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Wine Australia

AWRI Australian Wine Research Institute

# Collecting and disseminating information on agrochemicals




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## 1. Abstract

Governments around the world monitor residues of agrochemicals and set limits for amounts that are legally allowed in foods, including grapes and wine. Up-to-date information on agrochemical management is needed by Australian grape and wine producers to ensure that finished wines meet these limits and do not encounter trade barriers. This project aims to assist producers to manage agrochemical residue levels in their products. This is achieved by collating and providing accurate and timely information on regulatory and technical aspects of chemicals registered for use in Australian viticulture and the maximum residue limit (MRL) requirements in domestic and export markets.

## 2. Executive summary

The aim of this project was to enable grape and wine producers to manage agrochemical residue levels in wine. This was achieved by collating and providing accurate and timely information on regulatory and technical aspects of chemicals registered for use in Australian viticulture, and the maximum residue limit (MRL) requirements of those chemicals in domestic and key export markets.

The main method of conveying information to industry and other stakeholders in this project was through the collation and publication of the booklet Agrochemicals registered for use in Australian viticulture (commonly known as the 'Dog book'). Over the course of the project, a new edition of the 'Dog book' was published and distributed each year, and significant changes were made to the size and structure of the publication in response to the changing demands of industry practitioners.

In addition to a hardcopy version of the 'Dog book', growers and winemakers could also access agrochemical information via a pdf version available from the AWRI website, the AWRI's mobile agrochemicals app or by interrogating the online agrochemical database. All of these sources of information were kept up to date through the activities of this project.

The project team monitored potential pest, disease and agrochemical issues through regular communications with key industry and government stakeholder networks. Changes to product information and agrochemical use options were managed in consultation with chemical suppliers, and in accordance with the fortnightly gazettes issued by the Australian Pesticides and Veterinary Medicines Authority (APVMA). In response *eBulletins* were distributed to a database of ~3,200 stakeholders, in a timely manner, to allow industry to respond to regulatory changes.

Changes to established market MRLs, or the addition of new markets, required existing agrochemical practices to be frequently re-evaluated and reviewed. Any changes were discussed with and endorsed by the industry Agrochemical Reference Group, which includes representatives of regional-based grower organisations and major wine companies.

## 3. Acknowledgements

This work was supported by Australia's grapegrowers and winemakers through their investment body Wine Australia with matching funds from the Australian Government. The AWRI is a member of the Wine Innovation Cluster in Adelaide, SA.
This project received in-kind support from members of the Agrochemicals Reference Group and Accolade Wines, APVMA, agrochemical manufacturers, suppliers and consultants, SARDI, CropLife Australia, GrapeLink, GrapeWeb, Homologa, Treasury Wine Estates, Pernod Ricard Winemakers and the AgChem Access Priorities Forum.

## 4. Background

Recognising that not complying with legislation and international trade requirements has the potential to present major barriers to trade, this project's primary goal was to provide accurate and timely information on regulatory and technical aspects of chemicals registered for use in Australian viticulture. It also collected and distributed information on the maximum residue limit (MRL) requirements of those chemicals in export markets. This project also provided the staff and expertise to assist in the resolution of trade issues through the collection and supply of data when required.

The AWRI continued to produce a list of agrochemicals (insecticides, fungicides, herbicides and plant growth regulators) registered by the Australian Pesticides and Veterinary Medicines Authority (APVMA) for use in viticulture, with recommended withholding periods for grapes intended for exported wines, to meet the most stringent international MRLs. Additional details about the 'active ingredients' in agrochemical products were sourced and captured in AWRI databases. Information was made available to the Australian wine industry in hard copy, searchable online format and via an app. The content and delivery of those services was enhanced throughout the project in response to the needs of the industry.

A good working relationship was maintained with chemical manufacturers and suppliers, and tools were developed to facilitate the collection of information about agrochemical products from those groups.

Spray records are recognised as a useful source of pest and disease control information. The project accessed this data from a range of sources including wineries who collect their grower's spray diaries as well as from the main electronic spray diary provider GrapeWeb. The evaluation of product use and application practices was used to prioritise discussions with industry and regulatory bodies. The project also engaged with regional associations and other stakeholders, to gain insights into the effectiveness of spray programs.

## 5. Project aims

The deliverables of this project were ongoing in nature, and structured to support the provision of timely and relevant technical information as required. They were:

'Dog book'

- Database of up-to-date information pertaining to agrochemicals relevant to grape production.
- The agrochemical booklet *Agrochemicals registered for use in Australian Viticulture* and associated databases, website search facilities and app (annual publication and ongoing updates).
- Accurate, adequate and timely information on which to respond to issues and on which to base decisions, including the creation of reports and initiation of investigations when required.

