
- E-mail a copy of the Virus Collection Sheet to AVIA for collation, and then file to enable correlation of the test results.
- Ensure all details on the Virus Collection Sheet are complete, then tear off and include the shaded portion only with the samples.
- Include the health inspectors contact details.
- *Check your state quarantine laws for appropriate movement protocol.
- Specify the type of tests required, ELISA, or PCR. Additional cooling such as ice packs are not necessary for dormant cane samples during transport.
- Post or courier the sample to the testing facility as soon as possible.
- It is important that the samples reach the testing facility in the freshest possible condition. Send the samples early in the week to ensure they are received before the weekend.
The National Vine Accreditation Scheme for Vine Improvement Groups

Interpretation of Virus Test Results
Copy of results will be faxed or e-mailed back to the client.

ELISA Test Result Sheet

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Collection Date</th>
<th>Receipt Date</th>
<th>OD Value 1</th>
<th>LRI Result</th>
<th>OD Value 3</th>
<th>LR3 Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 5 291</td>
<td>12/3/99</td>
<td>15/3/99</td>
<td>1.021</td>
<td>1</td>
<td>0.002</td>
<td>0</td>
</tr>
<tr>
<td>00 5 292</td>
<td>12/3/99</td>
<td>15/3/99</td>
<td>0.003</td>
<td>0</td>
<td>1.04</td>
<td>1</td>
</tr>
</tbody>
</table>

The OD values are included for more detailed evaluation of results when necessary.

PCR Test Result Sheet

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>LR1</th>
<th>LR2</th>
<th>LR3</th>
<th>LR4</th>
<th>RSP aV-1</th>
<th>RSP aV-2</th>
<th>GV A</th>
<th>GV B</th>
<th>GV D</th>
<th>GFkV-A</th>
<th>GFkV-B</th>
<th>GFL V</th>
<th>ArMV</th>
<th>Tom</th>
<th>RSV</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 5 291</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>00 5 292</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>00 5 293</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Where
0 = a negative result
1 = a positive result
2 = suspected positive and requires a re-test

Match sample ID numbers from the Result Sheet against the Virus Collection Sheet for the test details.

Documentation
Section 19 Form 2: Virus Sample Collection Sheet
Section 4 Procedure 4 Establishment And Maintenance of Germplasm

Purpose
To ensure the continuing supply of healthy, true to type, source material.

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, State or Regional Vine Improvement Groups.

Procedure

Site selection
- Outside Vine Disease Districts (ie areas free of Phylloxera and Dagger Nematode) where populations of soil pathogens are low including: virgin soil; area fallowed for six years (ie. no horticultural crops); and soil has been fumigated recently.
- Separated from non-germplasm vine plantings.

Planting
Cuttings and rootlings are hot water disinfested.
Three vines of each clone are established per panel. Clones must be separated adequately to minimise vector transmission.
Blocks and rows are identified on site (eg. with permanent block and row numbers on trellis posts).
Plantings are recorded on a standardised map of the source area.

General Maintenance
Adequate water and fertiliser are applied, weeds are controlled to a reasonable level to avoid competition and harbouring of pests.
Disease Control; a spray program to control powdery mildew, downy mildew and vine pests is implemented.
Protection from contamination; reasonable measures are taken to avoid contamination of the area by other clones of vines, by soil from contaminated outside vineyards and by virus vectors.
Vineyards are inspected within six months of planting and subsequently yearly health inspections apply.

Documentation
Section 20 Form 3: Field Plan
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 5 Procedure 5: Germplasm Health Inspection

Purpose
- To identify vines that are unsuitable for cutting selection, based on Health, Vigour, Trueness-to-type and Mechanical problems.
- To estimate cutting numbers
- To suggest follow-up action taken (where appropriate)

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, Germplasm Management Committee, State or Regional Vine Improvement Groups.

Procedure
Ensure that inspectors are carrying appropriate equipment to conduct the inspections (Inspectors Equipment CheckList).
The first inspection is conducted by a qualified ampelographer in the first growing / fruiting season of the germplasm vines to ensure trueness-to-type and record on Ampelography Inspection Sheet.
Each germplasm planting is inspected at least once each year by the responsible staff before harvesting of cuttings commences.

Inspection timing
Ideally, two inspections should be conducted each year,
1. November – January (Post-fruit-set and pre-veraison)
2. February – April (Post-harvest and pre-leaf fall).
However, if only one inspection is able to be conducted then it should be timed so that the white varieties are inspected in November-January (concentrating on AGY detection) and the red varieties are inspected in February-April (concentrating on GLRV1-3 detection).

What to inspect for
Priority 1
Grapevine Leafroll associated Virus
Australian Grapevine Yellows
Restricted Spring Growth
Crown gall (if obvious symptoms)
Off-Types

Priority 2
Mealy bugs, Bud mite, Powdery/ Downy Mildew, Nutritional disorders, Spray damage, Eutypa, Phomopsis, Black Spot, Mechanical damage, Botrytis, Rust mite and excessive weed growth.

Conducting the inspection
It is not intended that inspectors stop and look within each canopy, but
The National Vine Accreditation Scheme for Vine Improvement Groups

rather identify vines that look “different” from the rest.

- Inspectors may work in pairs at normal walking pace, one each side of the vine row, inspecting each vine
- Normal OH&S precautions apply for working outdoors
- Note abnormalities or incidence of pest and disease symptoms as listed in Priority 2. These vines do not need to be tagged
- Tag vines that are not true-to-type or if they show symptoms of diseases listed in Priority 1
- Check accuracy of map/field plan details as documented
- Complete and sign Vine Health Inspection Sheet
- Forward sheets to vine improvement committee as soon as possible
- Forward any samples collected to appropriate laboratory for testing

Documentation
Section 22 Form 5: Inspectors Equipment Check List
Section 23 Form 6: Ampelography Inspection Sheet
Section 24 Form 7: Vine Health Inspection Sheet
Section 6: Procedure 6: Selection And Harvesting Of Cuttings from Germplasm

Purpose
To collect viable cuttings that are true to type according to the requirements for pre-multiplication establishment.

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, Germplasm Management Committee, State or Regional Vine Improvement Groups.

Procedure
Cuttings are taken when appropriate for hard wood or green-mist propagation. Identify and cross check the position and clone of the germplasm vines to be cut using the field plan and row labels.
Cuttings required are detailed on the Cutting Summary Sheet provided to the Cutter.
Strictly, cut, bundle and label, one clone at a time.
Sterilise snips with a quaternary ammonium disinfectant before each new area is entered.
Mature, live shoots with healthy buds are selected on the basis of shoot diameter, length and number of buds and cut to length using a standard length piece of dowel as a guide.
Cut a horizontal cut at the base, 5-8mm from the bottom bud, and cut at an angle (45°) above the top bud.
Reject dead, damaged or diseased cuttings.
Remove tendrils.
Bundle cuttings as required and label the bundle with the variety, clone, cutter’s name and number of cuttings in the bundle. Cuttings from Germplasm vines require a white label.
Protect bundled cuttings from dehydration, and process on the same day as cutting.
Hard-wood cuttings maybe stored in a coolroom at 10-20°C until such time when they can be processed, including Hot Water Treatment (refer Section 39 Appendix 1: Disinestation of Grapevine Cuttings using Hot Water Treatment).

Cutting Specifications

Scion cuttings
Cuttings should be >300mm in length, at least 5mm in diameter measured below the top bud and as near straight as possible. If there is a limited supply and a great need to establish source vines, all cuttings should be taken.
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Rootstock cuttings
Cuttings should be >400mm in length, at least 5mm in diameter measured below the top bud, and as near straight as possible. If there is a limited supply and a great need to establish source vines, all cuttings should be taken.

Documentation
Section 25 Form 8: Cutting Summary Sheet
Section 26 Form 9: Daily Cutting Sheet
Section 36 Form 19: Load Record Sheet
Section 37 Form 20: Batch Record Sheet
Section 7: Procedure 7: Establishment and Maintenance of Pre-Multiplication Rows

Purpose
To ensure the continuing supply of healthy, true to type, source material.

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, Germplasm Management Committee, State or Regional Vine Improvement Groups.

Procedure
A contractual agreement is established and signed by both the VIG and the property owner before planting the material.
Pre-multiplication rows are established only from certified cuttings from germplasm vines.
Germplasm hardwood cuttings are disinfested by hot water treatment.
The planting of rootlings is supervised by the responsible staff. Replacement vines are supplied by the VIG.
Vine rows are labelled with an identification code.
A map of the site and the planting is drawn up and included in the agreement.
Location markers are maintained in a serviceable condition.

General Maintenance
Adequate water and fertiliser are applied, weeds are controlled to a reasonable level to avoid competition and harbouring of pests.
Disease Control; a spray program to control powdery mildew, downy mildew and vine pests is implemented.
Protection from contamination; reasonable measures are taken to avoid contamination of the area by other clones of vines, by soil from contaminated outside vineyards and by virus vectors.
Vineyards are inspected within six months of planting and subsequently yearly health inspections apply.

Documentation
Pre-multiplication rows;
Section 20 Form 3: Field Plan
Section 21 Form 4: Germplasm Database Record
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 8: Procedure 8: Pre-multiplication Row Health Inspections

Purpose
- To identify vines that are unsuitable for cutting selection, based on Health, Vigour, Trueness-to-type and Mechanical problems.
- To estimate cutting numbers
- To suggest follow-up action taken (where appropriate).

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, Germplasm Management Committee, State or Regional Vine Improvement Groups.

Procedure
Ensure that inspectors are carrying appropriate equipment to conduct the inspections (Inspectors Equipment Checklist).
The first inspection is conducted by a qualified ampelographer in the first growing / fruiting season of the pre-multiplication vines to ensure trueness-to-type and record on Ampelography Inspection Sheet.
Each pre-multiplication planting is inspected at least once each year by the responsible staff before harvesting of cuttings commences.

Inspection timing
Ideally, two inspections should be conducted each year,
1. November – January (Post-fruit-set and pre-veraison)
2. February – April (Post-harvest and pre-leaf fall).
However, if only one inspection is able to be conducted then it should be timed so that the white varieties are inspected in November-January (concentrating on AGY detection) and the red varieties are inspected in February-April (concentrating on GLRV1-3 detection).

What to inspect for

Priority 1
Grapevine Leafroll associated Virus
Australian Grapevine Yellows
Restricted Spring Growth
Crown gall (if obvious symptoms)
Off-Types

Priority 2
Mealy bugs, Bud mite, Powdery/ Downy Mildew, Nutritional disorders, Spray damage, Eutypa, Phomopsis, Black Spot, Mechanical damage, Botrytis, Rust mite and excessive weed growth.
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Conducting the inspection
It is not intended that inspectors stop and look within each canopy, but rather identify vines that look “different” from the rest.

- Inspectors may work alone or in pairs with one each side of the vine row, inspecting each vine
- Normal OH&S precautions apply for working outdoors
- Note abnormalities or incidence of pest and disease symptoms as listed in Priority 2. These vines do not need to be tagged
- Tag vines that are not true-to-type or if they show symptoms of diseases listed in Priority 1
- Check accuracy of map/field plan details as documented
- Complete and sign Vine Health Inspection Sheet
- Forward sheets to vine improvement committee as soon as possible
- Forward any samples collected to appropriate laboratory for testing

Documentation
Section 22 Form 5: Inspectors Equipment Check List
Section 23 Form 6: Ampelography Inspection Sheet
Section 24 Form 7: Vine Health Inspection Sheet
Section 9: Procedure 9: Selection and Harvesting of Cuttings from Pre-multiplication Rows

Purpose
To collect viable cuttings that are true to type according to the requirements for source block establishment.

Responsibility
State Departments of Agriculture/Primary Industry, Germplasm Management Committee, State or Regional Vine Improvement Groups.

