



*Know-how for Horticulture™*

**Improved labelling of  
pesticides to  
encourage optimum  
use in horticultural  
crops.**

*Adrian Jones, et al*  
ChemCert Australia (Vic) Inc

**Project Number: AH99003**

## **AH99003**

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Horticultural Australia Ltd  
Level 1  
50 Carrington Street  
Sydney NSW 2000  
Telephone: (02) 8295 2300  
Fax: (02) 8295 2399  
E-Mail: [horticulture@horticulture.com.au](mailto:horticulture@horticulture.com.au)

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**Horticulture Australia**



Improving Chemical Labels  
An Aushort Project funded through HRDC

Project Team:

Adrian Jones  
Bob Gray  
Bernadette Swanson  
Warren Medwell

Contact:

Adrian Jones  
15 Lundstroms Road  
FOSTER VIC 3960  
Phone: 03 5682 2384  
Fax: 03 5682 2384  
Email:  
amjones@dcsi.net.au

**AH99003 Improved labelling of pesticides to encourage optimum use in horticultural crops**

***Final Report***

***September 2000***

# AH99003 IMPROVED LABELLING OF PESTICIDES TO ENCOURAGE OPTIMUM USE IN HORTICULTURAL CROPS

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# 1 Executive Summary

## 1.1 Background

AusHort (The Australian Horticultural Industries R&D Committee) through its constituent commodity bodies had been aware of anecdotal evidence of producers' concerns with pesticide labels.

Pressures from market requirements and regulatory bodies mean that producers need to use pesticides in the most effective way and this requires the label to better serve this purpose.

AusHort through HRDC has funded this project which has quantified the problems of producers with pesticide labels and made recommendations to improve the labels so that producers can achieve optimum use of pesticides.

ChemCert Australia (formerly Farmcare) (Vic) Inc were contracted as consultants and they engaged a project team consisting of:

Mr. Adrian Jones	(Team Leader)	Tom Phillips & Assoc. Pty. Ltd.
Mr. Bob Gray		Gray Consulting Pty. Ltd.
Mrs. Bernadette Swanson		DNRE, Victoria
Mr. Warren Medwell		Warren Medwell & Assoc.

The project team reported to a reference group consisting of:

Mr. Gerard McEvelly	(Program Manager)	HRDC
Mr. Jonathan Eccles		HRDC
Ms. Margaret Uloth (July-August)		HRDC
Mr. Andrew Pearce		AusHort
Mr. Leon Radunz		Avcare

## 1.2 Project outline

### 1.2.1 Phase I Project Awareness

The project team developed a communication strategy that would invite different levels of stakeholder involvement and enable on-going communication between stakeholders for the life of the project.

The principal stakeholders were obviously the wide range of producers in all horticultural industries. The team wanted to contact a broad sample of producers and enlisted the assistance of industry development officers, accredited chemical resellers and experienced ChemCert trainers in each state and territory.

From the outset, the team consulted with chemical companies, principally through Avcare (The National Association for Crop Production and Animal Health), the NRA (National Registration Authority) and state regulatory bodies. These bodies have a vital interest in the outcome of this project. Significant grower feedback will enable these groups to better serve the needs of users of chemicals.

All stakeholders were informed about the proposed conduct of the project and invited to participate.

## 1.2.2 Phase II Data Collection and Analysis

### **Collection**

The team developed and tested a survey questionnaire to be sent to growers. The questionnaire sought information about the producer's background, experience and practice to see if the problems mentioned would relate to these. The team structured the five questions in such a way that they might verify problems raised by producers.

They invited industry development officers, accredited Agsafe resellers and experienced ChemCert trainers to have the questionnaire completed by producers.

The questionnaire was to be completed face to face, over the telephone or by mail.

The team saw that the industry development officers would give coverage of the range of horticultural commodities. They knew that growers saw resellers as important in giving chemical advice. They saw the ChemCert trainers as having access to a broad range of producers across the country.

The team sent each interviewer information and advice for conducting the interviews. They wanted to cover producers with varying sizes of enterprise, levels of education and experience in their industry.

### **Replies**

26 industry development officers offered to have 200 questionnaires completed. They returned 70 completed questionnaires.

28 ChemCert trainers offered to have 600 questionnaires completed. They returned 269.

30 accredited resellers offered to have 150 questionnaire completed. They returned 72.

### **Analysis**

Responses to the questions were coded, collated and then analysed with the assistance of a specially developed database template and query program.

Respondents used their own terminology in answering questions and this has been used in the data analysis.

Points from the analysis:

- 36 enterprise types identified by respondents.
- All major horticultural producing areas covered with the exception of the Kimberley region in WA.
- Issues identified for producers did not seem to differ with perceived size of enterprise.
- Issues identified for producers did not seem to differ for those with/without formal training.
- Because of the small number of respondents who admitted difficulty reading the label in English, the survey recommendations will only in an indirect way address the needs of this group.
- From a consideration of responses to questions which asked growers to identify problems they had with labels (questions 4.3, 4.5, 4.6, 5.1) the team identified the following 19 issues for producers:
  - Need to improve readability of the label.
  - Need to clarify rates for a range of situations.
  - Need to address matters relating to the efficacy of the chemical.
  - Need to provide better information on compatibility.
  - Need for clearer presentation of poison schedule.
  - Need to address matters associated with minor use.
  - Need to better address OH&S matters.
  - Need to improve the durability of the chemical label.
  - Need for better access to and modification of MSDS.
  - Matters affecting packaging.
  - Need to add specific information to the label.
  - Need for better definition of and information on residual times.
  - Need to improve availability of the label.
  - Matters affecting training.
  - Need to better address environmental matters.
  - Need for better information on resistance management.
  - Need to better address matters associated with IPM.
  - Matters affecting support services.
  - Matters affecting regulations and legislation.

### 1.2.3 Phase III Data Confirmation and Prioritisation

#### Focus Groups

**The team conducted 13 Focus groups in the following locations:**

No	Location	Date	Type	No	Location	Date	Type
1	Melbourne	6.4.00	P	8	Adelaide	1.5.00	R&C
2	Melbourne	7.4.00	R&C	9	Virginia	1.5.00	P
3	Sydney	10.4.00	R&C	10	Mildura	2.5.00	P
4	Brisbane	11.4.00	M	11	Griffith	3.5.00	P
5	Bundaberg	12.4.00	P	12	Shepparton	4.5.00	P
6	Darwin	14.4.00	M	13	Launceston	30.5.00	M
7	Perth	17.4.00	M				

The groups were of three types:

- Those composed of producer representatives (P)
- Those composed of regulatory and agrochemical representatives (R&C)
- Those composed of producers, chemical company and regulatory representatives(M)

The focus groups confirmed the issues identified in the survey, proposed strategies for addressing issues and alerted the team to possible barriers to addressing some of the issues.

#### 1.2.4 Phase IV Feasibility Review

The team tested their interim action plan in discussions with NRA and Avcare, two principal stakeholders who would determine the feasibility of strategies proposed in the project.

The team also sent an interim report to all stakeholders and invited their comment.

The team modified their recommendations and strategies in light of this review.

#### 1.2.5 Phase V Reporting

Throughout the project the team has met with and reported to the reference group nine times.

They successfully presented an interim report giving an analysis of the data from the survey.

### **1.3 Key Outcome, Recommendations and Strategies**

The recommendations that flow from the issues identified will be addressed by a series of strategies that are listed below.

Some recommendations can be addressed in the short term and others will take longer.

The key outcome involves the establishment of an Implementation Working Group that will then work with major stakeholders in the project to carry out the recommendations through the defined strategies.