MRLs

- MRL databases and online search facility where MRLs are searchable via market or product active constituent(s).
- Website updates, *eBulletins*, presentations.
- Representations to export markets and DAWR when MRL issues that affect the wine industry arise.
- Reports to market access team meetings of the status of international MRLs currently being reviewed

Spray diary evaluation

- Interrogation and interpretation of data
- Extension materials developed

New agrochemicals

- Support, where required, for the registration process for key agrochemicals for use in viticulture

Evaluations of new products to develop recommendations for inclusion in the 'Dog book'

## 6. Methods

### 6.1 Maintaining up to date agrochemical information tools

#### 6.1.1 Dog book production

The following steps were undertaken in producing and maintaining the 'Dog book':

- Details of products registered for Australian viticulture were sourced annually from chemical companies and this information was incorporated into a database developed for this purpose.
- At the end of each vintage an annual meeting of the Agrochemical Reference Group was organised to discuss the issues that had arisen in the previous growing season and to assess the regulatory changes that had occurred. These meetings determined the recommendations around agrochemical use for the coming season and the recommendations were incorporated into the 'Dog book'.
- The annually published booklet *Agrochemicals registered for use in Australian viticulture* was then prepared and distributed.
- The online PDF of *Agrochemicals registered for use in Australian viticulture*, the online search facility and the web- and mobile-based extension platforms were also updated to reflect changes for the coming season.
- Reviews were initiated where a change to agrochemical use patterns was likely and reports on the implications were prepared for the Agrochemical Reference Group.
- Notifications received from the APVMA (via the APVMA Gazette) were reviewed in a timely manner. All agrochemical changes that had come into force were incorporated into the agrochemical databases within two weeks of notification.

#### 6.1.2 MRLs

The following steps were undertaken to maintain the MRL database:

- MRL information from key markets was sought directly from the relevant regulatory agency in each market.
- All alerts of maximum residue level (MRL) changes concerning grape and wine products from Australia's 35 principal export destinations as issued by the Australian Government Department of Agriculture and Sanitary and Phytosanitary (SPS) notifications via the World Trade Organization were regularly reviewed.

- The MRL database and online search facility were updated when advice of a change to MRLs was received. This information was also fed into the 'Dog book' production process and led to engagement with the agrochemical reference group when necessary. Updates to online information were made within two weeks of a notification.
- Changes to domestic and international MRLs were reported via updates to the MRL online search facility.
- The Australian Government Department of Agriculture, Wine Australia, the Wine Industry Technical Advisory Committee, and Australian Grape & Wine were consulted when MRL issues arose and submissions were prepared as required.
- *eBulletins* were issued about any significant changes that occurred concerning agrochemical or MRL issues, for example when a new 'active' was added or removed or a change was made to the recommended withholding period for an 'active'.
- Reviews were undertaken as required to determine the impact a regulatory change would have on the use of an agrochemical. The Agrochemical Reference Group was consulted as part of these reviews.

#### 6.1.3 Spray diary evaluation

Spray diary data was sourced from GrapeWeb. Project staff assessed the data for trends in product use and application practices. Presentations were prepared and delivered to regions or stakeholder groups on the knowledge gained from analysing the spray diary data.

#### 6.1.4 New agrochemicals

Support was provided to chemical companies involved in registering new active constituents for viticulture. Staff from the AWRI Commercial Services trace analysis team were engaged in residue and fermentation trials conducted by chemical companies. The trial results were used to make recommendations about the active constituent' use in viticulture.

## 7. Results and discussion

### 7.1 Maintaining up to date agrochemical information tools

Between 1 July 2017 and 30 June 2022, 670 sanitary and phytosanitary (SPS) notifications and 111 APVMA gazettes were reviewed for viticulture-relevant information, and the information was used to update the 'Dog book' and associated online resources.

The process of reviewing key market food standards in conjunction with SPS notifications was suitable for maintaining MRL lists for export markets. This process identified likely changes to the mancozeb MRL in the EU and prompted a review of residues in wine and use patterns in vineyards.

Each year of the project the AWRI engaged with more than 60 agrochemical suppliers about the 900+products registered for use in Australian viticulture to ensure that information provided through this project was current and relevant.

As a result of new active constituent registrations or regulatory issues, the following active constituents were reviewed and evaluated: abamectin; acetamiprid; acetic acid; bacillus amyloliquefaciens; chlorantraniliprole; chlormequat; difenoconazole; dimethomorph; eugenol; fenpyrazamine; fluopyram; geraniol; glyphosate; iprodione; iron phosphate and iron powder; mancozeb; mefentrifluconazole; polyoxin D zinc salt; pydiflumetofen; pyriproxyfen and thimol.

As part of ongoing efforts to have an MRL established for phosphorous acid, a dossier submitted to the Food and Agriculture Organization/World Health Organization Joint Meeting on Pesticide Residues (JMPR) in the previous investment period resulted in a Codex MRL being established. The

significance of this is that it establishes an MRL for phosphorous acid in all those countries that accept Codex MRLs, where previously no MRLs for phosphorous acid were in place.