Procedure
Cuttings are taken when appropriate for hard wood or green-mist propagation. Identify and cross check the position and clone of the pre-multiplication vines to be cut using the field plan and row labels. Cuttings required are detailed on the Cutting Summary Sheet provided to the Cutter.
Strictly, cut, bundle and label, one clone at a time.
Sterilise snips with a quaternary ammonium disinfectant before each new area is entered.
Mature, live shoots with healthy buds are selected on the basis of shoot diameter, length and number of buds and cut to length using a standard length piece of dowel as a guide.
Cut a horizontal cut at the base, 5-8mm from the bottom bud, and cut at an angle (45°) above the top bud.
Reject dead, damaged or diseased cuttings.
Remove tendrils.
Bundle cuttings as required and label the bundle with the variety, clone, cutter's name and number of cuttings in the bundle. Cuttings from pre-multiplication vines require a green label.
Protect bundled cuttings from dehydration, and process on the same day as cutting.
Hard-wood cuttings maybe stored in a coolroom at 1°-2°C until such time when they can be processed, including Hot Water Treatment (refer Section 39 Appendix 1: Disinfection of Grapevine Cuttings using Hot Water Treatment).

Cutting Specifications

Scion cuttings
Cuttings should be >300mm in length, at least 5mm in diameter measured below the top bud and as near straight as possible. If there is a limited supply and a great need to establish source vines, all cuttings should be taken.
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Rootstock cuttings
Cuttings should be >400mm in length, at least 5mm in diameter measured below the top bud, and as near straight as possible. If there is a limited supply and a great need to establish source vines, all cuttings should be taken.

Documentation
Section 25 Form 8: Cutting Summary Sheet
Section 26 Form 9: Daily Cutting Sheet
Section 36 Form 19: Load Record Sheet
Section 37 Form 20: Batch Record Sheet
Section 10 Procedure 10: Establishment and Maintenance of Field Nursery Rootlings

Purpose
To ensure the supply of healthy, true-to-type rootlings for the establishment of source areas.

Responsibility
State Vine Improvement Group Manager or State Departments of Agriculture/Primary Industry.

Procedure

Propagation of Cuttings
Cuttings are processed and/or callused. Propagules must be planted in an area of soil that has been fallowed from grapevines for at least 2 years or alternatively fumigate with a registered nematicide to ensure the best growth of the vines. Ensure that the cuttings are clearly labelled and finish planting one variety (clone) in a single row before starting another variety (clone) leaving some space between the varieties for ease of identification. Draw up a field plan / map of the site that records the number of cuttings planted per variety/clone. Rootlings are to be lifted during dormancy and cleaned prior to processing, including Hot Water Treatment. (refer Section 39 Appendix 1: Disinfestation of Grapevine Cuttings using Hot Water Treatment). After processing rootlings maybe stored in a coolroom at 1-2°C.

General Maintenance
Adequate water and fertiliser are applied, weeds are controlled to a reasonable level to avoid competition and harbouring of pests. Disease Control; a spray program to control powdery mildew, downy mildew and vine pests is implemented. Protection from contamination; reasonable measures are taken to avoid contamination of the area by other clones of vines, by soil from contaminated outside vineyards and by virus vectors. Vines are inspected by an ampelographer and a certificate of Health Inspection is completed within six months of planting. Off-types and diseased vines are identified, removed and destroyed.
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Documentation
Section 20 Form 3: Field Plan (Nursery)
Section 22 Form 5: Inspectors Equipment Check List
Section 23 Form 6: Ampelography Inspection Sheet
Section 24 Form 7: Vine Health Inspection Sheet
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 11    Procedure 11: Establishment and Maintenance of Source Area Plantings

Purpose
To ensure the health and continuing reliability of propagation material.

Responsibility
State Vine Improvement Groups or State Departments of Agriculture/Primary Industry, Property Manager.

Procedure
A contractual agreement is established and signed by both the VIG and the property owner.
All attempts should be made to establish only Class A source areas on private properties.
The planting of rootlings is conducted by the property manager and supervised by the VIG. Replacement vines are supplied by the VIG.
Vine rows are labelled with an identification code.
A map of the site and the planting is drawn up and included in the agreement.
Location markers are maintained in a serviceable condition.
A payment for cuttings sold from the source block may be made to the property owner by the VIG, according to the agreement initially established, to aid in the cost of maintaining these vines.

General Maintenance
Adequate water and fertiliser are applied, weeds are controlled to a reasonable level to avoid competition and harbouring of pests.
Disease Control; a spray program to control powdery mildew, downy mildew and vine pests is implemented.
Protection from contamination; reasonable measures are taken to avoid contamination of the area by other clones of vines, by soil from contaminated outside vineyards and by virus vectors.
Vineyards are inspected within six months of planting and subsequently yearly health inspections apply.

Documentation
Section 27 Form 10: Agreement for the Establishment of Registered Source Area Vines
Section 28 Form 11: Source Area Database Grower Detail Form
Section 20 Form 3: Field Plan
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 12 Procedure 12: Source Area Health Inspections

Purpose
- To identify vines that are unsuitable for cutting selection, based on Health, Vigour, Trueness-to-type and Mechanical problems.
- To estimate cutting numbers
- To suggest follow-up action taken (where appropriate)

Responsibility
Staff of CSIRO, State Departments of Agriculture/Primary Industry, State or Regional Vine Improvement Groups.

Procedure
Ensure that inspectors are carrying appropriate equipment to conduct the inspections (Inspectors Equipment CheckList).
The first inspection is conducted by a qualified ampelographer in the first growing / fruiting season of the source area vines to ensure trueness-to-type and record on Ampelography Inspection Sheet.
Each source area planting is inspected at least once each year by the responsible staff before harvesting of cuttings commences.

Inspection timing
Ideally, two inspections should be conducted each year,
1. November – January (Post-fruit-set and pre-veraison)
2. February – April (Post-harvest and pre-leaf fall).
However, if only one inspection is able to be conducted then it should be timed so that the white varieties are inspected in November-January (concentrating on AGY detection) and the red varieties are inspected in February-April (concentrating on GLRV1-3 detection).

What to inspect for
Priority 1
Grapevine Leafroll associated Virus
Australian Grapevine Yellows
Restricted Spring Growth
Crown gall (if obvious symptoms)
Off-Types

Priority 2
Mealy bugs, Bud mite, Powdery/ Downy Mildew, Nutritional disorders, Spray damage, Eutypa, Phomopsis, Black Spot, Mechanical damage, Botrytis, Rust mite and excessive weed growth.
The National Vine Accreditation Scheme for Vine Improvement Groups

Conducting the inspection

It is not intended that inspectors stop and look within each canopy, but rather identify vines that look “different” from the rest.

- Inspectors may work in pairs at normal walking pace, one each side of the vine row, inspecting each vine
- Normal OH&S precautions apply for working outdoors
- Note abnormalities or incidence of pest and disease symptoms as listed in Priority 2. These vines do not need to be tagged
- Tag vines that are not true-to-type or if they show symptoms of diseases listed in Priority 1
- Check accuracy of map/field plan details as documented
- Complete and sign Vine Health Inspection Sheet
- Forward sheets to vine improvement committee as soon as possible
- Forward any samples collected to appropriate laboratory for testing

Rejection of Source Areas

A source area may be rejected altogether, if there is a certain level of one or more problems present (or a certain minimum number of vines tagged).

*The Vine Improvement Committee makes rejection decisions, not the Source Area Inspector.

There are three types of rejection criteria:

1. Detection of Virus Infection (List One)
2. Vine Improvement Committee standard,
   For example greater than a pre-determined percentage of Botrytis or Mildew infection
3. Economic/demand-based decision
   Dependent on:
   - how bad the problem is
   - how much the material is in demand
   - what other supply is available
   - what it will cost to cut the material

Documentation

Section 22 Form 5: Inspectors Equipment Check List
Section 23 Form 6: Ampelography Inspection Sheet
Section 24 Form 7: Vine Health Inspection Sheet
Section 13: Procedure 13. Allocation of Cuttings

Purpose
To determine the amount of material available for distribution.

Responsibility
Managers of Regional Vine Improvement Groups.

Procedure
Order forms are printed and mailed to clients.
Each VIG sets a due date by which time the order forms need to be returned accompanied with a deposit.
Orders are consolidated, as number required per clone on the Summary of Orders Sheet.
The number of cuttings available for each clone, is estimated using the Vine Health Inspection Sheet and compared with the total number of cuttings required.
Where demand or total orders exceeds supply, cuttings are allocated to customers as per the State Association’s allocation policy.
Clients are notified of their estimated allocation.
Target numbers of cuttings of each available clone are set and recorded on the Cutting Summary Sheet.

Documentation
Section 29 Form 12: Order Form
Section 30 Form 13: Summary Of Orders Sheet
Section 25 Form 8: Cutting Summary Sheet
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 14  Procedure 14: Selection and Harvesting of Cuttings

Purpose
To collect viable cuttings that are true to type in accordance with orders.

Responsibility
Vine Improvement Group Manager, Field officer, Cutters, Delivery person.

Procedure
Cuttings are taken only when vines are dormant
Identify and cross check the position and clone of the source vines to be cut using the field plan and row labels.
Cuttings required are detailed on the Cutting Summary Form provided to the Field Officer.
Strictly, cut, bundle and label, one variety/clone at a time.
Sterilise snips before each new area is entered.
Mature, live shoots with healthy buds are selected on the basis of shoot diameter, length and number of buds and cut to length using a standard length piece of dowel as a guide (see Cutting Specifications below).
Cut a horizontal cut at the base, 5-8mm from the bottom bud, and cut at an angle (45°) above the top bud.
Reject dead, damaged or diseased (showing symptoms of, for example, Phomopsis, powdery mildew) cuttings.
Remove tendrils.
Discard severely bent, twisted and out-of-size cuttings.
Take cuttings to the end of the row, bundled into lots of 400 and tied and labelled with the variety, clone, cutter’s name and number of cuttings in the bundle.
Details of the Variety/clone, cutter, number of cuttings and source identification must be recorded on a Daily Cutting Sheet.
Protect bundled cuttings from dehydration, and deliver to the shed on the same day as cutting.
Cuttings may be processed including Hot Water Treatment (refer Section 39 Appendix 1: Disinfection of Grapevine Cuttings using Hot Water Treatment).
Once processed cuttings may be stored in a coolroom at 1-2°C until they can be distributed.
The National Vine Accreditation Scheme for Vine Improvement Groups

Cutting Specifications

Scion cuttings
Table 1. The various specifications and general use of scion cuttings

<table>
<thead>
<tr>
<th>Material definition</th>
<th>Length</th>
<th>Diameter</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ungraded (Standard grade)</td>
<td>&gt;300mm</td>
<td>6 to 12mm, below top bud</td>
<td>Nearly straight, with at least 4 buds.</td>
</tr>
<tr>
<td>Bench graft grade</td>
<td>&gt;300mm</td>
<td>&gt;5mm top, 12mm base</td>
<td>As above, with at least 3 useable buds</td>
</tr>
<tr>
<td>Field/Chip grade bud</td>
<td>&gt;300mm</td>
<td>&gt;5mm top, 7mm base</td>
<td>As above, with at least 3 useable buds</td>
</tr>
<tr>
<td>Thin grade</td>
<td>&gt;300mm</td>
<td>3 to 5 mm, below top bud</td>
<td>As above, with at least 3 useable buds</td>
</tr>
</tbody>
</table>

Rootstock cuttings
Table 2. The various specifications and general use of rootstock cuttings

<table>
<thead>
<tr>
<th>Material definition</th>
<th>Length</th>
<th>Diameter</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bench graft grade</td>
<td>&gt;400mm</td>
<td>7-12mm, below top bud</td>
<td>Nearly straight</td>
</tr>
<tr>
<td>Field graft grade</td>
<td>&gt;400mm</td>
<td>5-12mm, below top bud</td>
<td>May be some curvature</td>
</tr>
<tr>
<td>Low Grade</td>
<td>&gt;300mm</td>
<td>Varies, may be &gt;12mm</td>
<td>May be too curved</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>May be slightly damaged</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>May have lateral growth</td>
</tr>
<tr>
<td>Thin grade</td>
<td>&gt;400mm</td>
<td>3 to 5 mm, below top bud</td>
<td>May be some curvature</td>
</tr>
</tbody>
</table>

Quality Control Procedure
Performance of cutters in the field is checked by the field supervisor at random.
Cuttings are inspected on arrival at the shed and any faults are recorded on the Quality Control Inspection Sheet. Cutters are advised of any faults.

Documentation
Section 25 Form 8: Cutting Summary Sheet
Section 26 Form 9: Daily Cutting Sheet
Section 31 Form 14: Quality Control Inspection Sheet
Section 36 Form 19: Load Record Sheet
Section 37 Form 20: Batch Record Sheet
Section 15
Procedure 15: Grading, Packaging and Storing Cuttings

Purpose
To ensure consistent supply of graded, viable cuttings.