#### **Key Outcome**

##### ***Establish an Implementation Working Group (IWG)*** **Strategy**

- 1. AusHort to establish the Implementation Working Group.**
- 2. IWG to work with the different stakeholders to implement recommendations as indicated below.**
- 3. IWG to pursue the development of an on-line system for label support.**



## ***IWG & NRA***

### **Strategy**

- 1. IWG to establish a working group to consult with NRA about incorporation of proposed recommendations from this project into the revised Code for Labelling of Agricultural Products.**
  
- 2. IWG to consult with NRA about the implementation of the following recommendations and report to AusHort within 6 months.**
  - That information relating to Hazardous Substance recognition be included on the label.
  - That the provision of legible batch numbers on labels and on individual packs of multi-pack packaging be required and enforced by the NRA.
  - That label information be reviewed to ensure disposal of concentrate and rinsate is in line with current recommendations.
  
- 3. IWG to consult with NRA to develop ways of implementing the following recommendations.**
  - That the NRA review process of labelling address consistency of language.
  - That the problem of complex language on the label be addressed to improve readability and correct interpretation.
  - That like information be grouped on the label such as:
    - All safety information
    - Critical comments with general instructions
    - Advisory statements
    - Mandatory statements
  - That a minimum print size be established to improve ease of reading the label.
  - That directions for use information be provided in total for each particular crop or situation in a single panel of the label.
  - That the description relating to the poison schedule be made more obvious on the label.
  - That specific information relating to re-entry periods is provided for all chemicals.
  - That label advice of First Aid be reviewed in the light of current information from the Poisons Information Centre.
  - That directions for use be provided as a booklet in a pocket attached to the chemical container.
  - That labels highlight specific state requirements for Control of Use.
  - That a consultative group of stakeholders in chemical labelling with significant grower representation be developed by the NRA to address concerns and issues identified through this project.

## ***IWG & AvCare***

### **Strategy**

- 1. IWG to work with Avcare to implement the following recommendations and report to AusHort within 6 months.**

- That the implementation of training to introduce the Model Label developed by the Avcare Working Group be monitored for grower acceptance. Producers' concerns to be reviewed are:
  - Dilution rate
  - Phytotoxicity
  - Residues
  - Efficacy
- That the introduction of the model label be supported with a major extension campaign aimed at achieving grower acceptance of the label advice.
- That each label carries a website address for access to MSDS.
- That the drumMUSTER contact number be shown on the label.
- That manufacturers ensure that label information is made available for planning chemical use via electronic media.

**2. IWG to consult with Avcare to develop ways of implementing the following recommendations.**

- That additional information to enhance effective use be provided from other sources by chemical companies. Such information could be rainfastness or best time of day for application.
- That compatibility information be presented on the label in a more readable format.
- That manufacturers be encouraged to net containers for shipment to resellers.
- That Avcare assist manufacturers to work with resellers to devise a more workable system for the provision of MSDS to growers.
- That the ChemClear number be shown on the label when the system is established.
- That manufacturers provide both phone and website contact details for technical and product support information.
- That manufacturers provide better support material relating to efficacy and climatic conditions for chemical application.
- That manufacturers ensure that changes to existing product labels are clearly and effectively communicated to resellers and growers.
- That manufacturers include clear label information which enhances the responsible use of the product to limit the development of resistance.
- That manufacturers include label information which enhances the responsible use of the product to encourage the practice of IPM.

***IWG & ChemCert***

**Strategy**

**1. IWG to work with ChemCert to develop ways of implementing the following recommendation.**

- That the model label approach to determining label rates be included in producer training programs, particularly ChemCert.
- That education and training programs be revised to improve growers' understanding of the recent changes to the description of signal headings.
- That through education and training growers be encouraged to use safer formulations and transfer systems as well as environmentally less hazardous packaging.

- That outcomes of the project be communicated to ChemCert Australia so that existing training programs for horticulturists can be revised.
- That education resources be revised to support the extension of the outcomes of the project.
- That extension and training programs be improved to develop growers' understanding of such terms as: MRL/WHP, re-entry period, plant back period.

### ***IWG & Equipment Manufacturers***

#### **Strategy**

#### **1. IWG to work with equipment manufacturers to develop ways of implementing the following recommendation.**

- That equipment manufacturers and retailers be encouraged to assist growers in the effective use of application equipment to achieve accurate and consistent rates of application.

### ***IWG & AusHort***

#### **Strategy**

#### **1. IWG to work with AusHort to develop ways of implementing the following recommendations.**

- That commodity groups work with chemical companies to develop appropriate compatibility information for their particular industry sector.
- That extension and training programs be improved to develop growers' understanding of such terms as: MRL/WHP, re-entry period, plant back period.
- That commodity groups identify minor use situations and apply nationally for minor use approval through Crop Protection Approvals Ltd.
- That producer groups develop regional IPM strategies and encourage growers to look to these groups for relevant information.

### ***IWG & Registration Liaison Committee (RLC)***

#### **Strategy**

#### **1. IWG to work with RLC to develop ways of implementing the following strategies.**

- That inconsistencies in withholding periods between pesticides with the same active constituents be reviewed.
- That labels highlight specific State requirements for Control of Use.
- That harmonisation of Control of Use legislation between the States be expedited.

### ***IWG & NOHSC***

#### **Strategy**

#### **1. IWG to work with NOHSC to implement the following recommendation.**

- That the structure and content of the MSDS be re-designed to be more useful to growers.

### **Support Group**

The team proposes that a support group be funded to manage and facilitate the Implementation Working Group.

The project team has structured the strategies in such a way that none of the concerns of producers identified through the project will be lost but that there will be reporting to AusHort on progress with each of them.

## **2 Setting the Scene**

### **2.1 Background**

The AusHort (The Australian Horticultural Industries R&D Committee), representing a wide cross section of horticultural commodity groups identified a cross commodity issue with pesticide labels.

The issue was that pesticide labels were perceived to be difficult for horticulturists to interpret and hence obtain optimum use of the product. Their problems ranged from print size to interpreting optimum rate for a given use and anomalies between labels.

There was clearly a need to consult with the various commodity groups at a 'grass roots' level to quantify the real issues with labels. Many anecdotal issues had been raised in the past, however these had not been quantified nor addressed by a strategy to improve the situation for growers.

During 1999, AusHort successfully obtained funding from HRDC to tender out a consultancy to quantify the issues with pesticide labels and develop strategies which would address those issues.

ChemCert Australia (formerly Farmcare) (Vic.) Inc. was engaged as consultants for the project reporting through a reference group, consisting of representatives from HRDC, AusHort and Avcare(The National Association for Crop Production and Animal Health). The project commenced in November 1999 and concluded in September 2000.

An important component of the project was to consult widely with key stakeholders and work in collaboration with those stakeholders to identify and prioritise strategies which could successfully be progressed to address the issues identified.

Stakeholders were identified as to their likely involvement and contacted for appropriate assistance.

### **2.2 Major stakeholders**

- HRDC as the project funding body, provided links with the various commodity groups. HRDC also encouraged the involvement of Industry Development Officers (IDO) who assisted in identifying producers to consult with and helped in arranging meetings.
- Avcare involvement was critical as their support was seen vital to progress many of the issues. Also, Avcare had existing working parties on some of the issues identified, such as rates for vine crops and pesticide resistance management.

- ChemCert Australia through their various State networks provided an effective means of conducting a representative survey of growers' views on pesticide labels. This group ensured a high response rate to the questionnaire.
- The NRA (National Registration Authority) as with Avcare was always going to be crucial to implementation of many strategies given their role in approving pesticide labels. NRA assistance was sought and obtained at various stages of the project. Their assistance along with that of Avcare at the Feasibility Review stage was particularly helpful.
- State Government Regulatory bodies involved in Control of Use of pesticides were involved due to impact of any proposed label changes on State Control of Use issues. Many labels refer to State restrictions on use of pesticides. States also differ in their approach to legal requirements which may impact on label information.
- Allied projects impacting on use of pesticides were also seen as important to be linked with this project. The NRA had also funded a project on label issues and were undertaking a review of the labelling code.

