Australian Government
Wine Australia

Tassie Viticulture Consulting

Australian Germplasm Register Project



Report to; **Wine Australia**

Collated by; **Libby Tassie**

Output; ***National Register of Grapevine Varieties, Clones and Selections.***

Date; **30th November 2019**.

CONTENTS

Introduction 3
1.0 Collections 3
2.0 Accession Attributes; data collected 7
3.0 Potential Benefits of the register 8
4.0 Issues to be addressed 8
5.0 Recommendations 10
6.0 References 10
Appendices
1. Collections / holders of germplasm contacted but not included 11
2. Instructions sent to Collection Holders 12

Attachment

Excel File accompanying this document;

1. Combined all collections**; Australian National Register of Grapevine Varieties, Clones and Selections**

Acknowledgements:

The author acknowledges the valuable input from all collection holders, and discussions along the way. Thanks also to Prue Henschke for the insightful contributions.

Introduction.

This project aimed to provide an up to date comprehensive register of grapevine planting material present and available in Australia. The list includes wine grapes, rootstocks and multi- purpose varieties, clones and selections. The data in this version of the register still requires further updating, additions and refinement. National protocols for varietal and clonal/selection naming, and reporting of imposed treatments for high health and trueness to type remain to be determined. Thus, updates will need to be done both by the holders of the collections of their own information, and after national agreement on naming protocols and identifiers. The information is collected as confidential information, and will potentially have different layers of accessibility according to user status. Public distribution of the information will not occur until further consultation with owners of collections. Feedback from some owners indicated that they require more time or resources to complete the data base.

Collections are held primarily by Vine Improvement (VI) organisations and nurseries, or private companies and, in only one instance (Western Australia), a state department. This represents a significant change from germplasm holdings of 20 years ago, with a significant decline in government involvement and support. The base line of collections was taken from the previous work of McMichael et al, 2013, an update of the 2006 version of the National Register of Grapevine Varieties and Clones by Phil Nicholas. Since then, another government managed collection in NSW was removed, and the Queensland one, mothballed at that time, has been further reduced to only rootstock material. Only the Western Australian collection remains on government land. The extensive collections of CSIRO and SARDI, the two largest, publicly managed and resourced collections in Australia, have been closed since 2009 and are not included as that material is not available to the industry. Funding for Vine Improvement based collections is reliant on cuttings sold, thus open to the vagaries of the market.

The name of this register should more properly be “Australian National Register of Grapevine Varieties, Clones and Selections”. It is not only a list of germplasm, in the vine propagation sense of the word, but of germplasm and other types of holdings- ie the larger extension rows. In addition, some of the listed clones are in reality selections, rather than clones.

1. Collections

Request for information was sent out to collection holders that had participated in the previous 2013 register update, and also to other nurseries or individuals thought to have different or unique material. Eleven collection holders are included in the final register, see Table 1. Some contacted no longer had holdings and a few did not reply; See Appendix 1.

Table 1. Collections that replied and populated the register.

Relevant Collection/Association	Contact and address
AVIA; Australian Vine Improvement Association	Hilary Davis, Prue Henschke prue@henschke.com.au Dareton Agricultural Research and Advisory Station Silver City Highway, Dareton, NSW 2717
VAMVVIA; Victoria and Murray Valley Vine Improvement Association.	Hilary Davis Dareton Agricultural Research and Advisory Station Silver City Highway, Dareton, NSW 2717 http://vamvvia.org/
WA Grape Foundation Collection, Department of Primary Industries and Regional Development	Diana Fisher diana.fisher@dpird.wa.gov.au 28527 South West Highway, Manjimup, WA 6258
MIAVIS; Murrumbidgee Irrigation Area Vine Improvement Society, NSW	Jeremy Cass jeremy_cass@debortoli.com.au 2655 Mallee Point Rd, Yenda NSW 2681
SAVIA; South Australian Vine Improvement Association	Chris Rogers/Prue Henschke prue@henschke.com.au 78 Nixon Rd, Monash SA 5342
RVIC; Riverland Vine Improvement Association	Peter Arnold peter@rvic.org.au, www.rvic.org.au 78 Nixon Rd Monash SA 5342
Queensland; Applethorpe Research Station, Department of Agriculture and Fisheries	Contact; David Oag david.oag@daf.qld.gov.au Horticulture and Forestry Science, Department of Agriculture and Fisheries, 3 Roessler Ave, Applethorpe, Qld 4378
Yalumba Nursery, SA	Nick Dry; ndry@yalumba.com Cnr. Research Road & Nuraip Road, Nuriootpa, SA 5355
Chalmers Nursery, Vic.	Kim Chalmers Kim@Chalmers.com.au Merbein, Vic
ARM Nursery, Agribusiness Research and Management WA	Steve Partridge Steve@armnursery.com.au ARM Nursery, PO Box 140, Capel, WA, 6271
Glenavon Nurseries, SA	Mark Cleggett markanni@bigpond.net.au Bremer Road South, Langhorne Creek, SA 5255