Responsibility
State Vine Improvement Group Managers, Shed supervisor, Shed Quality Control Officer, Sorters

Procedure

Grading/Sorting
On arrival at the shed all cuttings are hydrated. Cuttings are graded for:
• length; any under length cuttings are discarded or downgraded, over length cuttings are trimmed as per cutting specifications
• diameter; using a size gauge on the bench
• appearance; severely bent, dead, damaged or disbudded cuttings are discarded
• number of viable buds; to meet specification.
Instructions for shed staff may be written on the Instruction Work Sheet by the shed supervisor or VIG manager.

Labelling
Sorted cuttings are collected in plastic containers that are regularly washed and disinfected. When over 100 cuttings are collected they are labelled showing the class of the material, the variety and clone, the grade of cutting (Field or Bench) and the source identification code.

Labels are attached to a cutting in between the tying material (but not attached to the tying material).

<table>
<thead>
<tr>
<th>Class</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>BLUE</td>
</tr>
<tr>
<td>Class B</td>
<td>YELLOW</td>
</tr>
<tr>
<td>Class C</td>
<td>RED</td>
</tr>
</tbody>
</table>

Propagated From Materials Supplied By Vine Improvement Group
PO Box 8000, New Town VIG 1642

Variety:  
Clone:  
Source:  
Grade:  

15-1
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Packaging
Bundles of 100 cuttings (or to special order), are tied securely at two locations with inert material (eg. polypropylene) and packed to prevent dehydration by either:
- Sealing in polythene film bags or
- Wrapping in wet hessian and packed in woven polypropylene wool packs
A standard number of bundles (eg. 5 x 100-bundles) per pack.

Storage
Packaged cuttings are either despatched promptly, or are held in a coolroom and are recorded on the Stock Summary Record Sheet. For prolonged storage, cuttings may be dipped first in Chinasol (see Hot Water Treatment in Nursery Best Practice Manual).

Hygiene
All shed staff must wear gloves and plastic or cloth aprons that are washed regularly.
Shoes must be clean and washed with a disinfectant on entering the shed (disinfectants commonly used include 2000ppm quaternary ammonium chlorides, chlorine solutions and methylated spirits at 70%).
The cutting shed is swept clean of any dropped cuttings between successive batches of different clones. The shed is swept at the end of the day and all benches and areas used to store cuttings are washed down and disinfected.
Containers used to collect sorted cuttings should be washed regularly and disinfected.
Gauges must be disinfected and calibrated regularly.
Snips, and any tools used are disinfected between varieties and at the end of the day.
Canvas Taupes are cleaned as required.
Rubbish, including off cuts, dropped and rejected cuttings are placed in rubbish bins that are emptied weekly or as required.
Vehicle traffic within the shed is kept to a minimum and forklifts must remain in their designated areas.
Farm implements are inspected before entering the shed or the vicinity of the shed and, if not clean (especially free of any soil or plant contamination), they are washed thoroughly (including the tyres).
Hygiene practices are recorded on the Instruction Worksheet.
Quality Control Procedure for Grading

Each batch of cuttings is sampled and inspected by the Shed Quality Control Officer or Shed Supervisor immediately after bundling in the shed and just before bundles are grouped and packed. A ‘batch’ is defined as all the cuttings of one variety, clone, class and grade processed on a day, and is identified by a batch number.

Sample
Select at random 1 bundle from each sorter twice per day (a minimum of 1 bundle per sorter should be checked daily):

Count
The number of cuttings per bundle is counted and recorded on the Quality Control Procedure Check Sheet. Where counts are more than 2% less, a further sample is taken and counted and the sorter notified.

Condition of Cuttings
Randomly select 20 cuttings per bundle and inspect for:
- freshness
- hydration
- dimensions
- straightness
- trimmed, tendrils removed
- number and condition of buds

Labels
Check that label is attached, at the proper place, and that it is clear and accurate.

Acceptance Level
Observations are recorded on the Quality Control Procedure.
If:
- >95% comply, the batch is approved
- <95% comply, the batch is reworked, downgraded or destroyed, at the discretion of the Shed Supervisor or Quality Control Officer and the sorter notified.

Documentation
Section 31 Form 14: Quality Control Inspection Sheet
Section 32 Form 15: Instruction Work Sheet
Section 33 Form 16: Stock Summary Record Sheet
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 16 Procedure 16: Distribution of Cuttings

Purpose
To ensure cuttings are distributed, according to the client order and as quickly as possible.

Responsibility
Shed Supervisor, State Vine Improvement Group Manager, Despatch Operator.

Procedure
Quantities of cuttings produced are recorded in the Stock Summary Record Sheet, and totalled to indicate current stocks of cuttings.
Customers are notified when their material is available to be picked up or suitable freight/postage arrangements are made.
Cuttings held in cold store for collection at a later date.
The temperature of the cool room is monitored daily to ensure the temperature remains at 1-2°C. Temperatures are recorded on the Coolroom Temperature Record Sheet or printed from stored data in a data logger.
Despatches are recorded on a Despatch Docket, a copy of which is provided to the customer.
The number of cuttings despatched is also documented on the Summary of Orders Sheet.
Cuttings are distributed consistent with State quarantine regulations.

Documentation
Section 30 Form 13: Summary Of Orders Sheet
Section 33 Form 16: Stock Summary Record Sheet
Section 34 Form 17: Coolroom Temperature Record Sheet
Section 35 Form 18: Despatch Docket
Sample Forms

The following recording sheets are examples of how the mandatory record keeping for AVIA can be done. There is no requirement to use these sheets but the records must be kept in accordance with the Guidelines. They must be made available to the AVIA CEO, or other AVIA representative when requested. Records should be kept for a minimum of 7 years by the VIG office.

Form 1: Order Form for Germplasm Material
Form 2: Virus Sample Collection Sheet
Form 3: Field Plan
Form 4: Germplasm Database Record
Form 5: Inspectors Equipment Check List
Form 6: Ampelography Inspection Sheet
Form 7: Vine Health Inspection Sheet
Form 8: Cutting Summary Sheet
Form 9: Daily Cutting Sheet
Form 10: Agreement for the Establishment of Registered Source Area Vines
Form 11: Source Area Database Grower Detail Form
Form 12: Order Form
Form 13: Summary Of Orders Sheet
Form 14: Quality Control Inspection Sheet
Form 15: Instruction Work Sheet
Form 16: Stock Summary Record Sheet
Form 17: Coolroom Temperature Record Sheet
Form 18: Despatch Docket
Form 19: Load Record Sheet
Form 20: Batch Record Sheet
Form 21: Hot Water Treatment Record Sheet
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 18 Form 1: Order Form for Germplasm Material

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>CLONE</th>
<th>NO. CUTTINGS REQ'D</th>
<th>NO. CUTTINGS ALLOCATED</th>
<th>VIRUS TEST REPORT #</th>
</tr>
</thead>
<tbody>
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Costings
1. A cost of $ will be charged per variety to virus test this material. An additional cost of $ per cutting will be charged to cover processing and handling (including hot water treatment) of these cuttings.
2. Freight cost will be additional to these charges.
3. A deposit of $60 per variety ordered is required before 1st May before this order will be accepted.
4. Cheques to be payable to AVIA.
5. Delivery of material will occur mid-late August.
6. All prices inclusive of GST

Name: ...........................................................................................................

Postal Address: ..............................................................................................

Street address for delivery of cuttings: ............................................................

Other Instructions: ...........................................................................................

Please complete this form and return to AVIA, PO Box 5057 Mildura 3502
The National Vine Accreditation Scheme for Vine Improvement Groups

Order Form for Germplasm Material

Conditions of Sale

Agreement for the supply of grapevine germplasm material to
The Australian Vine Improvement Association (AVIA)

(Currently under review)
Section 19 Form 2: Virus Sample Collection Sheet

<table>
<thead>
<tr>
<th>State:</th>
<th>Organisation:</th>
<th>Property:</th>
<th>Collector:</th>
<th>Detach and return shaded section only with samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample ID</td>
<td>Collect Date</td>
<td>Variety</td>
<td>Clone</td>
<td>Site Details</td>
</tr>
<tr>
<td>005291</td>
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NB. The unshaded portion of the list is only for the health inspectors' information and is not sent to the testing facility.
Section 20: Form 3: Field Plan

Field Plans/Maps must contain sufficient detail to accurately identify:
- Direction of North
- District
- Direction to key towns or landmarks
- Site details
- Separate Registered Source Number for each clone
- Variety / Clone
- Number of vines and rows
- Local warnings such as position of sumps, gate-valves, etc.
- Block history, including origin of source material

Don't use information that becomes dated, such as reference to "young" plantings, or other temporary fixtures such as "adjacent to white fence". Include a revision date at the top of the map.

GPS co-ordinates may be used as supplementary information if available.

Site: Agriculture Research Station
Block F
Sampletown 7654
Phone 03 5051 4562

Shiraz 1654
Row:- 1
Panel 2
Vines:- 4-6
Registered Germplasm Number
NW 2936
Sourced from CSIRO
Planted 1982
Section 21: Form 4: Germplasm Database Record
✓ Registered Source Area location map
✓ Pre-numbered red inspection tags
✓ Field Inspection sheets
✓ Red flagging tape
✓ Plastic sample bags
✓ Secateurs
✓ Waterproof marking pen
✓ Reference material, eg. IPM manual, Ute guide, Grape Production Series #1- Diseases and Pests
✓ Paper for rough notes (optional)
✓ Arrange inspection with grower
✓ Foot bath disinfection kit (Refer to “Phylloxera Prevention Protocols, Sheet 5”)
✓ Gum boots (where required)
✓ Wash water for foot bath
✓ Soap
✓ Change of clothing (optional)
✓ Sun screen
✓ Hat
✓ Drinking Water, (4 litres each)
✓ First Aid Kit
✓ Wet Weather Gear
# The National Vine Accreditation Scheme for Vine Improvement Groups

## Section 23: Form 6: Ampelography Inspection Sheet

**Revision date: 21 February 2000**

<table>
<thead>
<tr>
<th>Australian Vine Improvement Association</th>
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<tr>
<td>(State Scheme Logo)</td>
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<tr>
<td>(Unique reference number, printed red)</td>
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</table>

**Vineyard owner:** ________________  **Source area registration number:** ____

**Vineyard location:** ________________  **Number of vines:** ____

**Variety/Patch:** ________________  **Clone:** ______

### Inspector’s report

#### AMPELOGRAPHER

<table>
<thead>
<tr>
<th>DATE OF INSPECTION:</th>
<th>NUMBER OF VINES TAGGED:</th>
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<th>TIME IN</th>
<th>TOTAL INSPECTION HOURS:</th>
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#### TRUENESS TO TYPE:

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<th>NUMBER, OFF TYPE VINES:</th>
<th>SUSPECTED VARIETY:</th>
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**GENERAL CONDITION OF PLANTING**

**ACCEPTABLE/ NOT ACCEPTABLE** (delete as appropriate)

**COMMENTS / SUGGESTED FOLLOW UP REQUIRED**

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**Signed (Ampelographer):** ___________________________ **Date:** __/__/____

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**OFFICE USE ONLY**

**Follow Up Actions Taken**
The National Vine Accreditation Scheme for Vine Improvement Groups

Section 24  Form 7: Vine Health Inspection Sheet

Revision date: 21 February 2000

(State Scheme Logo)  (Unique reference number, printed red) ####

Vineyard owner: __________________________ Source area registration number ______
Vineyard location: __________________________ Number of vines: ______
Variety/Patch: __________________________ Clone: __________

Inspector's report

INSPECTOR 1 __________________________ INSPECTOR 2 __________________________

DATE OF INSPECTION: ____________________________________________
NUMBER OF VINES TAGGED: __________________________________________

TIME IN __________________________
NUMBER OF VIRUS SAMPLES: __________________________________________
TIME OUT __________________________
TOTAL INSPECTION HOURS: __________________________________________

SYMPTOMS OBSERVED  SUSPECTED CAUSE  TAG NUMBER

LEAVES

CANES

TRUNK

AMPELOGRAPHY CHECK ☐

CUTTING ESTIMATE PER VINE (2ND INSPECTION ONLY) __________________________

GENERAL CONDITION OF PLANTING ACCEPTABLE/ NOT ACCEPTABLE (delete as appropriate)

COMMENTS / SUGGESTED FOLLOW UP REQUIRED

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Signed (Inspector 1).................................... Signed (Inspector 2)....................................