### **2.3 Other Stakeholders**

Several other groups were identified as stakeholders to be informed of the project and invited to provide assistance as seen appropriate.

Those groups were:

- Chemical Industry e.g. Chemical Resellers, Consultants & spray equipment manufacturers. Resellers provided assistance with questionnaires.
- Allied Industry R&D Groups e.g. GWIRDC, RIRDC
- Govt. & semi Govt. Departments e.g. Agriculture, EPA, Workcover, Human Services.
- State and Federal Farmer Organisations e.g. NFF.
- QA Program managers e.g. SQF 2000.

### **2.4 Acknowledgements**

The project team expresses its thanks to the following groups who assisted in the work of the project.

<b>Group</b>	<b>Contribution</b>
Producers	<ul style="list-style-type: none"> <li>• Those who completed the survey questionnaire</li> <li>• Those who participated in the focus groups</li> </ul>
HRDC	<ul style="list-style-type: none"> <li>• Support during the conduct of the project through the reference group</li> <li>• Advertising the project to horticulturists</li> <li>• Participation in Feasibility Review</li> </ul>
Commodity group Industry Development Officers	<ul style="list-style-type: none"> <li>• Advertising the project</li> <li>• Having questionnaires completed</li> </ul>

<b>Group</b>	<b>Contribution</b>
	<ul style="list-style-type: none"> <li>• Participating in and organising focus groups</li> <li>• Providing comment on interim reports</li> </ul>
AusHort	<ul style="list-style-type: none"> <li>• Support through reference group</li> </ul>
NRA	<ul style="list-style-type: none"> <li>• On-going consultation</li> <li>• Participation in focus groups</li> <li>• Participation in Feasibility Review</li> </ul>
Avcare	<ul style="list-style-type: none"> <li>• Advertising project</li> <li>• Support through reference group</li> <li>• Participation in Feasibility Review</li> </ul>
ChemCert Australia	<ul style="list-style-type: none"> <li>• Having questionnaires completed through experienced trainers in each state and territory</li> </ul>
State Regulatory Bodies involved in the Control of Use of Pesticides	<ul style="list-style-type: none"> <li>• On-going consultation about issues relating to the project</li> <li>• Participation in focus groups</li> </ul>
Other Government Regulatory Authorities	<ul style="list-style-type: none"> <li>• Participation in focus groups</li> </ul>
Chemical Companies	<ul style="list-style-type: none"> <li>• Participation through Avcare</li> <li>• Participation in focus groups</li> </ul>
Avcare Accredited Resellers	<ul style="list-style-type: none"> <li>• Having questionnaires completed by producer clients</li> </ul>

## **3 The Process**

### **3.1 In Brief**

#### **The Consultants**

The project team engaged by ChemCert Australia (Vic) Inc comprised the following personnel:

Mr. Adrian Jones	(Team Leader)	Tom Phillips & Assoc. Pty. Ltd.
Mr. Bob Gray		Gray Consulting Pty. Ltd.
Mrs. Bernadette Swanson		DNRE, Victoria
Mr. Warren Medwell		Warren Medwell & Assoc.

#### **The Reference Group**

The Reference Group to which the project team reported comprised:

Mr. Gerard McEvilly	(Program Manager)	HRDC
Mr. Jonathan Eccles		HRDC
Ms. Margaret Uloth (July-August)		HRDC
Mr. Andrew Pearce		AusHort
Mr. Leon Radunz		Avcare

#### **The Approach**

The project required an approach which assured maximum possible industry awareness. This enabled all interested parties to have the opportunity to contribute to the information base of the project. From this information, base specific actions were identified through analysis and industry consultation. These actions were then prioritised and discussed with manufacturers and regulatory bodies to determine courses of action required for their implementation.

The project was underpinned by a communication strategy and developed in four phases as outlined below.

#### **Communication Strategy**

The project team sought to determine the levels of involvement at which stakeholders were willing and able to give support. They also wanted to provide them with the opportunity with on-going involvement for the duration of the project.

A copy of the Communications strategy can be found in Appendix 1 of this report

### **3.2 Project Outline**

#### **3.2.1 Phase 1 Awareness of the Project**

##### **Level of stakeholder involvement**

After consultation, the project team determined the following levels of stakeholder involvement in the project:



- a. Those groups and individuals requiring direct consultation and involvement with the conduct of the project
- b. Those groups and individuals involved with assisting in the operation of the project
- c. Those groups and individuals who will be informed about the project and invited to contribute
- d. Those groups and individuals who will be informed about the project.

<b>Stakeholder</b>	<b>Level</b>	<b>Communication type</b>
HRDC	d)	Internal reporting
HRDC - Project Steering Committee	a)	Consultation
HRDC - Commodity Group I.D.O. - Commodity Group News	a) c)	Assistance with project Advice and request for contributions
Chemical Industry - distribution of chairs ▪ IAMA ▪ IHD - Consultants - Equipment Manufacturers	c) c) c)	Advice and request for contributions Advice and request for assistance Advice and request for assistance
Avcare - Working group on labels - Sc. & Reg. Affairs - Publicity Group	a) b) b) d)	Consultation and assistance Support and assistance Support and assistance Industry notification

### **Project Advice and Publicity**

The project team developed and distributed a media release and covering letters appropriate to the level of stakeholder involvement

They spoke to all stakeholders with level a) and b) involvement, outlined for them the ways in which they might be involved in the project and, importantly heard from them about related projects that would influence the work to be done by the project team.

Because of the press release, the project was advertised in the rural press, on country radio and in horticultural commodity newsletters.

### **3.2.2 Phase II Data Collection and Analysis**

The design of the data collection enabled coverage of all states, regions and commodity groups. It provided a range of approaches to ensure a wide coverage of respondents and enabled participation/contribution by all interested parties.

### **Modes of Interviewing**

The project team sought extensive industry comment on the current situation regarding labelling of pesticides.

They provided opportunity for comments through:

- Face to face interviews
- Telephone interviews
- Written survey forms
- Survey posted on the HRDC website.

### **Trial of Survey**

The project team developed a producer questionnaire which they trialled with producers from some major horticultural industries. This was done to ensure questions were unambiguous and to elicit the type of information that the project sought.

In the light of producers' comments and those of some industry development officers, the team developed the final questionnaire that was sent out to all participants.

A copy of the questionnaire can be found in Appendix 2.

### **Interviewers**

The team sought to involve three groups who would conduct the surveys:

- The industry development officers of horticultural producer groups
- Accredited Agsafe chemical resellers in areas of significant horticultural activity
- ChemCert trainers who present farm chemical education to the range of horticultural producers in each state and territory.

The project team considered that through the industry development officers they would cover producers in each of the commodity groups that contribute to AusHort, the instigators of the project.

They saw the ChemCert trainers as covering a broad sample of producers whose responses should give a good indication of label concerns of producers.

The team saw that the resellers, in their role as advisers on farm chemicals, would be useful agents to get producers to express their concerns.

Twenty-six industry development officers agreed to have 200 questionnaires completed. Along with the questionnaires, the participating officers received advice in interviewing producers. They were asked to cover large and small producers.

We invited ChemCert trainers experienced in dealing with horticulturists to participate in the project and on their agreement, sent them advice about interviewing producers.

We asked them to cover producers from a range of horticultural industries in their district. They were to interview large and small producers and not to restrict their interviews to those who had completed the ChemCert course.

Twenty-eight experienced ChemCert trainers offered to have 600 questionnaires completed.