The accessions in the register are located in two main types of collections; those holding only small vine numbers per accession, (1-5 plants) ie germplasm, (sometimes called “mother vines”), and those holding larger plantings per accession, (1- 500 or more), ie extension rows, used either for production of source blocks in regions, or, used directly as source blocks for nurseries or growers. Some collections have a combination of small numbers per accession and extension rows. No individuals were recorded with material outside nursery or Vine Improvement collections, having previously distributed their material to other collections.

Table 2 and 3 indicate the Collections divided according to the number of plants per accession. The Germplasm collections, having only very small numbers per accession, can allow 100% of that material to be virus and DNA tested, thus a more complete and reliable picture of the health and identification status of that material. The germplasm material may not be the original mother vine material, especially for older material, but may be for more recent imports.

Table 2. Germplasm Collections; small numbers per accession.

Collection	Code	Total number of entries (clones)	Total number of Varieties	Comments
AVIA, Dareton, NSW	AV	216	81	Initially established as a high health collection (2003). Routine virus testing has reduced due to lack of funds. Collection recently maintained only via management by VAMVVIA - nearby collection. Recent GPGV virus testing funded by Vine Health Australia.
Dept Agriculture & Food, Manjimup, WA	WV	192	134	The only germplasm still on public property. Strong liaison with WA Vine Improvement.
SAVIA (formerly AGFPS) collection, Monash SA	SV	466	156	The old AGFPS Kapunda collection relocated to Monash as a germplasm collection. Some own imports. Has increased plantings lately due to lack of funding for AVIA collection.

Table 3. Collections with extension rows or a mix of extension rows and smaller plots.

Collection	Code	Total number of entries (clones)	Total number of Varieties	Comments
RVIC collection, Monash, SA	RV	373	135	Contains both small and larger numbers of accessions. Has some own imports. Recent change of management. Also commercial nursery.
VAMVVIA, Dareton, NSW	VV	118	81	Contains essentially larger numbers of accessions, with material from mainly Irymple, CSIRO and SARDI collections for distribution.
MIAVIS, Griffith, NSW	MV	240	104	Increased in size recently as NSW DPI collection was pulled out, and some of that transferred to the private VI block.
QLD, Applethorpe	Q	28	24	Only Rootstocks now remaining, essentially basic maintenance
Yalumba Nursery, SA	Y	53	22	Private nursery, agents for ENTAV INRA, French clones.
Chalmers Nursery, Vic	CH	85	45	Private nursery, imports VCR and Matura Italian clones.
ARM nursery, WA	ARM	44	16	Private nursery, various imports.
Glenavon Nursery	GN	5	5	Nursery holding source of CSIRO rootstocks

This list will not necessarily indicate the attributes of the final propagation material that is distributed to growers for planting in vineyards. The immediate origin of that material is dependent on the structure of Vine improvement and the propagation distribution structure, and varies from Vine Improvements to Private nurseries. In the Vine Improvement system, material made available to nurseries to then grow on for growers may come from source blocks that are grown in commercial vineyards, managed by regional vine improvement organisations. Those regional source blocks have ideally originated from extension rows in VI collections. Thus, material planted in growers' vineyards could be up to 2- 3 levels removed from the mother vines (germplasm) in this list. In South Australia lists of regional Vine Improvement source block locations, together with their attributes such as clonal, origin, health status and trueness to type inspections are currently under compilation.

2. Accession Attributes; data collected.

The attributes for each accession listed in the register are outlined below, with more details available in *Instructions sent to Collection Holders;* Appendix 2.