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OFFICE USE ONLY  Form revision date: 22 4 99
Follow Up Actions Taken

24-1
### Section 25: Form 8: Cutting Summary Sheet

<table>
<thead>
<tr>
<th>Variety</th>
<th>Clone</th>
<th>Source</th>
<th>Date cut and Delivered to Shed</th>
<th>Daily Cutting Tally</th>
<th>No. of Cuttings Required</th>
<th>Field Officer Signature</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rugger</td>
<td>row 1-57</td>
<td>3/07/92</td>
<td>56,700</td>
<td>150,000</td>
<td>100,000</td>
<td>none</td>
<td>lots of weeds, poor quality canes</td>
</tr>
<tr>
<td></td>
<td>row 1-57</td>
<td>4/07/92</td>
<td>62,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>row 900-940</td>
<td>5/07/92</td>
<td>93,000</td>
<td></td>
<td></td>
<td></td>
<td>good stuff</td>
</tr>
<tr>
<td></td>
<td>row 900-940</td>
<td>7/07/92</td>
<td>87,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>298,700</td>
</tr>
<tr>
<td>Pinot Noir</td>
<td>D2V5</td>
<td>Dick Smith NW600</td>
<td>8/06/92</td>
<td>7,000</td>
<td>12,000</td>
<td>14,000</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9/06/92</td>
<td>10,000</td>
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<td>10/06/92</td>
<td>10,000</td>
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<td>24/06/92</td>
<td>2,500</td>
<td>2,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Name/Code</td>
<td>No. of Cuttings (Hours)</td>
<td>Source (Clone)</td>
<td>Source</td>
<td>Quality Check</td>
<td>Field Officer Signature</td>
<td>Comments</td>
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<tr>
<td>8/06/92</td>
<td>Juan Jutner</td>
<td>2000</td>
<td>Pinot Noir D2V5</td>
<td>Dick Smith</td>
<td>Yes</td>
<td></td>
<td>Only 370 cuttings in one bundle</td>
</tr>
<tr>
<td></td>
<td>Kym Tailor</td>
<td>1200</td>
<td>&quot;</td>
<td>&quot;</td>
<td>yes</td>
<td></td>
<td>good cuttings</td>
</tr>
<tr>
<td></td>
<td>Adrian Brown</td>
<td>2500</td>
<td>&quot;</td>
<td>&quot;</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Martha Brown</td>
<td>1200</td>
<td>&quot;</td>
<td>&quot;</td>
<td>No</td>
<td></td>
<td>4 bundles</td>
</tr>
<tr>
<td>3/07/92</td>
<td>Husna</td>
<td>2000</td>
<td>Ruggeri row 900-957</td>
<td>yes</td>
<td>good length-too thin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/07/92</td>
<td>Husna</td>
<td>2400</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td>shed said too thin</td>
</tr>
<tr>
<td>5/07/92</td>
<td>Husna</td>
<td>3600</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/07/92</td>
<td>Husna</td>
<td>3200</td>
<td>Row 61</td>
<td>yes</td>
<td></td>
<td></td>
<td>Replaced thins</td>
</tr>
</tbody>
</table>
AGREEMENT

between

(state Vine Improvement Group)

and

(the grower/ nursery)

for establishment and maintenance of

REGISTERED SOURCE AREAS
The National Vine Accreditation Scheme for Vine Improvement Groups

Agreement between;

(Name)

do

(Address)

(hereinafter referred to as "the Grower")

and

(hereinafter referred to as the Vine Improvement Group ("VIG")

whereby it is agreed as follows,

Conditions of Supply

1.1 The VIG has supplied propagation material as described in the Schedule, that has been provided in accordance with the AVIA National Vine Accreditation Scheme, (Part One). This has been achieved using accredited standards to collect, handle and propagate varieties of known variety, clone, performance and virus status.

1.2 The parties agree that the vines have been supplied by the VIG to the Grower to enable the parties to establish a Registered Source Area for the production of grapevine propagation material.

The Grower will establish and maintain the vines as a VIG Registered Source Area at the location specified in the Schedule for the Term indicated in the Schedule for so long as the VIG shall deem the propagation material produced from the vines to be suitable for its purposes.

1.3 The Grower shall plant/ prune and maintain these vines to the best of his/ her/ their/ its ability, with due consideration to:

- suitable planting site
- suitable trellis design and construction
- supply of adequate irrigation
- appropriate disease and pest control
- appropriate weed control
- the need for pruning by the Grower to be coordinated with cutting collection by the VIG,

and the Grower shall accept all reasonable directions from the VIG or its agent on these matters. In particular The Grower will not change the maintenance program or introduce any additional measures without the prior agreement of the VIG or its agent.

1.4 Summer hedging may be performed by the Grower when necessary to assist with disease control, with due care to ensure that cane length is maintained at a minimum of 50cm.

1.5 The VIG will supply replant material for the Registered Source Area as necessary.

Cutting Collection
The National Vine Accreditation Scheme for Vine Improvement Groups

2.1 The VIG will coordinate the timing of cutting collection with the Grower, and will provide adequate supervision of labour during collection to ensure that cutters conduct themselves in an acceptable manner, and that pruning instructions are adhered to.

2.2 The Grower acknowledges that all cuttings and buds remain the property of the VIG, and agrees to make available any cuttings from the source area to the VIG prior to 31st July, or at a date agreed between the parties. The Grower will coordinate the time of pruning to assist in the collection of these cuttings.

2.2.1 Any cuttings used by the Grower shall remain the property of the VIG until payment is received by the VIG from the Grower, as described in the Schedule, "Levy", except where the cuttings are used by the Grower exclusively for expansion of own plantings.

2.3 The Grower agrees to supply the VIG the percentage of cuttings listed in the Schedule, "Allocation" as agreed by the Grower and the VIG and reviewed from time to time.

2.4 Subject to Clause 2.3 hereof, the Grower shall not sell, distribute, trade nor give cuttings from the Registered Source Area to any other party without the prior approval of the VIG.

Levy

3.1 The Levy paid to the VIG by the Grower (where the Grower is or has a commercial nursery) shall cover the following activities:

- Annual inspection of the Location as described in the National Vine Accreditation Scheme, Part One).
- Testing for grapevine pest and disease on a representative sample basis.

Payment

4. The VIG will make a payment for any cuttings taken from this source area, the rate to be determined by the VIG annually. The rate for the first year is set out in the Schedule.

Access

5. The VIG or its agents will be allowed reasonable access by the Grower to the Registered Source Area for the purposes of inspection of the source area for general health, growth, certification and assessing potential cutting numbers.
The National Vine Accreditation Scheme for Vine Improvement Groups

Signed (on behalf of The Grower)

In the presence of

(Witness)

Signed (on behalf of the VIG)

in the presence of

(Witness)

Dated / /
The National Vine Accreditation Scheme for Vine Improvement Groups

Schedule

Vine Propagation Material:-

Variety:-

Clone:-

Quantity:-

Form:- (ie. Cuttings/ Rootlings)

Origin:- (Audit trail details)

Supervision of Planting:- (Signed and Dated)

Location:-

Registration No. (NAS)

Block No.

Town

Post Code

State

Labels fixed to Posts:- (NAS identification)

Field Plan/ Map Completed:- (Dated and Attached to Agreement)

Term

Five (5) years from date of last inspection

Allocation

By agreement, (   )%* of the propagation material produced from the Registered Source Area to be made available annually to the VIG.

Levy

(Paid by the Grower, being a commercial nursery, to the VIG for cuttings used for the Growers' own commercial propagation)

(   ) cents per cutting*

Payment

(Paid to the Grower by the VIG)

(   ) cents per cutting*

*Dated   /   /
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 28  Form 11: Source Area Database Grower Detail Form
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Vine Improvement Group
PO Box 8000, NewTown VIG 1642. Phone 01 59412572 Fax 01 594124573

<table>
<thead>
<tr>
<th>Rootstock/Scion Variety</th>
<th>Clone</th>
<th>Number Of Cuttings</th>
<th>Estimated Allocation</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Bench</td>
<td>Field</td>
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</tbody>
</table>

Deposit Enclosed:

Conditions of Sale: I offer to purchase the material ordered on the following terms:

1. Closing Date
2. The acceptance of orders will be notified by June.
3. Prices are determined by the VIG. Charges for freight are additional. Payment for material is required within 30 days from receipt of invoice.
4. Great care has been taken by the VIG to ensure that the material supplied pursuant to this order will be true to type, sound and of the highest possible quality, however on occasion the material may have naturally occurring latent defects which the VIG cannot prevent or detect and consequently the VIG cannot warrant the material’s trueness to type, soundness or quality and all warranties implied into this contract by Statute or by operation of law are hereby excluded.
5. The purchaser acknowledges that the VIG has not made any representation to the purchaser with respect to the material and that the purchaser in making this purchase has relied solely on its own judgement and expertise.
6. The purchaser agrees not to make any claim against the VIG in respect of the material supplied except where the claim arises from negligence by the VIG or failure by the VIG to supply the order as accepted otherwise than due to factors beyond its control. The liability of the Association for its negligence or for its failure to apply shall not exceed the amount of the purchase price paid by the purchaser.
7. The purchaser agrees to take delivery of the material at the VIG office on or before August or alternatively to advise the Association of an address to which the material may be despatched and pay handling charges, freight and insurance as invoiced by the VIG. Property in the material shall pass to the purchaser at the time the material leaves the VIG premises after which time the material shall be at the risk of the purchaser in all respects against which the purchaser should take insurance.
8. Should the purchaser fail to pay for the material plus any other charges on the invoice the VIG may without notice to the purchaser recall the material and claim any loss on resale from the purchasers as damages for breach of contract.

Signature of Purchaser............................................... Date / /
Signature of VIG representative..................................Date / /

Name:.................................................................
Postal Address:....................................................
Phone &/or Fax:....................................................
Delivery Address for Postal orders:...............................
### Section 30. Form 13: Summary Of Orders Sheet

<table>
<thead>
<tr>
<th>Variety</th>
<th>Clone</th>
<th>Customer</th>
<th>Grade</th>
<th>Allocation</th>
<th>Date notified</th>
<th>No. picked up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bench</td>
<td>Field</td>
<td>Thin</td>
<td></td>
</tr>
<tr>
<td>Shiraz</td>
<td>PT23</td>
<td>Adams</td>
<td>8000</td>
<td>6000</td>
<td>27/6/92</td>
<td>2000+4000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Andrews</td>
<td>5000</td>
<td>3700</td>
<td>27/6/92</td>
<td>3700</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Miller AC</td>
<td>2000</td>
<td>1500</td>
<td>27/6/92</td>
<td>1500</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>8000</td>
<td>7000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Revision date: 21 February 2000
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 31: Form 14: Quality Control Inspection Sheet

<table>
<thead>
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<tbody>
<tr>
<td>Eve</td>
<td>Ruggeri</td>
<td>Bench</td>
<td>Yes</td>
<td>103</td>
<td>2/20 short</td>
<td>Yes</td>
<td>Yes</td>
<td>2</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>John</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>101</td>
<td></td>
<td>Yes</td>
<td>4/20 too bent</td>
<td>4</td>
<td>R</td>
<td>Told John</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cutter Name/ Code</th>
<th>Date Cut</th>
<th>No. Cuttings</th>
<th>General Comment on Quality</th>
<th>Followed up (Signature)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misha</td>
<td>27/5/92</td>
<td>375</td>
<td>Too skinny</td>
<td></td>
</tr>
<tr>
<td>Rebecca</td>
<td>27/5/92</td>
<td>400</td>
<td>Cutting off top bud</td>
<td></td>
</tr>
</tbody>
</table>
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 32. Form 15: Instruction Work Sheet

Sheet No. .......

<table>
<thead>
<tr>
<th>Issued by:</th>
<th>Date:</th>
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<tbody>
<tr>
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</table>

Employee Responsible: | Area: | | |

All employees are responsible and accountable for the quality and productivity of their own work and the work of any employee that they may be supervising.

All employees are required to perform duties in a safe and courteous manner.