Thirty Agsafe accredited resellers agreed to have 150 questionnaires completed They were sent advice for conducting the interviews.

### **Returns**

Industry development officers returned 70 questionnaires.

ChemCert trainers returned 269 completed questionnaires.

Agsafe resellers returned 72 completed questionnaires.

Of the 950 surveys distributed, 411 were completed.

### **Returns from Website**

No responses came by means of the questionnaire posed on the HRDC website.

### **Database**

Responses to the questions were coded, collated and then analysed with the assistance of a specially developed database template and query program.

### **Data Analysis**

Detailed analysis of the data response will be found in section 3 of this report.

### **Issues for Producers**

Through the data analysis, the team identified 19 issues for producers most concerning chemical labels directly but others affecting support mechanisms for improving chemical use. The identified issues will be found in Section 4 of this report.

## **3.2.3 Phase III Data Confirmation and Prioritisation**

### **Focus Groups**

In order to validate the survey results and assist in the development of strategies to address the issues identified, the project team conducted 13 focus groups.

### **Objectives**

The objectives of each focus group were:

- To confirm the results derived from the data collection phase.
- To canvass for other issues which may not have been gathered by the data collection process.
- To establish some priority ranking of the issues.
- To seek possible solutions to the issues which were seen as priorities..

### **Group Participants**

The focus groups involved producer representatives, agrochemical company representatives and representatives of state and federal regulatory bodies.

The groups were of three types:

- Those composed of producer representatives (P)

- Those composed of regulatory and agrochemical representatives (R&C)
- Those composed of producers, chemical company and regulatory representatives(M)

The team wanted to give each group of stakeholders the opportunity to speak freely.

However, because of time and budget constraints, many groups were mixed but worked effectively.

The following table indicates the location, time and type of each focus group.

No	Location	Date	Type	No	Location	Date	Type
1	Melbourne	6.4.00	P	8	Adelaide	1.5.00	R&C
2	Melbourne	7.4.00	R&C	9	Virginia	1.5.00	P
3	Sydney	10.4.00	R&C	10	Mildura	2.5.00	P
4	Brisbane	11.4.00	M	11	Griffith	3.5.00	P
5	Bundaberg	12.4.00	P	12	Shepparton	4.5.00	P
6	Darwin	14.4.00	M	13	Launceston	30.5.00	M
7	Perth	17.4.00	M				

### **Issues Confirmed**

The focus groups confirmed the list of issues identified by the project team from the survey.

They also suggested strategies for addressing the issues and mentioned possible barriers to strategies suggested by the project team.

This input has helped shape the final recommendations and proposed strategies for the project.

A report of the proceedings of each focus group can be found in Appendix 3.

### **3.2.4 Phase IV Feasibility Review**

The project group had identified from the producers' responses to the survey 19 issues affecting chemical use.

They had confirmed these issues in the focus groups with a range of producers, chemical company representatives, regulatory personnel and resellers.

Before making recommendations and proposing strategies to address these, the team needed to review their draft action plan with regulatory authorities and chemical companies.

Both groups were not only significant stakeholders in the project but were also the groups that would determine the feasibility of the project team's recommendations.

### **Review Meeting**

On July 14, the project team met with representatives of NRA, Avcare and HRDC to review the team's draft proposals.

### **Interim Report**

All stakeholders were given the opportunity as well to influence the feasibility review when they were sent a copy of an interim report on the project in August.

Comments from the Review meeting and the interim report have influenced the final recommendations of the project.

## **3.2.5 Phase V Reporting**

### **Reference group**

The project group has reported nine times to the reference group and met with them via teleconference four times.

### **Milestone report**

The report presented in June entitled *Initial analysis of data and findings of survey* marked the successful completion of the second milestone of the project.

### **Final Report**

This final report is a fully documented account of the project detailing:

- Project methodology.
- Stakeholder involvement.
- Report of findings from data collection phase.
- Analysis of data and outcomes from Focus Group deliberation.
- Prioritised list of actions for implementing the outcomes.
- Report of feasibility review from the initial consultation with decision makers who will ultimately be responsible for implementing the project recommendations.
- Framework for addressing project recommendations, including prioritisation, timeframes, costs and funding.

## 4 Results Data Response and Analysis

### Qualitative Analysis

The Improving Chemical Labels producer survey sought to discover the label issues for as broad a group of horticulturists as possible.

It looked for relationships to a range of factors such as size of enterprise, education, and practice when reading labels.

While the information derived from the survey would admit of some quantitative analysis the analysis developed here is largely qualitative.

The survey has identified significant label and chemical use issues for horticulturists. It will be for further projects to analyze more rigorously growers' problems and the database developed through this project would be a useful starting point.

### 4.1 Survey Results

We present results in order of the questions asked in the questionnaire

#### 4.1.1 Identification

The team has contact details of each participant so that an individual may be re-interviewed if necessary.

The breakdown of interviews according to region indicates the geographic coverage of the questionnaire.

#### 4.1.2 Number of responses according to region

	Number
Riverina	17
NSW North Coast	21
Sydney	6
NSW Central Coast	8
Qld, South East	41
Qld. Central	21
Qld Northern	5
Melbourne	31
Goulburn Valley	14
Gippsland	18
Vic. North East	1
Vic. Central	9
Sunraysia	40
Adelaide	14
SA South East	18

Tas. Southern	18
Tas. North Coast	9
WA	100
NT	20
Total	411

The survey covered producers in most significant horticulture areas with the exception of the Kimberley region of WA.

#### 4.1.3 Number of responses according to commodity

Three answers per respondent were possible:

<b>Enterprise</b>	<b>Number</b>	<b>Enterprise</b>	<b>Number</b>
Citrus	64	Asparagus	3
Bananas	14	Potatoes	12
Stonefruit	56	Macadamia	4
Wallnuts	2	Amenity horticulture	19
Pome fruit	19	Table grapes	33
Service industries	13	Organic farming	1
Ornamentals	4	Native flowers	3
Vegetables	74	Rock mellons	5
Berries	9	Horticulture	9
Viticulture	19	Avocados	6
Persimons	2	Olives	7
Mangoes	15	Egg fruit	1
Nuts	3	Pyrethrum	1
Nursery	34	Cotton	1
Cut flowers	17	Cherries	1
Herbs	4	Rambutan	1
Tomatoes	8	Carambola	1
		Turf	4
		Pineapple	1

The respondent described their enterprises in their own words and it is their descriptions that are used in the table.

#### 4.1.4 Number of responses according to perceived size of enterprise

<b>Perceived size</b>	<b>Number</b>
Large	74
Medium	183
Small	143
No answer	11
	411

The size of enterprise was according to the growers' perception. The team wanted to see if issues changed with the size of enterprise.

#### 4.1.5 Number of responses according to whether respondent does the spraying

<b>Response</b>	<b>Number</b>
Yes	338
No	58
No answer	5

#### 4.1.6 Number of responses according to whether staff are employed to do spraying

<b>Response</b>	<b>Number</b>
<b>Yes</b>	180
No	21
No answer	10

#### 4.1.7 Number of responses according to training for spray operators

Three answers per respondent were possible

<b>Training</b>	<b>Number</b>	<b>Training</b>	<b>Number</b>
ChemCert	303	Not known	16
None, little experience	3	As required	6
None, experience < 5 years	8	Advanced spray course	4
None, experience 5-10 years	5	Short courses (undefined)	12
None, experience > 10 years	46	Licenced pesticide applicator	13
No answer	5	Aerial applicators licence	3
Informal on farm	42	Agsafe accreditation	3
College/University	18	Farm safety course	2

The description of the training came from the respondent. The team wanted to see if issues for the trained/not trained differed.