Over the course of the project, 26 agrochemical *eBulletins* were issued to a distribution list of more than 3,200 email addresses and 21 active constituents were reviewed. All changes were reflected in updates to the 'Dog book' and associated electronic information sources.

The 'Dog book' was produced annually for the term of the project and more than 30,000 copies were distributed. The process of engaging an agrochemical reference group and regular contact with chemical suppliers was successful in providing accurate and useful information about agrochemicals through established AWRI communication and extension tools.

Grapeweb spray diary data was sourced each year and evaluated ahead of roadshows to identify trends of interest in the regions being visited. When required, the data was put to a specific purpose such as to identify the extent of mancozeb use.

### 7.1.1 Dog book production

The 'Dog book' was produced annually from 2017/2018 to 2021/2022. Table 1 summarises how the 'Dog book' was distributed to stakeholders over the investment period.

**Table 1.** Distribution of agrochemical information to stakeholders via different hard copy and electronic versions of the 'Dog book' over the five-year investment period

| **Agrochemical information source** | **Distribution** |
|---|---|
| 'Dog book' hard copy | >30,000 hard copies distributed |
| Online pdf | >16,500 downloads |
| Online search facility | >16,000 times accessed |
| Agrochemicals App in Android and IOS | >2,000 user downloads |

### 7.1.2 MRLs

Each year the MRLs for key export markets were reviewed fully on at least one occasion. Specific MRLs were checked in response to queries from industry about potential market issues. SPS and technical barriers to trade (TBT) notifications as well as other sources of regulatory information were reviewed as they came to hand. It was following such notifications that reviews into chlormequat, glyphosate, iprodione and mancozeb were undertaken by the project team. These reviews identified that chlormequat and iprodione are not suitable for use in wine-grape production for export wine. It was also determined that glyphosate could be a residue risk in wine production and that mancozeb should only be used up to E-L growth stage 25.

### 7.1.3 Spray diary evaluation

Spray diary data was sourced from GrapeWeb each year of the project. Project staff assessed the data for trends in product use and application practices as it related to the regions being visited by the AWRI roadshow program. The results of that analysis were presented in the regions by AWRI staff for discussion, as part of tailored presentations for each region. The data was also used to determine the extent and timing of mancozeb use to assess what impact a change in the EU MRL for mancozeb would have.

## 8. Outcome and conclusion

This project successfully developed and maintained a store of valuable regulatory data about agrochemicals that was readily available to industry. Importantly, it built human capital with expertise to deal with regulatory matters as they arose. The project met the primary goal of managing regulatory issues that could hinder trade in Australian wine, affect the quality of our wine products, or cause reputational damage. This was achieved by collecting, assessing and acting on current and future agrochemical regulation, initiated at home or overseas. All decisions affecting the sector were made in collaboration with a cross-section of grower and winery stakeholder members of the agrochemicals reference group. This helped to ensure that workable decisions were made and that those decisions had broad industry support.

## 9. Recommendations

This project has identified that agrochemical use is under pressure from consumers on environmental and public health grounds and viticulture is being affected. Grower groups argue that the restrictions placed on agrochemical use are hindering their capacity to control pests and diseases and resistance management is also at risk. While these factors are largely external and driven by global trends, research to investigate integrated pest management strategies would help reduce Australian viticulture's reliance on agrochemicals. Such research would involve understanding and monitoring the pest life cycle as well as testing the impact of cultural practices so that minimal agrochemical use is required. The role of new technologies such as spore trapping should also be investigated. Having 'best practice' information available to growers is important if their behaviour is expected to change. Input from behavioural science experts could also be of benefit in this area. In addition, having data that demonstrates that the Australian grape and wine community is working to meet the challenge of lower agrochemical use will go some way in helping to secure an ongoing social licence to operate.

## 10. Appendix 1: Communication

The production and distribution of 'Dog books' is the primary means of communication for this project, along with the associated digital tools such as the AWRI web-based search facilities for MRLs and agrochemicals and apps. *eBulletins* are the primary direct communication method for disseminating important messages about agrochemicals to Australian grapegrowers and winemakers.

## 11. Appendix 2: Intellectual property

Program IP has been communicated through presentations and publications and resides in the public domain. Copyright in any reports or presentations is held by the AWRI. Copyright in publications remains with the publisher. No inventions or patentable discoveries have been identified from the work. No Program IP has been commercialised or identified for commercialisation at the time of writing this report.

## 12. Appendix 3: References

No references cited

## 13. Appendix 4: Staff

Linda Bevin, Mardi Longbottom, Anne Lord, Randell Taylor, Marcel Essling, Con Simos

## 14. Appendix 5: Other supporting material (including raw data, if appropriate)

Not applicable