<table>
<thead>
<tr>
<th>Date:</th>
<th>Task Description</th>
<th>Cart Note</th>
<th>Hours</th>
<th>Employee Responsible for task</th>
<th>Employee Signature on completion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wash down benches</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Wash plastic containers</td>
<td></td>
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<tr>
<td></td>
<td>Clean banding machine</td>
<td></td>
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<td></td>
<td>Clean snips and gauges</td>
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<tr>
<td></td>
<td>Sweep floors</td>
<td></td>
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<tr>
<td></td>
<td>Cover cuttings in shed to prevent dehydration</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Empty bins</td>
<td></td>
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<td></td>
<td>Other</td>
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</tbody>
</table>

I am satisfied that all task descriptions listed have been performed in a competent manner with due regard to the well being of goods and equipment as set by VIG Policy and Procedural Standards.

<table>
<thead>
<tr>
<th>Signed by Shed Supervisor:</th>
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32-1
<table>
<thead>
<tr>
<th>Date</th>
<th>Variety (Clone)</th>
<th>Source No.</th>
<th>No. of Cuttings</th>
<th>Grade</th>
<th>Treated Batch No.</th>
<th>Box No.</th>
<th>Client</th>
<th>No Buds</th>
<th>No. of Cuttings</th>
<th>Storing Date</th>
<th>Despatch Docket No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/7/92</td>
<td>Shiraz PT23</td>
<td>NW64</td>
<td>24,000</td>
<td>Bench</td>
<td>182</td>
<td>14</td>
<td>S Arnold</td>
<td>2000</td>
<td>-</td>
<td>19/09/92</td>
<td>4578</td>
</tr>
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<td></td>
<td></td>
<td>5580</td>
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<tr>
<td>Date</td>
<td>Temp (°C)</td>
<td>Sign</td>
<td>Date</td>
<td>Temp (°C)</td>
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<td>Temp (°C)</td>
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</table>
The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

**Section 35**

**Form 18: Despatch Docket**

Vine Improvement Group
PO Box 8000, NewTown VIG 1642. Phone 01 59412572 Fax 01 594124573

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Number</th>
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<tbody>
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</tbody>
</table>

Despatch No. ####

Date

Client Signature (acceptance of material):

- Each bundle has a unique Quality Assurance code for traceability –

**PLEASE RETAIN LABELS**
Section 36    Form 19: Load Record Sheet

LOAD #

DATE LOADED:

DATE HYDRATED:

DATE SORTED:

Source Area Code: __________________________

Number of Bundles: ________________________

Name of Person Making Entry: _______________

Revision date: 21 February 2000
<table>
<thead>
<tr>
<th>Source Area Code</th>
<th>Load Number</th>
<th>Number of Bundles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Name of Person Making Entry:

Date:

BATCH #: 37-1
# The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

<table>
<thead>
<tr>
<th>Date</th>
<th>Batch No.</th>
<th>Variety</th>
<th>Comments</th>
<th>Operators Signature</th>
<th>Client Signature</th>
</tr>
</thead>
<tbody>
<tr>
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The National Vine Accreditation Scheme for Vine Improvement Groups

Section 39: Appendix 1: Disinfestation of Grapevine Cuttings using Hot Water Treatment

Revision date: 24 January 2005

Purpose
To maximise the viability of dormant cuttings and to minimise the possibility of transferring diseases and pests to vineyards. Hot water treatment (HWT) at 50°C for 30 minutes is effective as a treatment for Phylloxera, Nematodes and some fungi and bacteria (e.g. Phaeoacremonium), as well as reducing the titre of infectious agents including Crown Gall and Phytoplasma.

Responsibility
Hot Water Treatment Operator

Disclaimer
The Australian Vine Improvement Association (AVIA) has formulated these protocols from currently available research articles and operational experience. Any person, for the following reasons cannot hold AVIA liable for any loss incurred as a result of the use of these protocols:

- AVIA cannot ensure individual compliance with the strict protocols required in effective and safe application of HWT
- The protocols are being continually updated
- The propagation material and the conditions under which it is grown and handled vary with districts and seasons
- Variation from the protocols in any way may cause mortality of the propagation material, and may not be effective against elimination of diseases and pests.

Persons using these protocols do so at their own risk.

Procedure

Hydration of cuttings
After taking dormant cuttings prevent dehydration by removing from the field and covering as soon as possible. Soak the bundles in clean water at ambient temperature for not more than sixteen hours. The material should be treated as soon as possible after hydration.

Hot water treatment
Raise the temperature of the bath to the upper limit allowable (51°C), and immerse the cuttings fully. Do not plunge the cuttings repeatedly, as this has an evaporative cooling effect, with excessive temperature losses. The temperature of the product should recover to the minimum allowable (49°C) within two to three minutes. The 30-minute treatment is timed from this point on. In the event that temperature recovery is not being achieved in this time, reduce the number of cuttings being processed in each batch.
The National Vine Accreditation Scheme for Vine Improvement Groups

Hot Water Tank Specifications

Constructed of inert material. The tank must be of sufficient capacity to allow a minimum of 0.5 litres of water per cutting dipped. For example a dip capable of treating 10,000 cuttings per batch would need a working capacity of 5,000 litres.

The tank should be insulated and fitted with a lid to reduce heat loss. An open mesh cage should be constructed of similar material to load the bundled cuttings into. The cage should fit inside the main tank with at least 300-mm clearance on all sides.

Agitation

Agitation of water in the heating tank is essential, firstly to eliminate the temperature differential within the tank, and secondly to aid the heat transfer process between the cuttings and the body of water. An electric pump with sufficient capacity to circulate the entire volume of the tank within 15 minutes is recommended. For example, a 5,000-litre tank would require circulation at a rate of 330-litres/minute.

Heating Method

The choice of heating method and fuel used will vary with the availability and cost of energy source, but a gas burner, electric element or steam are most commonly used. Heat must be applied uniformly, and at sufficient distance from the cuttings to prevent localised hot spots.

Temperature Control

Control of the tank temperature is critical, at 50°C with a tolerance of +/- 1°C. The greater the number of cuttings to volume of water used, the more difficult it becomes to maintain the one degree differential. Automatic or thermostatically controlled units should not be relied upon, and must be checked manually. These units typically sense the temperature at one location only, and may not be representative of the actual temperature.

The tank may be heated to a temperature of 60°C at the end of the day to allow a quick recovery the following day, and to disinfest any pathogens that may be left in the tank. The water must be kept clean. It is further recommended that the tanks are emptied at least every five days of continuous operation, more frequently if the cuttings have soil present. For less frequent use constant monitoring of the clean state of the water is recommended.

Temperature Measurement

The dipping process must be continuously monitored with an electronic data-logging device with a minimum of three channels. Temperature probes should be located at a depth of 100 mm from the base of the
tank, one within 100 mm of the surface, and one inserted into the centre of the cutting mass.

Data logging and printing at five-minute intervals will provide a permanent record of the temperatures applied to the material for each batch. It is necessary to print a summary of each batch to show the date, start and finish times, maximum, minimum and average temperatures. A timer with warning device is recommended to measure the dipping interval.

The hot water treatment supervisor records each treatment on a Hot Water Treatment Record sheet.

Calibration
At the beginning of each season, all temperature measuring equipment must be calibrated against a known reference point, (eg. certified thermometer). The calibration sheets must be kept and filed. The unit infrastructure including heat source, temperature controller, data logger and agitation pump must meet the requirements of Australian Standard AS2853.

Cool Down Tank
Immediately after the HWT process, the cuttings should be removed and placed for thirty minutes in a cool-down tank of equal size to the HWT tank. The water should be chlorinated and maintained between 5-7 ppm, and monitored to ensure the temperature remains below 20°C. Additional water will need to be added to lower the temperature as necessary. The cool-down tank may require agitation to ensure heat exchange from the centre of the cutting mass. As the cool-down tank is the last step in the HWT process, it is essential the water is kept clean. The cool-down tank must be emptied and cleaned daily, refilled with clean water and chlorinated.

Post-Treatment Handling
The cool-room process is just as important as the HWT in relation to the mortality of propagation material. Cuttings must be cool stored as soon as possible after HWT. Once treated, cuttings should be treated as sterile material, and appropriate precautions taken to prevent contamination. This includes practices such as,

- keeping soil away from treated material
- covering cuttings with clean covers (plastic, tarpaulin or similar) that have not been in contact with untreated cuttings.

Cuttings must be stored moist, but without the presence of free water in any packaging material. Cool storage at a temperature of 1-2°C and a high relative humidity is necessary to prevent dehydration. This may be achieved by sealing cuttings in plastic bags, and providing a 6mm hole for air exchange.
The National Vine Accreditation Scheme for Vine Improvement Groups

Ensure an even temperature distribution and airflow throughout the cool room by careful bin placement, and monitor the temperature at least daily. The temperature should be checked inside the cutting bundle. Wall mounted thermometers and thermostats only provide a guide to the actual storage conditions and must be checked manually. Record sheets of temperature checks must be kept and filed. As with the HWT, electronic data logging at multiple points and printing daily reports will provide a permanent record of the cool room conditions.

When the nursery is ready to propagate the cuttings, remove the material from the cool store and allow it to return to ambient temperature prior to grafting.

Documentation
Section 36 Form 19: Load Record Sheet
Section 37 Form 20: Batch Record Sheet
Section 38 Form 21: Hot Water Treatment Record Sheet
Chinasol dipping

Chinasol dipping may be used when cuttings are destined to be stored for one week or more.
A 0.05% solution of Chinasol is prepared in water in an inert (plastic, not metal) container. The solution should be earth filtered between successive batches of cuttings. The pH is maintained at 3.85 to 4.0. Soak hydrated scion wood cuttings in Chinasol for 5 to 7 hours, or rootstock cuttings in Chinasol for 12 to 15 hours.

Methyl bromide fumigation

When required, methyl bromide fumigation is to be carried out by a licensed contractor who is required to:

a) provide a written operating procedure for approval and
b) implement adequate safety procedures including all which are required by legislation.
### Virus and Virus-like diseases
- Corky bark virus
- Ajinashika's disease
- Nepoviruses (Grapevine Fanleaf, Tomato Ringspot, Arabis Mosaic, Joanne's Seyve virus, Grapevine Chrome Mosaic, Grapevine Bulgarian latent virus)

### Bacterial disease
- Bacterial necrosis: *Xylophilus ampelinus*
- Pierce's disease: *Xylella fastidiosa*

### Phytoplasma disease
- Flavescence doree

### Fungal diseases
- Black rot: *Guignardia bidwellii*
- Rotbrener: *Pseudopezicula tracheiphilla*
- Angular leaf scorch: *Mycosphaerella angulata*
- Rust: *Physopella ampelopsidis*
- Angular leaf scorch: *Pseudopezicula tetraspora*
- Downy mildew: *Lasnpora viticola (WA only)*

### Insect pests
- Grape phylloxera: *Daktulosphaira vitifolii*

### Nematode pests
- Dagger nematode: *Xiphinema index*
Section 42  Appendix 4: Important Non-Quarantinable Diseases and Pests that are nursery transmissible

Virus and virus-like diseases
Asteroid mosaic
Grapevine Fleck Virus
Grapevine Leafroll associated Viruses
Rugose Wood Complex

Rupestris Stem Pitting associated Virus
Vein Mosaic
Vein Necrosis
Yellow Speckle

Fungal Diseases
Armillaria root rot
Black root rot
Botryosphaeria rot
Botrytis rot
Fusarium root rot
Phaeoacremonium
Phomopsis
Phytophthora root rot
Powdery mildew
Pythium crown rot
Sclerotium crown rot
Verticillium Wilt

Armillaria mellea
Thielaviopsis basicola
Botryosphaeria ribis, B. obtusa, B. rhodina
Botrytis cinerea
Fusarium oxysporum, Fusarium spp.
Phaeoacremonium chlamydosporum, P. aleophilum
Phomopsis viticola
Phytophthora cinnamomi, Phytophthora spp.
Uncinula necator
Pythium ultimum, Pythium spp.
Sclerotium rolfsii
Verticillium dahliae

Bacterial disease
Crown gall

Agrobacterium tumefaciens

Nematodes
Citrus nematode
Rootknot nematodes
Meloidogyne javanica, M. incognita, M. hapla, M. arenaria

Insects
Bunch mite
Frosted scale
Garden weevil
Grape leaf blister mite
Grape vine scale
Light brown apple moth
Mealybugs

Brevipalpus californicus
Eulecanium pruinosum
Phlyctinus callosus
Colomerus vitis
Parthenolecanium persicae
Epiphyas postvittana
Pseudococcus longispinus, Pseudococcus spp.
AUSTRALIAN VINE IMPROVEMENT ASSOCIATION INC

- and -

(The Vine Improvement Group)

AGENCY LICENCE FOR VINE IMPROVEMENT GROUPS

RUSSELL KENNEDY
Solicitors

69 LaTrobe Street
Melbourne 3000
Tel: (03) 9609 1555
Fax: (03) 9609 1600
DX 494 Melbourne
Ref: 58/6228296m.100
The National Vine Accreditation Scheme for Vine Improvement Groups

THIS AGREEMENT is made on the date set out in Item 1 of the Schedule.