#### 4.1.8 Number of responses according to difficulty reading a label in English

<b>Difficulty reading a label in english</b>	<b>Number</b>
Yes	18
No	385
No answer	8
	411

Because the survey had just a 2% response from producers with difficulties reading the label in English, the recommendations to be made by the team will not address



specifically the needs of this important section of the horticulture workforce. However, several of the recommendations if implemented would assist in addressing problems of this group.

4.1.9 Number of responses according to confidence to do the job based on experience and education

<b>Confidence based on experience and education to do your job</b>	<b>Number</b>
Very high	173
High	132
Good	69
Average	15
Doubtful	11
No answers	9
Cautious	2
	411

**The team wanted to investigate if there was a relationship between confidence and training. Chemicals used**

The respondents were given the opportunity to list the herbicides, insecticides and fungicides that they used.

There was such a vast array of chemicals mentioned that the team has decided there would be limited value in listing them in the report.

4.1.10 Number of responses according to equipment used for applying herbicides

<b>Equipment</b>	<b>Number</b>
Boom sprayer	237
Hand gun	81
Knapsack sprayer	105
Power herbie/CDA	26
Tractor spray unit (ill defined)	17
None	12
Enviromister	14
Agricultural chemical irrigator	1
Helicopter/Plane	1

4.1.11 Number of responses according to equipment used for applying fungicides and insecticides

<b>Equipment</b>	<b>Number</b>
Airblast sprayer	115
Knapsack sprayer	49

Mister	62
Turbomiser	20
Helicopter/ Plane	1
Hand gun	40
Electrostatic sprayer	5
CDA	14
Boom sprayer	140
Tractor spray unit ( ill defined)	5
None	21
Agricultural chemical irrigator	1

4.1.12 Number of responses according to whether producer sprays 'dilute' or 'concentrate'

Spray 'dilute' or 'concentrate'	Number
<b>Dilute</b>	<b>325</b>
Concentrate	39
Both	33
No answer	14
	<b>411</b>

The team wanted to see if issues for those who sprayed 'dilute' or 'concentrate' differed.

4.1.13 Number of responses according to the parts of the chemical label considered most important.

Four answers per respondent were possible

Part of label	Number	Part of label	Number
Rate	224	General instructions	14
Safety directions	97	First Aid instructions	5
Withholding period	87	Timing	5
Signal heading	80	Use by date	4
Directions for use	65	Date of manufacture	3
All	59	Rate/ha & mls/100 litres	2
Registered uses	47	Environmental statement	2
Active constituent	38	Relative oral/dermal toxicity	2
Compatibility	36	Storage	2
Name	26	Where registered	2
Health warning (unspecified)	6	Mixing instructions	1
Chemical group	6	Water volume	1
Critical comments	5	Anticholinesterase	1
Contra indications	5	Calibration	1
No answer	4	Re-entry period	1

Disposal	2	MSDS	1
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#### 4.1.14 Responses according to parts of the label to which producers refer

Before spraying you read:	Number
Don't bother to read any part	8
All	162
Parts	173
Read all new label	68

While 39% read the entire label, 42% read parts of the label. The 17% who read new labels are made up of some who don't read a label with which they are familiar or who just read parts of that label.

#### 4.1.15 Which parts are read.

Three answers per respondent were possible

Part	Number	Part	Number
Rate	235	Chemical group	47
Withholding period	91	Critical comments	21
Safety Directions	75	Signal heading	10
Directions for use	49	Weather	6
Compatibility	43	Use by date	3
Refer to all	38	No answer	2
Registered uses	30	"Return times"	2
Mixing instructions	19	Name	1
Active constituent	16		
Health warning (unspecified)	7		

#### 4.1.16 Responses according to problems that producers have with the chemical label

Three answers per respondent were possible

We have included here only those problems mentioned five or more times

Problem	Number
Timing of application	133
Recognising a poison schedule	75
Small print	69
Rate to use	49
No response	27
Converting area and volume rates	18
Active constituent	17
No problem stated	16
Provision of MSDS	14
Compatibility information	7
Labels fall off container	6
Personal protective information does not match that found on MSDS	6

Wording of label is hard to read	6
Not registered for use on crop	5

#### 4.1.17 Responses according to whether or not the label provides enough information for use

Enough information for use	Number
Yes	269
No	121
No answer	10
Too much	11
	411

65% of respondents considered the label carried enough information for use, while 29% considered the label had insufficient information.

#### 4.1.18 Responses according to extra information producers thought would help in getting best use from the chemical

Three answers per respondent were possible.

We have include here only those requests made five or more times

Extra information	Number	Extra information	Number
No answer	54	Safety equipment	6
Need MSDS issued	10	Most suitable applicator	8
Water quality	13	Use of symbols	6
Rate/ha and vol/100 litres	34	Key information to be read before use	5
Mixing instructions	8	Growth stage and optimal spraying time	7
Maximum concentration legally allowed	8	Water rate to be provided	10
Weather conditions	20	Re-entry periods	7
No extra information needed	98	More advice on surfactants	7
Compatibility	63	Give dose rate for each crop	7
Canopy volumes	6	More guidance where there is a range for the rate	7
Rainfast	9	Make knapsack rates easy to find	5
Add schedule number to signal heading	6	Need NT registration listed on labels	5

#### 4.1.19 Responses according to any changes that could be made to the label to assist producers in their use of chemicals

Three answers per respondent were possible

We have listed here only those requests made five or more times

<b>Changes</b>	<b>Number</b>	<b>Changes</b>	<b>Number</b>
No answer	90	Put numbers with poison schedules	17
Rate/ha and volume /100 litres	68	More consistent layout of the label	14
Canopy volume	58	Labels need to survive with readability	12
Compatibility information	29	Language of labels to make them easier to read	12
Easier to read (size of print)	27	Parts of the labels highlighted, in colour	6
Need MSDS	13	Advice on best application equipment	6
No changes needed	9	Rate specific to crop	6
Use on other crops	9	Instructions for adding surfactants	5
Signal heading easier to read	5	Provide booklet in pouch	5
Set of key facts that need to be read before use	5	Water proof sheets with full label details attached to container	5
		Rates to use under differing pest pressures	5

#### 4.1.20 Responses according to any other comments that producers have in relation to labels and chemical use.

Three answers per respondent were possible.

We have listed here only those comments made five or more times.

<b>Comment</b>	<b>Number</b>	<b>Comment</b>	<b>Number</b>
No answer	101	Need consistency in label format	11
No further comment needed	85	Directions for use booklet in pocket rather than stuck to label	8
Label comes off container	25	Safety information should stand out more	8
Signal headings numbered	21	There is adequate information	7

Need information on disposal of chemicals and containers	18	It all depends on the training of the applicators	6
Improve packaging design for durability of label to survive decanting and physical damage	15	Problem with litres/ha when we need a dilution rate	5
Need cross referencing for compatibility	15	Need to develop insecticide rates compatible with IPM	5
Plain english	11	Need chemicals with broader range of registration	5
Improve size of print	8		
Need to know clearly how to get MSDS	7		

### **Raw responses**

A complete list of the raw responses to questions 4.3 (problems), 4.5 (extra information), 4.6 (changes) and 5.1 (other comments) can be found in Appendix 4.

## **4.2 Development of major issues**

### **4.2.1 Process**

The project team has identified 19 issues for producers.

They identified these after detailed examination of the responses to the survey questionnaire.

The team analysed the collected responses to questions 4.3, 4.5, 4.6 and 5.1 in the questionnaire.

They had structured these questions in such a way that producers' concerns with the chemical label could be verified by questioning them in different ways

### **4.2.2 Listed issues**

We list the following issues in order of the number of responses relating to that issue. We indicate the kinds of comments that gave rise to the issue.

We shall present a fuller description of each issue later in the report when making recommendations to deal with that issue.