- Identifiers – Product Identification number, Accession number, Permit number and importer
- Variety name
- Clone/Selection name
- Origin
- Colour, Type – wine/multi/rootstock
- Location- collection
- Size/number of vines per accession; 3-5(G), 1- 500(E/Sb)
- Provenance of this planting material, year of planting, on own roots or rootstock
- Health status
    - Virus tested –last tested/% of vines tested/what virus/ results
    - General vine health inspection
- Identification validation
    - Ampelographic
    - DNA – when, where, sampling technique
- Public domain/private material
- Non propagation agreement
- GPS coordinates
- Editing and National register Comments

This list of attributes is comprehensive to assist with traceability, and information of health and trueness to type status of the planting material, all particularly important with heightened risk of biosecurity incursion. The number of attributes populated, or completeness of information was variable among the collection holders, depending on the collection size, time and resources available to compile a list in this format, particularly if not maintained from the previous update. This appears to vary with the management structure, changes in the organisations, and recent events that impact on resource allocation.

A number of collections need further time, primarily, and resources to complete their component of the register, as it involves considerable time and thus resources to collate all the data required. The Vine Improvement organisations of SAVIA, MIAVIS and RVIC have significant numbers of accessions, but have not been able to populate all possible attributes in this format. Changes in personnel have affected the South Australian collections management, access and organisation of records for both SAVIA and RVIC. SAVIA recently had an International Ampelographer, Laurent Audeguin, (ENTAV-INRA), go through the collection, to check on trueness to type, and some doubtful identities await DNA confirmation. MIAVIS, that runs largely on volunteer management, is still to organise complete records following new plantings established to retrieve varieties from the government department collection, Griffith DPI, that was recently pulled out.

Most of the collections have regular virus testing protocols, and some have adopted a DNA testing programme to get around the whole collection in a number of years. Many of the latest virus and DNA testing results have not been included. The inclusion of virus testing may be seen as sensitive information, in particular with the latest GPGV findings, and VAMVVIA wish no virus results to be

included. The confidentiality and usefulness of inclusion will need to be discussed further with the collection holders. In addition, the reliability of some of the virus test results over the last few years is uncertain, as the sampling protocol recommended by one of the main diagnostic laboratories has now changed and may - possibly - have resulted in some false negatives results.

3. Potential Benefits of the register

As stated in the letter to the collection holders from Wine Australia, this register could potentially benefit the industry with;

- "*Assurance of identity / trueness-to-type of vine material, to support label integrity claims*
- *Knowledge of the geographic location of the 'best available' planting material*
- *Traceback capability in the event of biosecurity issues*
- *Identification of backup sources of clean, healthy vine material for replanting purposes, and*
- *Preservation of heritage and unique varieties and clones*."

4. Issues to be addressed.

In order to achieve the potential benefits, there are some outstanding issues that critically need to be addressed.

It is important to establish national guidelines on naming, health testing and identity verification, with a national committee. The need to address issues of nomenclature have been longstanding, and were previously noted in the review by McMichael et al, 2013.

These issues around naming and identity verification include resolution and establishment of;
• naming guidelines. This includes use of identifiers, eg accession/product /import/permit numbers, use of original clonal names or confirmation of clonal names where 'official' re-naming has occurred, addressing the issue of proprietary material, naming and inclusion on register, clarification and application of accepted synonyms.
• agreed guidelines on consistent evidence of traceability
• consistent naming and reporting of imposed treatments, e.g. hot water, virus elimination.
• protocols for DNA testing, and ampelographic inspections

In the guidelines on vine health testing, it has become increasingly obvious that there is an urgent need for;

- clarification of appropriate virus protocols around monitoring, sampling, testing and response. For the virus results in the register to be useable, protocols need to be standardised and reliable, to be able to confidently compare results. Further research and development may be required. Proficiency testing of virus tests across the main laboratories is being initiated, and needs to occur across the complete suite of tests, with attention given to the most reliable but also most cost-effective methodology. With potential increasing issues with viruses in grapevine planting material, reliable testing protocols are critical.

    - this includes national agreement on the list of endemic prescribed pathogens that can be spread through propagation material and some scientific basis for the exclusion/inclusion of doubtful pathogens such as GPGV, GRLaV 4 and 9, thus the need for testing and/or reporting and response to those results.

- development of a system to achieve an accurate, reliable and cost-effective virus monitoring and testing outcome using appropriate technology. The cost of sampling and monitoring testing is significant; RVIC, for example have spent up to $160,000 on virus testing over the last 4 years, which is also a logistically complex process, and needs to be regularly repeated.
  New technologies using both hyperspectral and other technologies are being researched, and assessment and future adoption of those tools of the future may reduce cost, increase reliability and comprehensiveness of virus testing, register upgrades, and high health material.