BETWEEN

AUSTRALIAN VINE IMPROVEMENT ASSOCIATION INC.
of PO Box 5057, Mildura Victoria, 3502
("AVIA") of the one part

AND

The parties set out and described in Item 2 of the schedule
the ("Agent") of the other part

WHEREAS

A. AVIA is a national organisation established to promote the AVIA Vine Accreditation Scheme to improve access to and to assure the quality of propagation material for the Australian Grape Industry.

B. The Agent is, or has, a vine improvement group with similar aims and purposes to AVIA, and which has agreed to cooperate with AVIA in promoting those aims and purposes.

C. AVIA wishes to appoint the Agent as its agent for the issue of Accredited Nursery Licences as part of the AVIA Vine Accredited Scheme.

D. The parties have agreed to cooperate and consult in respect of these matters and other matters of mutual interest and concern and have, accordingly, agreed to enter into this Agreement.
NOW IT IS AGREED:

DEFINITIONS:

1. In this Agreement, unless the context otherwise requires:
   "Scheme" means the AVIA Vine Accreditation Scheme comprised in the Standard Procedures Manual, Parts 1 and 2, issued by AVIA to the Agent as amended from time to time (and includes the issue of Nursery Licences pursuant to this Agreement).
   "Financial Year" means a year commencing on 1 July.
   "Logo" means the AVIA trade name and device, including the certification symbol used in connection with the Scheme.
   "Nursery Licence" means a licence in the form attached, or otherwise as approved by AVIA from time to time.
   "The Territory" means the territory set out and described in Item 3 of the Schedule.
   "Vine Improvement Group" means a vine improvement group to exercise the powers and carry out the obligations as set out in the Scheme.

APPOINTMENT OF VINE IMPROVEMENT GROUP

2. AVIA appoints the Agent as a Vine Improvement Group for the Territory. The Agent agrees to act as a Vine Improvement Group for the Territory in accordance with the Scheme and shall, subject to the terms of this Agreement, exercise all powers and carry out all functions and obligations of a Vine Improvement Group under the Scheme.

AGENCY TO ISSUE NURSERY LICENCES

3. 3.1
   AVIA appoints the Agent as its agent, on a non-exclusive basis to issue Nursery Licences in the Territory in accordance with the Scheme.
   
   3.2
   The Agent may issue and enter into a Nursery Licence on behalf of AVIA, and shall promptly send to AVIA a copy of all Nursery Licences issued by the Agent.
OBLIGATIONS

4

4.1
The Agent agrees to comply with the terms and conditions of the Scheme, as amended from time to time by AVIA and notified to the Agent.

4.2
The parties agree to cooperate fully and consult with each other, and the Agent agrees that it shall:

4.2.1
consult regularly with AVIA and provide such oral or written reports as AVIA may reasonably require from time to time in connection with the Scheme;

4.2.2
provide to AVIA, upon request, copies of all minutes of meetings of the Agent in relation to its role as a Vine Improvement Group;

4.2.3
observe and comply with all reasonable directions, requirements, terms or conditions of AVIA in respect of the Scheme;

4.2.4
provide to AVIA at such times as AVIA may reasonably require, and in any event, not less than annually, audited statements and accounts in respect of finances including receipts and expenses in relation to the Scheme and its role as a Vine Improvement Group;

4.2.5
observe and comply with all applicable statutes, regulations or other legislative requirements of any government or applicable statutory authority.

INDEMNITY

5

The parties agree to indemnify and hold harmless and defend each other against any and all claims, suits, losses, damages, costs and other liabilities resulting from or arising out of the other's activities, including without limitation, any breach by the other party of the terms of this Agreement.

INSURANCE

6

Agent to arrange insurance as agreed.
USE OF LOGO

For the purpose of this Agreement, AVIA hereby licenses the Agent to use the Logo in the Territory in connection with the Scheme.

In relation to the use of the Logo, the Agent:

shall not do anything which would damage or bring disrepute to AVIA, its reputation or the Logo;

agrees that it shall use the Logo only in accordance with the policies, directions and guidelines issues by AVIA from time to time in connection with the Scheme;

acknowledges that all rights in the Logo, including goodwill, are reserved to AVIA and that the Agent shall not acquire any rights to the Logo other than pursuant to this Agreement;

agrees to provide reasonable assistance to AVIA, as requested, to protect the Logo and shall notify AVIA upon becoming aware of any unlawful or invalid use of the Logo by any other person; and

agrees that AVIA may otherwise deal with its rights and interests in the Logo for any other purposes.

ACCESS

For the purposes of monitoring compliance by the Agent of the terms of this Agreement, AVIA or its authorised representative shall have the right to enter any premises owned, leased or occupied by the Agent during normal business hours upon prior reasonable notice, and examine all records, documents, plant, material and other information relating to the transactions contemplated under this Agreement.
The National Vine Accreditation Scheme for Vine Improvement Groups

TERM OF AGREEMENT

10
This Agreement shall continue until terminated by either party giving not less than three (3) calendar months' notice.

11
In the event that a party breaches any term or condition of this Agreement, the other party may, after giving notice of the breach and allowing a period of fourteen (14) days during which the other party has failed to remedy or rectify the breach, by written notice, terminate this Agreement immediately.

12
In the event of a party becoming insolvent or unable to pay its debts, or has a liquidator or receiver appointed to it, the other party may terminate this Agreement by written notice.

CONFLICT RESOLUTION

13
In the event of any dispute under this Agreement, the parties agree to enter into bona fide negotiations to attempt to resolve such dispute or remedy any breach.

14
Without prejudice to any other rights or remedies, and subject to the provisions of clauses 10, 11 and 12 above, any dispute between the parties, which has not been resolved within fourteen (14) days, shall be referred to arbitration pursuant to the provisions of the Commercial Arbitration Act (Victoria) or any modification or re-enactment, and the provisions of that Act shall apply in relation to the dispute.

GENERAL

15
No waiver of any breach shall be deemed to constitute a waiver or consent to any subsequent or continuing breach.

16
Nothing in this Agreement shall be deemed to constitute an agency or a partnership or joint venture between the parties.

17
All notices under this Agreement shall be given in writing and delivered or sent by prepaid post to the party to the address set out in this Agreement or such other address as notified in writing from time to time, and if sent by prepaid post, shall, in the absence of proof to the contrary, be deemed to have been delivered on the third day after posting.
The National Vine Accreditation Scheme for Vine Improvement Groups

18

This Agreement is made in accordance with the laws of the State of Victoria and the parties agree to submit to the jurisdiction of the Courts of that State.

19

After termination of this Agreement, the Agent shall not use the Logo for any purposes.

20

The Agent agrees that it shall not, without the prior written consent of AVIA, issue any public notices or statements or make any public comment relating to the Scheme. This clause shall not apply to bona fide promotional statements or advertising in relation to the Scheme which is consistent with the purposes of this Agreement.

21

Any act, matter or thing to be done by a party may be made by the President, Secretary, or Chief Executive Officer of the party, if authorised to do so by a resolution of that party.

22

The Agent may not subcontract any work under this Agreement without the prior written consent of AVIA.
The National Vine Accreditation Scheme for Vine Improvement Groups

**SCHEDULE**

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The National Vine Accreditation Scheme for Vine Improvement Groups

EXECUTED as an Agreement.

SIGNED SEALED AND DELIVERED on )
behalf of AUSTRALIAN VINE )
IMPROVEMENT ASSOCIATION INC. )
by )
in the presence of:

Witness:..............................................................

SIGNED SEALED AND DELIVERED on )
behalf of )
by )
in the presence of:

Witness:..............................................................
## Glossary of Terms and Abbreviations

<table>
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<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Accredited</td>
<td>A Vine Improvement Group or Nursery that has been audited to show compliance with the requirements of the AVIA National Vine Accreditation Scheme.</td>
</tr>
<tr>
<td>Certified</td>
<td>Grapevine propagation material with an audit trail, that meets the specifications of the AVIA National Vine Accreditation Scheme.</td>
</tr>
<tr>
<td>Clone</td>
<td>Group of vines of same genotype and descended vegetatively from a common ancestor vine.</td>
</tr>
<tr>
<td>ELISA</td>
<td>Virus detection technique using Enzyme Linked Immunosorbsent Assay</td>
</tr>
<tr>
<td>Germplasm</td>
<td>Varietal-clonal plantings of known and certified origin, maintained by Departments of Agriculture, CSIRO and Vine Improvement Groups. Sometimes called ‘Mother Vines’. Typically held as 3 vines of each variety/clone.</td>
</tr>
<tr>
<td>Improved</td>
<td>Vine material selected, bred or imported shown by trials to be superior in some significant aspect(s) to common, older clones or benchmark clones.</td>
</tr>
<tr>
<td>Indicator vine</td>
<td>A variety or clone showing obvious symptoms of a virus, used to detect the presence of a the virus.</td>
</tr>
<tr>
<td>Mother vines</td>
<td>Part of germplasm collection.</td>
</tr>
<tr>
<td>Non-quarantinable</td>
<td>Diseases endemic in an area: not specified in quarantine protocols-listed in Appendix 2.</td>
</tr>
<tr>
<td>disease</td>
<td>Nuclear Material of superior virus status selected and propagated in isolation.</td>
</tr>
<tr>
<td>PCR</td>
<td>Virus detection method using Polymerase Chain Reaction</td>
</tr>
<tr>
<td>Pre-Multiplication</td>
<td>First generation plantings from Germplasm Material used for the establishment of Certified Material. Typically in rows of 40 vines per variety/clone.</td>
</tr>
<tr>
<td>Material</td>
<td></td>
</tr>
<tr>
<td>Propagule</td>
<td>Vegetative plant part used for propagation, eg cutting, meristem cells</td>
</tr>
</tbody>
</table>
The National Vine Accreditation Scheme for Vine Improvement Groups

Quarantinable disease
Specified disease confined in distribution and excluded from vine
Listed in Appendix 1.

Registered Source Area, or Certified Material
Vineyard planting (also called RMB) of known and controlled vines
used for the supply of cuttings for propagation. Includes Class A
vineyards: Established directly from pre-multiplication material under
control of the Department. of Agriculture and the Vine Improvement
Group, and maintained.
Class B vineyards: Second generation plantings using material from a
Class A vineyard.

RMB
Registered multiplication block (vine source area).
Section 45 — External Documents And References


Nicholas, P.R. and Cirami, R.M. “Primary Industries South Australia Grapevine Germplasm Collections” PISA 1995

Nicholas, P.R. “South Australian Vine Improvement Scheme Registered Source Areas for Planting Material - 1995” PISA 1995

Nicholas, P.R. “The effects of vine rootstocks on grape yield and quality in a warm high yielding irrigated area” PIRSA


The National Vine Accreditation Scheme for Vine Improvement Groups

Revision date: 21 February 2000

Section 46. Document Review and Authorisation Approval

Document number:

Document title:

Proposed change:

Reason for change:

Proposed by: Date:

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<tr>
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<tr>
<td>AVIA Vice Chairman</td>
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<tr>
<td>Department of Agriculture Representative</td>
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Decision to:
Authorise change ( )
Amend then change ( )
Reject ( )

Signed: Date

Change to master copy implemented ( )
Distributed to manual holders ( )

Signed: Date
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Section 2 - Introduction

The AVIA Vine Accreditation Scheme, outlined in the discussion paper "Australian Quality Assurance for Vine Propagation," is administered by the Australian Vine Improvement Association Inc. (AVIA).