### **4.2.3 Need to improve readability of the label**

This arose from such comments as:

- Small print
- Cant read batch number
- Easier description of chemical groups
- Use symbols on labels
- Colour coding
- Safety information should stand out more.

*Number of Responses:*

**278**

#### 4.2.4 Need to clarify rates for a range of situations

This arose from such comments as:

- Converting area and volume rates and vice versa
- How to reduce water volume
- Canopy volumes
- Provide conversion rate concentrate/tank size
- Tree crop rate needed

*Number of respondents:*

226

#### 4.2.5 Need to address matters relating to the efficacy of the chemical

This arose from such comments as:

- Timing of application
- Use in differing weather conditions
- Instructions for adding surfactants
- Need preferred method of application for a particular crop
- Does UV affect sprays in a greenhouse?

*Number of Responses:*

171

#### 4.2.6 Need better information on compatibility.

This arose from such comments as:

- Compatibility
- Need cross referencing for compatibility
- Better mixing instructions

*Number of Respondents:*

116

#### 4.2.7 Need clearer presentation of poison schedule.

This arose from such comments as:

- Recognising a schedule 7
- Make signal heading more prominent and easier to read
- Signal headings numbered
- Need colour code for poison schedule

*Number of Responses:*

104

#### 4.2.8 Need to address matters associated with minor use

This arose from such comments as:

- Not registered for use on crop
- Off label use – info on requirements
- Use on other crops
- Ornamental growers do not have many registered chemicals
- Prefer individual vegetable names to be listed.

*Number of Responses:*

62

#### 4.2.9 Need to better address OH&S matters

This arose from such comments as:

- Define minimum personal protective equipment
- Define re-entry periods
- Safety aspect especially protective clothing to be stressed
- Child proof lids
- Want info on toxicology, LD<sub>50</sub>

*Number of Responses:*

48

#### 4.2.10 Need to improve the durability of the chemical label

This arose from such comments as:

- Labels fall off containers
- Labels need to survive with readability
- Need chemical name permanently on container
- Packaging design for durability
  - Decanting
  - Physical damage
- Booklet pocket for directions, glue destroys label info.

*Number of responses:*

47

#### 4.2.11 Need better access to and modification of MSDS

This arose from such comments as:

- Provision of MSDS
- An issued MSDS is needed
- MSDS
- Need to get MSDS (how?)

*Number of responses:*

39



#### 4.2.12 Matters affecting packaging

This arose from such comments as:

- Clear strip down side of drum to see how much is left
- With multi packs all info should be with each pack
- Some containers very difficult to pour
- No more metal containers, all plastic
- Granules, not powders in water soluble bags

*Number of Responses:*

34

#### 4.2.13 Need to add specific information to the label

This arose from such comments as:

**No batch number**

**Company contact number for advice (not emergency)**

**Need NRA numbers on all labels**

**More information on phytotoxicity**

**Contact number for language interpreter**

*Number of Responses:*

27

#### 4.2.14 Need better definition of and information on residual times

This arose from such comments as:

- Lack of info on residual
- Residual times
- Need information on withholding period
- Need to lengthen withholding period to comply with export market requirements
- Withholding period needs to be better defined.
- *Number of responses:*

24

#### 4.2.15 Need to improve availability of the label

This arose from such comments as:

- Lose label after you take it off
- Put key info from MSDS on label
- An on-line label with detailed info on specific crops
- More info needed on all chemicals
- Internet site for all labels

*Number of Responses:*

**22**

#### 4.2.16 Matters affecting training

This arose from such comments as:

- Video on chemical and how to use
- All depends on training of applicators
- All farmers should do FCUC
- Streamline learning and record keeping
- Some growers can't read or write English

*Number of Responses:*

19

#### 4.2.17 Need to better address environmental matters

This arose from such comments as:

- Need more on non target damage
- Disposal of packaging
- Need environmental impact information
- Less potent alternatives are required

*Number of Responses:*

16

#### 4.2.18 Need better information on resistance management.

This arose from such comments as:

- Some labels don't have chemical group
- Lack of info on resistance management
- Insect sprays too expensive and not doing the job

*Number of Responses:*

**12**

#### 4.2.19 Need to better address matters associated with IPM

This arose from such comments as:

- IPM advice lacking
- Information on non chemical controls
- Compatibility with commercial biologicals
- Need to develop insecticide rates compatible with IPM

*Number of Responses:*

**11**

#### 4.2.20 Matters affecting support services

This arose from such comments as:

- Too many sources of information
- Need to know chemical company's responsibility
- Point of sale improvement
- Companies need more staff on the ground with awareness of growers' situations

*Number of Responses:*

9

#### 4.2.21 Matters affecting regulations and legislation.

This arose from such comments as:

- Info on changes to regulations
- Too easy to obtain
- No register for purchase
- Clearer advice about not observing restrictions

*Number of Responses:*

7

### **4.3 Issues and Focus Groups**

The issues as outlined were confirmed by the focus group process which was described in the previous section of this report.

### **4.4 Survey analysis and Linkages**

Having identified the issues of importance to horticulturists, the team sought to link the issues with particular sets of information drawn from the survey.

The team also looked at the cross linkage of some sets of information. Tables of the linkages are presented in Appendix 5.

#### 4.4.1 Issues for enterprises

**Appendix 5 Table 1**

**For most enterprises, support for issues followed the general pattern which starts with the Readability issue and moves through to the issue surrounding Legislation.**

Issues for vegetable growers and nursery enterprises seem to have a more even spread of support.

The issues of Determining Rates for particular situations and Efficacy of the chemical seem to have importance for citrus and stone fruit growers.

#### 4.4.2 Issues for perceived size of enterprise

**Appendix 5 Table 2**

The issues do not seem to differ with perceived size of enterprise.

#### 4.4.3 Issues and level of training

##### **Appendix 5 Table 3**

Again, the issues do not seem to differ for those with/without formal training.

#### 4.4.4 Issues for those who dilute/concentrate spraying

##### **Appendix 5 Table 4**

**The issues for those who spray 'concentrate' seem to have a more even spread of support than for those who spray 'dilute'.**

#### 4.4.5 Linkage: Training and confidence in doing the job.

##### **Appendix 5 Table 5**

There is no clear evidence from the results that confidence in doing the job depends upon training.

## 5 Recommendations

### Discussion of issues

**We present a brief discussion of each issue which will enhance the reader's understanding of the problem facing the producer.**

The discussion of each issue will be followed by recommendations to address the issue.

#### 5.1.1 Need to improve readability of the label

The issue embraces matters such as size of print, complexity of language and grouping of information.

Producers find the language inconsistent and indirect and hence it is difficult for them to act on the label advice.

They would be helped by the re-grouping of some label information so that they would be clearer about what the label requires/recommends.

#### **Recommendations:**

- That the NRA review process of labelling and address consistency of language
- That the problem of complex language on the label be addressed to improve readability and correct interpretation
- That like information be grouped on the label such as:
  - All safety information
  - Critical comments with general instructions
  - Advisory statements
  - Mandatory statements
- That a minimum print size be established to improve ease of reading the label

#### 5.1.2 Need to clarify rates for a range of situations

While producers have found the matter of applying sufficient volume of spray to horticultural crops a challenge for a long time, the possibility of spraying 'concentrate' has highlighted the need to help producers better determine the rate of chemical required.

Producers indicated through the survey that they wanted a means of converting rate/ha to ml/100 litres and many wanted a water rate to be given.

The new model label developed by the Avcare working group does not address the matter of the conversion and intentionally did not offer a water rate.

There were also issues mentioned by producers in relation to concentrate spraying that need to be clarified such as potential phytotoxicity efficacy and residues.