- extension of the information as discussed above.
  There is a current thought to plan for Virus workshops in early 2020 with NZ and Australian virologists to extend current information, monitoring and sampling protocols to the propagation and possibly broader industry; with inclusion of alternative, new technologies for virus monitoring and testing. This is an opportunity for collaborative organisation by Vine Improvement/VINA and others, as well as promotion of this register, and would also require a level of general industry support.

Currently SAVIA is revising and updating the 'National Vine Accreditation Procedures Manual Part 1 – Vine Improvement', as the national organisation, AVIA has no funds. It will be originally adopted by SAVIA, and hopefully then extended nationally. The guidelines developed for naming, traceability, identification and health protocols, will ideally link in with that, and then sit behind the register. The Manual will be a useful tool to set the guidelines for the test results entered into the register; for the register to be maintained accurately, it needs the Accreditation and Standard Operating procedures behind it.

Further research and development may be required to address these issues as well as an associated extension programme to the propagation sector of the industry. Additional extension to the general industry would highlight the advantage, need and availability of high health material.
This is imperative to maintain the current very valuable competitive advantage Australian vineyards enjoy in the international wine industry. Regard to the many recommendations from the "*A comprehensive review of Grapevine Pinot gris virus (GPGV)*" (Pearce et al, 2019) would assist these virus issues.

For the stated potential benefit of preservation of heritage and unique varieties and clones to be realised, more work is needed to gather, maintain and assess this material in a safe place. The two major, publicly funded collections of CSIRO and SARDI, hold up to about 1700 accessions between them, including important heritage material, and unique material (possibly over 300 accessions). The heritage material was collected originally from public vineyards for safe keeping. A project to re-establish these in an accessible collection is required. Preliminary discussion is underway among the VI's and interested industry personnel, to form a national project to identify, gather, store, maintain and assess heritage material. Some work has been done with a small number of varieties in the last 20 years; the Shiraz heritage clones a joint project in the 1980s and 90s with VI and SARDI.

An overarching issue is the nature and structure of the propagation industry. The vine improvement sector supplies the vast majority of planting material to the Australian industry; the VI organisations in SA provided 4.1 million cuttings in 2019 to the industry, with 2.4 million of that rootstocks from RVIC. VAMVVIA and MIAVIS have each distributed 1- 2 million cuttings annually in recent years. The structure and precarious position with funding and access to resources impacts on their ability to consistently maintain adequate health, trueness to type checks and traceability updates.

The industry is hamstrung with the two major collections, publicly funded CSIRO and SARDI, being closed. Subsequently there is now reliance on planting material sources run by not for profit vine

improvements and private nurseries. A nationally coordinated, cohesive propagation industry would be ideal to implement the necessary guidelines and protocols for effective risk management of the Australian Wine Industries base planting material.

5. Recommendations

Prior to release of the register, two main issues need to be addressed.

1. resolution of national guidelines on naming, vine health testing and identity verification.
2. the opportunity for collection holders to further update their own collection records in this format, with some extra resourcing to share that load.

To resolve the vine health testing issues as discussed, some research into the increasingly significant area of viruses in grapevines will need to be undertaken, and that linked in with an extension programme.

Finally, for successful adoption of naming, vine health monitoring, testing and management protocols, use of this register and subsequent distribution of high health planting material across the industry, there is a requirement for improved national coordination, integrated with existing structures to create a coherent and cooperative propagation sector.

6. References

1. McMichael, P., Hamilton, R., & E. Tassie, 2013. Review of Grapevine Germplasm Collections in Australia. Project Number: GWR 1112.
2. Pearce, I., Constable, F., Tassie, E. and S. McLoughlin, 2018. A comprehensive review of Grapevine Pinot gris virus (GPGV), including recommendations for future research, development and extension work in Australia. Project Number: VHA 1701

Appendices

Appendix 1. Collections/companies/individuals that were contacted but either did not reply (NR) or no longer have holdings

Relevant Collection/Association	Contact
Aquila Audax Enterprises	Mark Walpole (NH)
Brown Family Wine Group	Brett McClen (NH)
AHVII; Adelaide Hills Vine Improvement Inc.	David Coleman /Prue Henschke (NH)
Viticlone Supplies Grapevine Nursery	Chris Harding (NH)
KC Vines, Mildura	Andy Gordon (NR)
Woodlea nursery, Tasmania	Doug Cox (NR)
Elite Nurseries	Wayne Farquhar (NR)

Appendix 2. Instructions to Collection holders

Update of National Register of Varieties and clones; Instructions

Attached is the component of the National Grapevine Varietal Database that includes the records of your collection, that was updated in 2013, from the 2006 database populated by Mr Phil Nicholas.