AVIA has developed a two stage approach to quality assurance in the production of vine planting material through its publication of a procedures manual and a guide for vine propagation -

This describes mandatory procedures and controls for quality assurance activities supervised by AVIA and its associated vine improvement groups and affiliated agencies. The volume is a procedures manual, which forms part of the core documentation for quality assurance activities used by vine improvement societies, associations and groups in their production and management.

2. "Guidelines for Nurseries for National Vine Accreditation Scheme Part 2 - Propagation of Vine Planting Material"
This volume provides guidelines for nurseries wishing to propagate vine planting material to standards set by AVIA. The volume is a guide and a standard for the types of procedures and controls which vine nurseries will be required to adopt, in order to label vine planting material produced by the nursery under the AVIA scheme. Nurseries should adopt their own individual standard procedures manuals within this framework.

Definitions

"Accredited" refers to a body, such as a vine improvement group or a nursery, who has agreed to conduct quality assurance systems and methods of operations in accordance with AVIA guidelines for the production of vine planting material.

"Certified" refers to planting material produced under the AVIA Vine Accreditation Scheme, and which has been produced by an accredited body.

"must", "will" or "shall" indicates a mandatory procedure.

"should" or "may" indicates a recommended procedure.
Warning and Disclaimer

The AVIA Vine Accreditation Scheme is strictly limited to the act of endorsing a body or material as meeting the conditions of the Scheme. Except to the extent expressly set out in the AVIA Vine Accreditation Scheme documents, AVIA does not test or review any body or plant material.

AVIA takes no responsibility for any conditions or circumstances beyond its control, or circumstances affecting plant materials, which have not been individually tested or approved by AVIA, other than required by law or as expressly set out in the AVIA Vine Accreditation Scheme.

No conditions or warranties, express or implied, of quality or fitness for any particular purpose or of merchantability is given by AVIA in respect of certified plant material other than as required by law, or as expressly set out in the conditions of the AVIA Vine Accreditation Scheme.

AVIA takes no responsibility for the conduct of any accredited body. Accreditation is limited strictly to the endorsement of bodies who agree to conduct their operations under the requirements of the AVIA Vine Accreditation Scheme.

Policy

AVIA’s policy is to supply the best possible vine planting material to the Australian Viticultural industry. Accredited nurseries must have a documented policy consistent with this AVIA policy. AVIA recognises that quality assurance should be promoted throughout the Australian Viticultural industry.

Administration

The AVIA Vine Accreditation Scheme is conducted by AVIA, or through its appointed contractors.
Acknowledgments
This information was published by AVIA as part of the AVIA Vine Accreditation Scheme.
It is complemented by Part One, "Standard Operating Procedures - Source Area Maintenance and Vine Multiplication."
The publication was produced under the auspices of The National Vine Accreditation Scheme steering group, with the following contributors:

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Documentation
Scholfield Robinson Horticultural Services Pty. Ltd. and Weeks Consulting Pty. Ltd., were contracted by AVIA to collate and format the standard operating
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procedures and guidelines for this scheme. This material has been developed and published by AVIA.
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Section 3 - Quality system

It is a requirement, for a nursery to be accredited to supply AVIA certified planting material, that the nursery has in place a formal quality assurance system approved and audited by AVIA or a quality auditor appointed by AVIA.

The quality system must comprise written procedures which address expectations of customers and control of processes and products.

The system will:

1. Conform to the guidelines listed herein.
3. Meet the requirements of the Nursery Industry Accreditation Scheme (NIASA).

Nurseries must agree to have their quality systems audited and allow inspections of their premises, operations and records to meet these criteria.

AVIA may grant provisional and/or temporary accreditation to a nursery that is actively developing a suitable quality assurance system.

This manual contains specific guidelines, especially on technical matters relating to vine planting material, which are consistent with AS/NZS ISO 9002 and should be read in that context.

However these guidelines are not comprehensive and do not detail all the elements of the required quality system.

The AS/ISO 9002 requirements for documentation apply.

The requirements of the NIASA scheme are not duplicated in full here. However elements that are particularly relevant to viticulture are included.

Management Responsibility

Nurseries need to develop, within these guidelines, their own procedures and records that specifically suit their own particular activities, and be responsible for the implementation of their quality system.

Each nursery quality system will define who is responsible for quality related functions and will ensure the allocation of adequate personnel resources. Specifically this will include a quality representative or officer who will implement and monitor quality activities and report on their effectiveness to management.

Management will ensure that adequate skills and expertise are available and will maintain an effective training program to support this requirement. Such training and involvement in quality assurance activities will involve all persons in the nursery.
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Section 4 - Contracts

Nurseries must plan activities and keep records of planning. These must include all production and commercial activities including terms and conditions of trade. Both written and common law contracts must be reviewed to ensure the nursery has the capability to supply the products and that the products do meet customer expectations. This will include such documented procedures as:

- Securing orders for planting material (vine rootling and graftlings)
- Acquiring suitable propagules from vine improvement groups
- Contingency plans for supply not meeting demand
- Warranties expressed or implied
- Delivery times
- Costs and charges, terms of payment
- Provision of information such as clonal identification, disease status encumbrances from quarantine restrictions, plant breeders rights, etc.
- Use of “AVIA Certified” endorsement

Accreditation by AVIA does not limit the commercial scope of the nursery nor preclude the propagation of vine material not emanating from AVIA controlled germplasm. However, planting material derived from non-certified propagules or grown under conditions not accredited by AVIA cannot be sold as AVIA certified, nor may the nursery imply that such material is certified. Adequate precautions must be taken to separate certified material from non-certified material and to prevent any doubt about the status of the material.

Customer Expectations

Nurseries must have a procedure to identify, and keep updated knowledge of, the requirements and expectations of their customers. Liaison with AVIA, viticultural industry bodies, consumer (including processors of grapes) organisations and growers is essential. Where growers seek information about vine identity and characteristics, disease status, phenotype potential and apparent suitability, nurseries have a duty of care to provide information as is available and to ensure such information is factual. A formal “customer response” or “customer grievance” procedure is needed. All responses from customers relating to quality matters must be recorded, reviewed, appropriate action taken and the customer advised accordingly. Wherever possible review will lead to some corrective action to avoid recurrences of the cause of customer complaints.

Unresolved disputation regarding vine quality must be referred to AVIA.
Section 5 - Product Specification

Nurseries must document specifications of vine planting material produced and ensure that all rootlings and graftlings meet these specifications. Where possible specifications must include information such as:

Identity
- Genus, species, variety and clone
- Origin of planting material (accession number, cuttings source)
- For grafted vines details of both the scion and the rootstock shall be specified

Description
- Growth habit, vigour
- Disease tolerance
- Potential yield characteristics
- Fruit quality

Disease status
- Quarantine history
- Virus indexed and results of index tests
- Other tests and results
  (E.g., Germplasm vines of this clone are from a designated disease free area, and have tested negative for viruses. Source area vines have been inspected for, and found free of, symptoms of vine yellows and phomopsis.)

Vine health
- At the time of delivery to customers vine rootlings and graftlings will be alive, healthy, free of any disease symptoms, pests and without pot bound roots.

Vine description
Plants delivered to customers will conform to the following minimum standards:
- Dormant rootling; will have at least one fully matured shoot with a minimum of three prominent buds and at least three roots evenly distributed at the basal node.
- Dormant grafted vine; will be as above and also have a visually completed union, strong enough to withstand its own horizontal weight.
- Green container grown vine; must show active healthy growth.
- Autumn budded field vine; must be a well-matured rootling and have an evenly callused bud insertion with no evidence of shooting. The bud must be alive.
- Broken stocks or vines damaged during lifting must be discarded.
Certification

AVIA certification status:
- **Class A** Blue label: Grown from AVIA class A propagule in an accredited nursery.
- **Class B** Yellow label: Grown from AVIA class B propagule in an accredited nursery.
- **Class C** Orange label: Grown from AVIA class C propagule in an accredited nursery.

(Note that Class A grafted vines comprise both class A scion and class A rootstock. A mix of class A and class B produces, in an accredited nursery, a class B graftling).

Label

Certified vines of all forms must be labeled accurately, with labels coloured as above and showing:

Front
- Scion Variety, Clone and source
- Rootstock Variety, Clone and source (if applicable)
- Vine batch number

Reverse
- Nursery name
- Nursery address
- Nursery phone/fax number
- “AVIA certified vine from accredited nursery”
- Nursery Registration Number
Section 6 - Process Planning

Processes in the nursery must be planned in advance and appropriate procedures devised to ensure sound operations and to verify the conduct of those operations. Planning documents must include a "Process Flow Chart" and a "Hazard Analysis Critical Control Point table."

Examples of each are included overleaf, and in Section 7.
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**Vine Nursery Process Flow Chart**

Chart 1

Accept orders for rootlings and graftedlings  
Place orders with vine improvement group for cuttings  
Collect cuttings  

Store cuttings  

Prepare soil, potting media  

- Plant cuttings  
  - Scion  
  - Rootstock  
  - Field graft  

- Bench graft  
- Mist propagate  
- Tissue culture  

- Irrigate  
- Apply nutrients  
- Disease control  
- Pest control  
- Maintain environment  
- Lift rootlings  

- Own rooted vine  
- Field graft vine  
- Bench graft vine  

- Package, label  
- Deliver  
- Grower feedback
**Section 7 - Hazards Analysis Critical Control Point**

The hazards analysis critical control point (HACCP) table is used by nursery management and technical staff to review operations that affect the quality of grapevine planting material propagated in the nursery. Actual or perceived hazards, things that could go wrong and reduce quality, are aligned with the relevant process and the critical control point of that process. Critical processes are designed to avoid the hazard and prevent its manifestation. Monitoring methods are devised to verify that the hazard has been avoided or to identify when the hazard becomes a reality. Contingency actions in case of deviation from correct procedure or correct specification must be planned and documented.

**Table 1**

<table>
<thead>
<tr>
<th>Process</th>
<th>Hazard</th>
<th>Critical Control</th>
<th>Monitor Method</th>
<th>Action if Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition of superior clone</td>
<td>Inferior or diseased germplasm</td>
<td>Initial selection characterisation</td>
<td>Confirm ID, disease testing</td>
<td>Use alternative source of supply</td>
</tr>
<tr>
<td>Order and supply</td>
<td>Supply not meeting demand</td>
<td>Accurate order and forecast</td>
<td>Reconcile numbers</td>
<td>Reallocate</td>
</tr>
<tr>
<td>Grafting</td>
<td>Incomplete or infected graft union</td>
<td>Correct grafting technique</td>
<td>Inspection</td>
<td>Discard inferior vines. Retrain grafters</td>
</tr>
<tr>
<td>Grading</td>
<td>Out of spec. in terms of length, diam., buds,</td>
<td>Correct grading and selection</td>
<td>On line inspections</td>
<td>Rework faulty batches</td>
</tr>
<tr>
<td></td>
<td>number of buds, roots, graft union</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease control</td>
<td>Diseased vine plant</td>
<td>Exclude vectors, local quarantine, Spray program, Clean water, sterile soil and potting mix</td>
<td>Vine plants monitoring. Test water and soil</td>
<td>Destroy infected vines. Review, upgrade spray procedures. Treat water supply, treat soil</td>
</tr>
<tr>
<td>Plant nutrition and maintenance</td>
<td>Non viable vine</td>
<td>Nutrition irrigation, care of vines</td>
<td>Check method, inspect vines</td>
<td>Call out inferior vines. Review, upgrade procedures</td>
</tr>
<tr>
<td>Packing</td>
<td>Wrong identity Inadequate packaging Damaged vines</td>
<td>Accurate labels Correct packaging Correct method</td>
<td>On line check Upgrade Final check</td>
<td>Re-label, reject if in doubt. Rework, discard</td>
</tr>
<tr>
<td>Store</td>
<td>Buds freeze or shoot</td>
<td>Right temperature</td>
<td>Check temperature</td>
<td>Adjust cool room</td>
</tr>
<tr>
<td>Despatch</td>
<td>Contents wrong, Address wrong, Missing label</td>
<td>Use accurate information Proper method at packing</td>
<td>Check despatches against orders. Pre despatch check</td>
<td>Match contents to order &amp; address Re-label, if identity is doubtful, discard</td>
</tr>
<tr>
<td>Planting</td>
<td>Nematodes</td>
<td>Pre-plant fumigation/rotation</td>
<td>Test soil</td>
<td>Hot water treatment</td>
</tr>
</tbody>
</table>
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Section 8 - Standard Operating Procedures
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Nurseries must establish and document standard procedures to ensure the consistent and reliable performance of critical processes. These “Procedures” must address:

- purpose of the procedure,
- any technical terms, trade names, cross references,
- who is responsible (and authorised),
- how the job must be done (especially amounts, volumes, rates, speeds, quantities),
- special conditions (do this if....., continue until.......; check effectiveness by.....),
- relevant safety precautions (e.g., protective clothing when spraying).