The introduction of more sophisticated application equipment provides equipment manufacturers with the opportunity to develop better extension services to producers that will ensure effective application of chemical.

**Recommendations:**

- That the implementation of training to introduce the Model Label developed by the Avcare Working Group be monitored for grower acceptance. Producers' concerns to be reviewed are:
  - Dilution rate
  - Phytotoxicity
  - Residues
  - Efficacy
- That the introduction of the model label be supported with a major extension campaign aimed at achieving grower acceptance of the label advice.
- That the model label approach to determining label rates be included in producer training programs, particularly ChemCert.
- That equipment manufacturers and retailers be encouraged to assist growers in the effective use of application equipment to achieve accurate and consistent rates of application.

**5.1.3 Need to address matters relating to the efficacy of the chemical**

A company needs to demonstrate the efficacy of a chemical for particular uses before that chemical can be registered for sale and use.

Producers want better grouping of efficacy information on the label so that requirements for particular crops and uses are clearer.

They also want a better level of technical support from companies so that they can have access to efficacy data beyond that which might be given on a particular chemical label for a particular crop.

**Recommendations:**

- That directions for use information be provided in total for each particular crop or situation in a single panel of the label.
- That additional information to enhance effective use be provided from other sources by chemical companies. Such information could be rainfastness or best time of day for application.

**5.1.4 Need better information on compatibility.**

Providing and accessing suitable compatibility information has been a problem for chemical companies and producers for a long time.

Companies are wary about exceeding the warranty that they can offer producers.

Some producers find the compatibility information that is on labels hard to interpret.

Producers use chemicals from different companies and need access to advice about effective mixing of these chemicals.

There is anecdotal information on compatibility with resellers and producer groups at different levels.

The compatibility problem has increased when foliar fertilisers are added into the equation.

**Recommendations:**

- That the HRDC encourage commodity groups to work with chemical companies to develop appropriate compatibility information for their particular industry sector.
- That compatibility information be presented on the label in a more readable format.

**5.1.5 Need clearer presentation of poison schedule.**

A reassuring observation that can be made from the survey results is that there is considerable concern among producers for their own safety when handling chemicals. However, they indicated that they have trouble in getting a clear safety message from the signal headings and the indication of the poison schedule of the chemical. Many producers through the survey and in the focus groups asked that the number seven be re-introduced to the dangerous poison (schedule 7) signal heading. Some producers indicated that all poison schedule numbers should be on the label. NRA have indicated that they would be unwilling to restore the numbering.

**Recommendations:**

- That the description relating to the poison schedule be made more obvious on the label
- That the National Drugs and Poisons Schedule Committee through the Department of Human Services and Health issue a media release to industry bodies and resellers listing the new signal headings for agricultural chemicals
- That education and training programs be revised to improve growers' understanding of the recent changes to the description of signal headings.

**5.1.6 Need to address matters associated with minor use**

As the range and diversity of horticultural crops increases and concerns about residues and OH& S issues grow, producers need to have a systematic way to extend registration of a product to meet new situations. A commodity group could work out with its producers the products for which minor use permits would be sought.

**Recommendations:**

- That commodity groups identify minor use situations and apply nationally for minor use approval through Crop Protection Approvals Ltd.

### 5.1.7 Need to better address OH&S matters

23% of responses as to what part of the chemical label was considered most important related to personal safety. 15% of responses to parts of the label read also related to personal safety.

As producers become more aware of the need to attend to the personal safety and that of employees, they are looking to the chemical labels to provide clearer advice in these matters.

Producer participants in the focus groups spoke in particular of the need for greater provision of re-entry periods on chemical labels.

They also reported inconsistency between advice about poisoning received from the Poisons Information Centre and the advice found on the chemical label.

The new Hazardous Substances Regulations will encourage producers to minimise risk when handling chemicals and so contribute to producer safety. There needs to be clearer linkages between the requirements of these regulations and chemical label information.

#### **Recommendations:**

- That safety directions be made more explicit
- That label advice of First Aid be reviewed in the light of current information from the Poisons Information Centre
- That information relating to Hazardous Substance recognition be included on the label
- That specific information relating to re-entry periods is provided for all chemicals.

### 5.1.8 Need to improve the durability of the chemical label

Producers need the chemical label to be able to be read in full until the container is finished.

Participants in the survey and focus groups indicated that some labels did not survive the trip from the resellers or the opening of the label especially when the whole label was fixed to the container.

A greater number of producers reported that the label did not survive the on-going use of the chemical.

#### **Recommendations:**

- That directions for use be provided as a booklet in a pocket attached to the chemical container
- That manufacturers be encouraged to net containers for shipment to resellers.



### 5.1.9 Need for better access to and modification of MSDS

With the increased awareness of producers about personal safety, the requirements of Hazardous Substances Regulations and the need to comply for QA programs, there is a need for better access to the MSDS.

Furthermore, producers want the MSDS in a form better suited to the needs of their workplace.

#### **Recommendations:**

- That AvCare assist manufacturers to work with resellers to devise a more workable system for the provision of MSDS to growers
- That the structure and content of the MSDS be re-designed to be more useful to growers
- That each label carries a website address for access to MSDS.

### 5.1.10 Matters affecting packaging

Growers indicated difficulties with pouring from some containers. They also spoke of problems of having to store metal containers for some time.

#### **Recommendations:**

- That through education and training growers be encouraged to use safer formulations and transfer systems as well as environmentally less hazardous packaging
- That the drumMUSTER contact number be shown on the label
- That the ChemClear number be shown on the label when the system is established

### 5.1.11 Need to add specific information to the label

In the survey and focus group discussion, growers indicated the need for further information beyond that provided on the label.

They wanted the label to indicate where this information might be available and how they could access it.

Some producers indicated that the batch number was not always clearly printed on labels and that was needed increasingly for QA programs.

#### **Recommendations:**

- That manufacturers provide both phone and website contact details for technical and product support information
- That the provision of legible batch numbers on labels and on individual packs of multi-pack packaging be required and enforced by the NRA

### 5.1.12 Need better definition of and information on residual times

Respondents to the survey frequently spoke of the importance of residual times.

The project team sought to determine within focus group discussion what the growers in the survey might be referring to.

It appears that there is a problem for growers in their understanding of the various restriction periods indicated on the label. At the same time, they want more information about the time for which chemicals are effective so that they can manage pest problems more effectively.

**Recommendations:**

- That inconsistencies in withholding periods between pesticides with the same active constituents be reviewed
- That extension and training programs be improved to develop growers' understanding of such terms as: MRL/WHP, re-entry period, plant back period
- That manufacturers provide better support material relating to efficacy and climatic conditions for chemical application.

**5.1.13 Need to improve availability of the label**

Increasingly, growers are planning their chemical usage well in advance. The information on the label is an important part of that planning and they need on-going access to a current label.

Programs such as the NRA's Existing Chemical Review Program (ECRP) highlight the need for the grower to be using the currently approved label.

Growers also realise that they need access to further technical information that supports the label.

**Recommendations:**

- That manufacturers ensure that label information is made available for planning chemical use via electronic media
- That manufacturers ensure that changes to existing product labels are clearly communicated to resellers and growers.

**5.1.14 Matters affecting training**

Response to the survey indicated that growers saw the value of training and the need for educational resources to improve chemical use.

The project team in discussion with those attending the focus groups realised the importance of training for addressing several of the issues for growers. Training is part of some the recommendations already mentioned.

Chemical companies singly and through Avcare provide support material for growers. These resources could be revised and expanded in the light of issues and recommendations raised in this project.

**Recommendations:**

- That outcomes of the project be communicated to ChemCert Australia so that existing training programs for horticulturists can be revised

- That education resources be revised to support the extension of the outcomes of the project.