The purpose of this current project is to update the Australian National Register for as much of the grapevine planting material in Australia as currently possible, and add to that information for reasons of biosecurity, vine health status and identification veracity.

Traceability is becoming increasingly important – hence many of the additions.

The following instructions are intended to explain the process of updating existing data, adding new data and deleting redundant and incorrect data, while maintaining the integrity of the original database. Please follow the instructions.

There are more columns dividing up the attributes to facilitate sorting the data and planting material – and will add greatly to the usefulness of that information.

If you have any queries please contact Libby Tassie, 0414 629 810.

On behalf of the industry and Wine Australia I thank you for your contribution and commitment to this important work.

Contents

General instructions **page 1 - 7**

Appendix **page 8**

General instructions

EXISTING ENTRIES

STEP 1. Ensure the collection database attached is for your collection.
STEP 2. Check the existing entries (from the 2013 version), against the clones/varieties that remain in the collection today.

STEP 3. A) **UPDATE** information for the confirmed existing entries; update name changes or other pertinent new information.
B) **ADD details for new Columns if available**
C) **IDENTIFY** entries that are no longer relevant – eg. entries for vines that are dead or have been removed from the collection (See - DELETE details below)

NEW ENTRIES

STEP 4. CREATE new entries for new clones and varieties. We must be able to identify new entries ("N"). (See – CREATE details below).

EDIT a cell entry – **Highlight cell in green** as you enter change, and add comment in Column AB Editing Remarks, to explain

DELETE a cell entry - **Highlight cell in yellow** as you delete, and add comment in Column X Editing Remarks, to explain

DELETE an entire entry/row - Highlight the row in yellow and **Insert explanation** in the COMMENTS column. eg. died/pulled out/ lost/ unknown

CREATE new row/entry - Highlight across that row in blue
Insert "N" alone in Column D or if known, insert **"N"** in **front of the Accession number** or **year of introduction in column D.**

Data requirements – Explanations and descriptions

The various original codes for clones, accession numbers and origin are described in the National Register (Nicholas, 2006) and those for clones are also explained in the appendix below.

The following explanations of these columns – old and the new ones - do look onerous, but will be helpful; thank you for your patience and input!

1. **National Identity or Product ID number**. **Column A.** This is a unique, randomly-assigned number. It is different for every clone and every variety. NEW entries to your database will not have one of these numbers, unless you are able to cross-reference your new entry with the National Register. A new number will be assigned when all entries are put together in collation of this information.
2. **Variety. Column B.** Please verify correct spelling for new entries.
3. **Clone/selection**. **Column C.** If the clonal name has changed (since its entry to Australia or to your collection), please note this in column Z National Register comments. Include all information that allows it to be traced to the original name at time of import, and to earlier synonyms.
4. **Accession number/year of importation. Column D.** An accession number used to be assigned formally to imports. If it is known please include in this column. If it is not known, please insert the year the material was introduced in the Accession column. If neither is known, please indicate this with a U.
5. **Permit number/name of importer. Column E.** Also known as AQIS number, an 8 digit number. This is a new column; an additional identifier where the *accession number is unknown*.
   A number of vines could all be on one permit number if imported by the same person at the same time.
6. **Origin. Country /place of origin. Column F.** See codes in attached appendix. This refers to where it was imported from, important in case of traceability for biosecurity reasons.
   If it is a new origin – not in the 2006 register- please write in full, and highlight as new, or contact Libby Tassie (0414 629810).

7. **Colour. Column G.** Same as original

Colour	Code
Black	B

Nil (Rootstock)	N
Red	R
White	W

8.Type. Column H

Type	**Code**
Multipurpose or drying variety	M
Rootstock	R
Tablegrape	T
Winegrape	W

9. Location 2019. Column I. The existing database locations are coded as shown below.
Please note some of these have changed to denote the Vine Improvement collections as V following the state, or other initial.