Typical procedures are listed below together with some aspects requiring particular attention. Although the list may not apply to all nurseries, nor does it claim to be comprehensive, it does provide a guide to activities that need attention to achieve the required control of processes.

Acquisition of planting material.
Cuttings, or green tissue for mist propagation and tissue culture, must derive from AVIA certified material (as defined in “Standard procedures manual for National Vine Accreditation Scheme - Part 1, Source area maintenance and vine multiplication”) for the production of certified vine planting material.

Any sourcing of cuttings from interstate or across boundaries of designated vine districts must be done consistent with State regulations.

Nurseries should ascertain from the Vine Improvement supplier details of the source and known disease status of cuttings. Even within the Class A category there is a range of acceptable degrees of tested disease freedom.

As near as practicable, cuttings must be taken from vines free of symptoms of disease, especially powdery mildew, downy mildew, crown gall, phomopsis or vine yellows. Planting material must be protected from subsequent contamination by plant pathogens and from loss of viability.

Local quarantine facilities.
Nurseries using any propagules not from certified disease free sources, or from sources of unknown disease status, must prevent cross contamination of certified material. This may require establishing isolated quarantine areas within the nursery, barrier walls or ‘rooms’ within the nursery.

Field growing of cuttings
Soil for growing rootlings or rootstocks for field grafting must be tested for pests and pathogens notably nematodes. Where such pests or pathogens are detected, the soil must be fumigated (e.g., with methyl bromide or equivalent) before use. A program of land use rotation including a bare fallow stage is needed.
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Propagating and growing media.
Media used must be formulated from components of known disease free status and pathogens destroyed by, pasteurisation at 60°C for 30 minutes, fumigation or solarisation.
Media components should be sourced from approved suppliers. The media must be stored securely and covered to avoid infestation by weed seeds and plant pathogens. Potting mixes or propagating containers such as pots must not be reused without a satisfactory disinfection treatment.

Irrigation water
Water supplies need to be tested for the presence of pathogens. Where water borne pathogens present a potential risk an appropriate form of water treatment must be practised (e.g., chlorination, bromination, microfiltration, ozonisation). Where the presence of weed seeds presents a hazard, water must be filtered.

Bench grafting
Procedures need to ensure correct identification of rootstock and scion, compatibility, effective physical contact, hygiene to avoid infection of the graft union, handling to retain viability.

Striking cuttings
Procedures should ensure maximum strike, promotion of vigour and thus subsequent viability, prevention of infection and clear identification.

Field grafting
In addition to the safeguards listed for bench grafting and for striking, the procedure for field grafting needs to specify methods for selecting buds, cutting buds from budwood, conserving budwood, and conditions (e.g., critical temperatures) for the grafting operation.

Tissue culture
Source tissue (for nodal, meristem or fragmented shoot apex cultures) must be from AVIA germplasm or certified material. Nodal culture material requires the ‘disease status’ precautions applicable to hardwood cuttings (Section 5) because this method does not eliminate disease. Vines from shoot apex cultures may not be phenotypically true to type so should be inspected for trueness to type before despatching to customers. Adequate procedures to prevent infection of cultures are essential.

Mist propagation
Greenwood cuttings with two buds must be taken from certified (A or B) plantings.

Nutrition
Nutritional requirements of nursery stock must be met adequately to ensure the maximum practical viability of planting material. Over fertilisation, with risks of salinisation, must be avoided.
Pest control
Weeds and weed propagules must be excluded from the nursery area and from growth media. An effective program, preferably based on the principles of integrated pest management, to control insect and other invertebrate pests is required. Pesticides must be stored and handled safely and consistent with government regulations.
Dormant field grown vines must be hot water treated before sale to ensure that they are free of insect pests and nematodes.

Disease control
Plant diseases must be controlled. Where possible this should be by exclusion, including using disease free propagules and media, local quarantine, aseptic handling techniques. Ubiquitous diseases (e.g., downy mildew, powdery mildew) require an effective monitoring and spray program.
Nurseries must observe State quarantine requirements regarding phylloxera, dagger nematode, downy mildew and any other gazetted pest or disease.
Bare rooted vines must be treated with hot water before despatch to customers. Hold in water at 55°C for 5 minutes\(^1\), then immediately immerse in clean water at ambient temperature for 20 to 30 minutes.

Control of nursery environment
Procedures must be established for:
- Exclusion of contaminant organisms (e.g., footbaths of copper compounds at entrances to propagation and in-ground areas, and mesh to exclude insect vectors from glasshouses.)
- Separating potentially contaminated media, containers, tools, work areas from fresh planting material (including the use of physical barriers)
- Cleaning and disinfecting tools, benches and work areas, especially between different varieties, clones and batches and at the end of a day (e.g., use chlorinated water at 500 ppm chlorine)
- Removing waste, rubbish, discarded plant material, etc. securely to avoid cross contamination
- Provision of adequate drainage and ventilation
- Control of surface water movement
- Control of relative humidity, temperature, minimisation of wind, dust, provision of suitable light.

Control of procedures
Operating procedures shall be planned, authorised, documented and implemented. These will include techniques and protocols for hygiene. Proper implementation shall be verified. Records of operations shall be maintained, including those relating to the use of chemicals.

\(^1\) Plant Health Regulations: Vegetation and Vine Diseases #6407/1958
Storage and packaging.
Propagules, rootlings and graftlings will be stored in a manner which:
a) Maintains vigour and viability
b) Prevents infection or infestation by diseases and pests
c) Ensures reliability regarding identity and quality rating.
Cuttings should be treated with Chinosol® or similar before storage. Prepare a 0.5% aqueous solution of Chinosol® in an inert container, maintain at pH 3.85 to 4.0 and filter the solution after each batch of cuttings. Cuttings are first hydrated by soaking them in clean water, then are immersed in Chinosol® for the following times:
• Scion wood for 5 to 7 hours
• Rootstocks for 12 to 15 hours.
Container grown vines must be held in a free draining area to reduce the possibility of root rots. Dormant vines must be heat treated before sale.
Rootlings and graftlings shall be presented for delivery in healthy condition, free of root binding and ready to plant. Packaging must ensure protection during storage and transport, yet not inhibit growth after planting.

Product identification
Accurate identification of planting material and records to enable an audit trace from origin to sale are essential.
The procedure for identification of vines needs to comprise a dual system with:
a) Paper (or electronic) records identifying the number and location (e.g., by row numbers, map reference, etc.)
b) Physical labels attached to bundles of cuttings, to rootlings, signs at row ends in the nursery, etc. to verify identity.
Vine rootlings and graftlings at the time of delivery to customers will be clearly and accurately labeled, including showing the level of certification, as detailed under “product specifications.”
Section 9 - Quality Control Procedures

Nurseries must establish and document procedures to check that vine material conforms to specification from acquisition through processing to final supply to customers. Where this checking involves testing, the test procedures must be documented and the test status of the vine material must be recorded. Some typical activities which control quality are listed below. How processes are monitored and product quality is controlled, together with suitable formats for records, will vary with individual nurseries, so guidelines only are given here. Data must be checked before proceeding to the next process or despatch of vines to customers. All records must be reviewed periodically to verify that the system is working and/or to identify ways to improve the system.

Purchasing

Materials and services for production, and the suppliers and contractors from whom these are purchased need to be evaluated then specified in advance of routine operations. Formal procedures for purchasing, and for the checking of incoming materials and services, need to be established and records kept. This may be done by the nursery conducting its own checks (e.g., pathogen testing of planting material) or by relying on a “guarantee” from a supplier with its own quality system (e.g., approved media supplier).

Vine material

The nursery must verify that it receives the vine propagating material it acquires, as detailed in its’ specifications and operating procedures. Verification shall be by documentary evidence from an accredited supplier, (e.g., certified cuttings from an accredited Vine Improvement group). Evidence of disease status should be sought and filed, for example records of:

- Virus indexing
- ELISA testing
- Endonuclease-DNA fragment typing

Process monitoring

A system to ensure each process is properly completed and that the vine material at that stage is alive, healthy and true to type must be developed and documented. Data must be recorded.

Final inspection and clearance

Nurseries must have a procedure to check that vine rootlings and graftlings conform to specifications before they are despatched to customers. Where large numbers of similar vines are involved a sampling procedure is needed. Final clearance will involve inspection of vines and verification from records of vine treatment. The test status of vines must be established clearly and documented.
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Calibrations
Measuring instruments that have a significant effect on quality, (e.g., thermometers used to measure the temperature of the hot water dip) must be calibrated to ensure that the conditions provided and quantities used or measured are as intended. A record of calibrations should be maintained.

Sampling
Where inspection of every single cutting or plant is impractical samples may be taken and assumed to represent the whole. The whole population must be defined in terms of a homogeneous batch or lot and a sampling procedure must be detailed that ensures samples are statistically representative.

Control of non-conformities
A formal procedure is needed to control vines that are rejected at final inspection and verification. Non-conforming vines must be isolated from approved vines and handled separately.
Appropriate handling of a rejected batch of vines includes:
a) Reworking, e.g., regrading to cull out inferior or non viable plants
b) Regrading to a lower quality level, e.g., vines whose classification of origin cannot be verified may be down graded from Class A or B and sold as non-certified material.
c) Destruction, e.g., vine identity cannot be established, vine is diseased.
Section 10 - Records and Documentation

It is a condition of accreditation that each nursery documents its vine planting material specifications, operating procedures and quality control procedures. These documents must be authorised by a responsible person and adhered to. Amendments and/or changes must be similarly authorised and the status (i.e., which is the current document) shown clearly. Such documents are conveniently assembled together in a quality manual, or a series of manuals (quality, operational procedures, quality procedures, etc.).

Operations, details of vine origin and treatment, results of tests and inspection and records of quantities must be recorded and available for audit.

Nurseries need to plan a list of appropriate records, design and use record forms, either in hard copy or computer data, keep such records and review them periodically. Typically, records maintained would include those listed below. This list is neither mandatory nor exhaustive; it gives an indication of the types of records the nursery may decide it needs to conform with requirements for AVIA accreditation.

1) Register of disease status and characteristics of source vine planting material
   (variety/clone/origin/virus indexing data/DNA, serology test data/phenotype)

2) Record of acquisition of vine planting material
   (variety/clone/origin/class of cuttings/date number acquired)

3) Supplier list
   (material specification/approved supplier/agreed price/consignments received)

4) Nursery stock
   (variety/clone/batch number/location in nursery/numbers/date planted, grafted)

5) Operations record or diary
   (variety/nursery plot/operation/date/quantities of water, fertiliser, spray)

6) Test results - Soil, media, water, etc.
   (analysis of irrigation water/media source, date, pH, salinity, pathogen count, weeds)

7) Plant monitoring
   (variety/nursery plot/number of pests/incidence of disease/growth/health, etc.)

8) Calibration record
   (instrument or equipment/date/actual measure/standard/OK or reject)

9) Finished vine inspection/pre-sale inspection
   (variety/clone(s)/nursery plot/date/batch number/verify operations/size, number of buds, number of roots, vine health and vigour, disease symptoms, label, OK or reject)

10) List of customers and orders
    (customer name/varieties and clones ordered/quantities/date and batches supplied)
Section 11 - External Documents and References

Key references, copies of regulations, technical source material that are not written by nursery staff but which are relevant to the management of the nursery should be listed and held in a controlled, accessible location. Examples of such documents include:

Ed. Murphy, P.D. "National register of grapevine varieties and clones" Australian Vine Improvement Association, Irymple 1992


Standards Australia, "AS/NZS ISO 9002: (1994) - Quality systems - Model for quality assurance in production, installation and servicing."


AVIA Vine Accreditation Scheme
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