AV	AVIA, Dareton, NSW	**RV**	RVIC collection, Monash, SA
MV	MIAVIS Griffith, NSW	**SV**	SAVIA (formerly AGFPS) collection, Monash SA
Q	DEEDI, Queensland	**VV**	VAMMVIA, Dareton, NSW
		WA	Dept Agriculture& Food, Manjimup, WA
B	Browns; & place		
Y	Yalumba, SA & place		
CH	Chalmers, Vic & place		
ARM	ARM, WA & place		

Where a private importation has been made, that may be held at a germplasm, but owned by a third party. This should be covered by importer name/permit number, **column E**. Please note this in the register comments if not the importer. It may be either public domain or private. Contact details for that variety/selection, if not the importer, could be noted in comments **column Z.**

10. Size of planting. Column J

This is a new column**,** to try to distinguish between G0, or Germplasm, and resulting generations, G1 generally extension blocks. Some extension rows – taken from G0 plantings - are used as source blocks – eg rootstock blocks at VAMVVIA and RVIC, hence the terminology E/Sb (Actually G0 may not be the first plantings as we get further away from those initial CSIRO/Dept Ag plantings). Size may vary from this …it's an approximation.

Please ring Libby Tassie if questions.

SIZE	**ENTRY**
1-5 vines	G
1- 500 or so	E/SB

NB; if there are BOTH G & E/Sb plantings they need completely individual rows to be entered ie different virus/DNA ID info etc; 2 rows showing 2 individual entries of the clone, variety & accession name and other attributes.

11. Provenance of this material. Column K. This is a new column. This refers to where that particular planting material came from, eg SAVIA planting is often ex Kapunda ex SARDI. Some material may be direct from Quarantine. This may be the same for most plantings in a collection, so please just copy and paste! Eg Possible origins;

CSIRO, Merbein
SARDI, Nuriootpa
Irymple, Victoria
DPI, Griffith,

12. Year of Planting. Column L. Please just enter date (year) planted**.**
13. On own roots or rootstock. OR/RS. Column M. Plus name /accession number of rootstock if possible, or clone of rootstock.

14. Virus tested; date last tested, time of year – Spring /summer /autumn/winter . Column N. Please populate it as shown below, for all existing and new varietal/clonal entries.

VIRUS TESTING	**ENTRY**
Not virus tested	**Leave blank**
Last year tested	**Year Au**

It is assumed that records of results exist and could be made available should they be needed in the future.

15. Virus tested; % of vines tested. Column O. Just indicate % of the planting- ie number of vines out of total- tested.

16. What virus/es tested; **Column P.** This is new information, & becoming more relevant with the advent/prominence of more viruses. GPGV was unknown prior to 2012, and a test only available in Australia from 2014. Please use abbreviations as outlined below.

VIRUS TESTED	**ENTRY**
GLRaV-1, GLRaV-3, GVA	**13A**
GLRaV-1, GLRaV-3, GVA & GPgV	**13APg**
GRLaV – 1,2, 3, 4, 6 and 9, GPgV, RSPaV, GVA, GVB, GFkV, ie comprehensive test	**Comp**
Comprehensive plus grapevine red blotch	**Comp + GR**
Comprehensive plus Phytoplasma	**Comp + Ph**
Sole virus or other combinations	**Use abbreviations as below**

Comprehensive test; Grapevine leafroll-associated viruses GLRaV- 1, 2, 3, 4, 5 and 9 … (GLRaV-5 & 9 considered to be strains of 4, but require different tests);

Grapevine Pinot gris virus (GPGV);

Grapevine rupestris stem pitting-associated virus (RSPaV);

Grapevine virus A (GVA);

Grapevine virus B (GVB);

Grapevine fleck virus (GFkV)

Also potentially tested;

Grapevine red blotch virus (GRBaV);

Phytoplasma (Ph)

17. ELISA or PCR test. Column Q Specify PCR or ELISA method used in the laboratory.

18. Virus detected. Column R. If known, enter the virus detected in the testing; eg GVA, GLRaV-1, GFkV, etc OR neg. for negative.

19. General Vine Health Inspection. Spring/Autumn. Column S. This refers to the inspection that may be undertaken **annually** to look at general vine health, eg visual virus symptoms and other pathogens; could pick up dieback symptoms (Eutypa/Botryosphaeria or other).

If not done annually, enter last year done.

Annually; report as below, with indication if anything found. Add in any possible symptoms if relevant; D - dieback, LR- leaf roll, P – Phytoplasma, D – downy, Po- Powdery.

.

General Vine Health Inspection	**ENTRY**
No, or last year done	**Leave blank/2010 & D**
Yes – annually Autumn	**YA; D**
Yes – annually Spring	**YS; D /LR**
Yes – annually Autumn & Spring.	**YAS; LR**

20. Identity verified. DNA, where. Column T. Please populate this column as below. If the material has been identified using DNA tests, it is assumed results are available. Add other if tested elsewhere.

DNA; where	**ENTRY**
IFV (Fr)	IFV (Fr)
AGRF (Aust)	AGRF (Aust)
FPS UCD (USA)	UCD (USA)

Place of testing

- IFV (Fr) - Institut Francaise de la Vigne et du Vin (IFV), Montpellier, France
- AGRF (Aust) - Australian Genome Research Facility (AGRF), Adelaide, Australia

- FPS UCD (USA) - Plant Identification Laboratory, Foundation Plant Services, University of California, Davis (UCD), USA

21. Identity verified via DNA; year. Column U. Please state year of testing. In the future this may indicate type of testing (if change methodology), and verification of results eg at AGRF.

22. DNA test sampling method; % of vines. Column V. This is a new entry. Please fill in the number of vines tested, as a percentage of the total in the planting eg 33%, 25%, 100 and vine sampled if known or relevant eg northern/centre vine. This just indicates risk of off types.

23. ID verified; ampelographically. Column W

There are several possibilities – more recent to quite historical. Please use the codes as below. Add others if relevant.

ID verified Ampelographically	**CODE**
none	blank
Laurent Audeguin	LA
Jean-Michel Boursiquot	JMB
Erica Dettweiler	ED
Anna Schneider	AS
Jim Furkaliev	JF
George Kerridge	GHK
M. Truel / A. Antcliff	MT/AA

24. Public Domain/Private. Column X. This information relates to the accessibility of the grape material – Public domain (PD), or private/proprietary (Pr); it is noted that private imports may have a number of distribution/selection options; this can be noted in the comments column Z.

25. Under a Non-Propagation Agreement. Column Y. This is new information, and important. It is assumed documentation will be held by the collection/ material custodian and distributor. This may apply to material with overseas origin, as well as some under licence to CSIRO. The reputation and integrity of the Australian industry is important.

Under a Non-Propagation Agreement	**ENTRY**
No	No
ENTAV	ENTAV
VCR	VCR
Plansell	Plansell
Matura	Matura
other	Please state with explanation

26. GPS Identifier. Column Z. If this exists!!!

27. National Register Comments. Column AA. Please add comments on varietal or clonal names, synonyms, private contacts if relevant etc. For example, change of name due to mistaken identity – good to capture eg Albariño to Savagnin blanc/ Grillo to Slankamenka etc.

28. Editing comments. Column AB. This column is for comments or explanations of changes from the last entry to this one, eg changes or entries made.

THE END.

Thank you very much indeed for your time and effort with this register.

Libby Tassie

libtas@bigpond.com

m 0414 629810

Appendix 1.

Further explanation of some attributes

1. **Clone/selection name**

The following refer to the clone/selection name, *OR* identifies the source of selection.
If name not here, please add on register spread sheet with explanation in national register comments

Clone/selection name abbreviations

Beauj	Beaujolais, France
Bord	Bordeaux, France
Colmar	Colmar, France
CW	Coonawarra
ENTAV-INRA ®	the brand - IFV clones created at INRA (formerly INRA)
FPS	Foundation Planting material, UCD.
FSAC	Fragmented shoot Apex culture virus elimination treatment
Gm	Geisenheim, Germany
Griffith	Griffith, NSW
GW	Great Western, Victoria
HT	heat treated virus elimination
INRA	Institut National de la Recherche Agronomique, France (prior to ENTAV- INRA)
Irymple	Irymple, Dep Ag, Victoria
LC	Langhorne Creek
Mat	Matura, Tuscany Italy

Merbein	CSIRO Merbein, Victoria
NA	Not Applicable, due to synonym use
Nuriootpa	SARDI Research Centre, Nuriootpa, South Australia
Plansell	Plansell, Portugal
SARDI	SARDI Research Centre, Nuriootpa, South Australia
Rutherglen	Rutherglen, Victoria
Tasmania	Tasmania
TC	Tissue cultured
UCD	University of California, Davis. USA
VCR	VCR, Friuli Italy
WA	Western Australia