#### 5.1.15 Need to better address environmental matters

Regulators in response to community concerns require growers to avoid off-target damage in its different forms.

Growers want a healthier environment to sustain their production.

The chemical label needs to give up to date advice to enable the grower to avoid environmental contamination.

#### **Recommendations:**

- That label information be reviewed to ensure disposal of concentrate and rinsate is in line with current recommendations

#### 5.1.16 Need better information on resistance management.

Growers in the survey and focus groups showed they were aware of the resistance issue but wanted simpler and more direct advice on the label and in support literature to enable them to manage use of a given chemical.

#### **Recommendations:**

- That manufacturers include clear label information which enhances the responsible use of the product to limit the development of resistance.

#### 5.1.17 Need to better address matters associated with IPM

IPM has been taken up across the horticulture industry.

A small number of responses to the survey supported by some discussion at the focus groups indicated the need for the chemical label to offer more guidance when using that chemical within an IPM. Program. Avcare in discussion with the project team pointed out the difficulty of giving much IPM advice on the label because of all of the factors that would have to be mentioned.

#### **Recommendations:**

- That manufacturers include label information which enhances the responsible use of the product to encourage the practice of IPM
- That producer groups develop regional IPM strategies and encourage growers to look to these groups for relevant information.
- That producer groups encourage their members to become part of existing IPM monitoring programs such as Cropwatch.

#### 5.1.18 Matters affecting support services

As part of being in the 'information age', all stakeholders with an interest in safe and effective chemical use provide an increasing amount of information to growers.

Some growers have benefited from this while others are somewhat bewildered and confused when the information from different sources does not seem to be consistent.

**Recommendations:**

- That a working group of all stakeholders be established to co-ordinate the provision of consistent information on chemical use to producers

**5.1.19 Matters affecting regulations and legislation.**

Revision of the legislation affecting chemical, sale and use has extended the grower's need to comply with regulations.

The chemical label needs to be of more help to the grower to assist with compliance.

The establishment of the NRA came about with the revision of legislation affecting registration of chemicals.

The establishment of this single authority has provided a mechanism for addressing many of the issues raised in this project.

The NRA in setting registration requirements needs to consider in a structured way the needs of growers along with the requirements of other stakeholders.

There is also need for the Registration Liaison Committee established by NRA to expedite the task of harmonising Control of Use legislation.

**Recommendations:**

- That a working group be established to consult with NRA to incorporate proposed recommendations from this project into the revised Code for Labelling of Agricultural Products
- That labels highlight specific state requirements for Control of Use.
- That harmonisation of Control of Use legislation between the States be expedited
- That a consultative group of stakeholders in chemical labelling with significant grower representation be developed by the NRA to address concerns and issues identified through this project.

The project team recommend a series of strategies that will take up the recommendations presented . These will be found in section 6 of the report.

## 6 Key Outcome, Strategies and Action Plan

### **Sustain producers' concerns**

That there are 45 recommendations arising from this project indicates the need to address the concerns of horticulturists about chemical use is long overdue.

This report will propose strategies that will ensure none of the recommendations is lost. Some of the recommendations can be addressed in the short term. Others will be addressed in the long term.

Implementation strategies for both will require reporting to AusHort to indicate outcomes.

### **6.1 Key Outcome & Strategy**

The project team proposes the establishment of an Implementation Working Group (IWG) to ensure that the recommendations made in this project report are progressed.

The IWG would become the body responsible for implementing the priorities of the report and working with the various stakeholder bodies to achieve outcomes for the Horticultural Industries.

#### **Key Outcome**

AusHort to establish the Implementation Working Group and to define its charter and operational detail

The IWG would be required to work with the various stakeholder groups to implement the recommendations as outlined below.

6.1.1 IWG to work with NRA to achieve the following outcomes:

#### **Strategy**

- 1. IWG to consult with NRA about incorporation of proposed recommendations from this project into the revised Code for Labelling of Agricultural Products.**
- 2. IWG to consult with NRA about the implementation of the following recommendations and report to AusHort within 6 months.**
  - That information relating to Hazardous Substance recognition be included on the label.
  - That the provision of legible batch numbers on labels and on individual packs of multi-pack packaging be required and enforced by the NRA.
  - That label information be reviewed to ensure disposal of concentrate and rinsate is in line with current recommendations.

**3. IWG to consult with NRA to develop ways of implementing the following recommendations.**

- That the NRA review process of labelling address consistency of language.
- That the problem of complex language on the label be addressed to improve readability and correct interpretation.
- That like information be grouped on the label such as:
  - All safety information.
  - Critical comments with general instructions.
  - Advisory statements.
  - Mandatory statements.
- That a minimum print size be established to improve ease of reading the label.
- That directions for use information be provided in total for each particular crop or situation in a single panel of the label.
- That the description relating to the poison schedule be made more obvious on the label.
- That specific information relating to re-entry periods is provided for all chemicals.
- That label advice of First Aid be reviewed in the light of current information from the Poisons Information Centre.
- That directions for use be provided as a booklet in a pocket attached to the chemical container.
- That labels highlight specific state requirements for Control of Use.
- That a consultative group of stakeholders in chemical labelling with significant grower representation be developed by the NRA to address concerns and issues identified through this project.

6.1.2 IWG to work with AvCare to achieve the following outcomes:

**Strategy**

**1. IWG to work with Avcare to implement the following recommendations and report to AusHort within 6 months.**

- That the implementation of training to introduce the Model Label developed by the Avcare Working Group be monitored for grower acceptance. Producers' concerns to be reviewed are:
  - Dilution rate
  - Phytotoxicity
  - Residues
  - Efficacy
- That the introduction of the model label be supported with a major extension campaign aimed at achieving grower acceptance of the label advice.
- That each label carries a website address for access to MSDS.
- That the drumMUSTER contact number be shown on the label
- That manufacturers ensure that label information is made available for planning chemical use via electronic media.

**2. IWG to consult with Avcare to develop ways of implementing the following recommendations including examination of on-line support systems.**

- That additional information to enhance effective use be provided from other sources by chemical companies. Such information could be rainfastness or best time of day for application.
- That compatibility information be presented on the label in a more readable format.
- That manufacturers be encouraged to net containers for shipment to resellers.
- That Avcare assist manufacturers to work with resellers to devise a more workable system for the provision of MSDS to growers.
- That the ChemClear number be shown on the label when the system is established
- That manufacturers provide both phone and website contact details for technical and product support information.
- That manufacturers provide better support material relating to efficacy and climatic conditions for chemical application.
- That manufacturers ensure that changes to existing product labels are clearly and effectively communicated to resellers and growers.
- That manufacturers include clear label information which enhances the responsible use of the product to limit the development of resistance.
- That manufacturers include label information which enhances the responsible use of the product to encourage the practice of IPM.

6.1.3 IWG to work with ChemCert to achieve the following outcomes:

**Strategy**

**1. IWG to work with ChemCert to develop ways of implementing the following recommendation.**

- That the model label approach to determining label rates be included in producer training programs, particularly ChemCert.
- That education and training programs be revised to improve growers' understanding of the recent changes to the description of signal headings.
- That through education and training growers be encouraged to use safer formulations and transfer systems as well as environmentally less hazardous packaging.
- That outcomes of the project be communicated to ChemCert Australia so that existing training programs for horticulturists can be revised.
- That education resources be revised to support the extension of the outcomes of the project.
- That extension and training programs be improved to develop growers' understanding of such terms as: MRL/WHP, re-entry period, plant back period.

6.1.4 IWG to work with Equipment Manufacturers to achieve the following outcomes:

**Strategy**

**1. IWG to work with equipment manufacturers to develop ways of implementing the following recommendation.**

- That equipment manufacturers and retailers be encouraged to assist growers in the effective use of application equipment to achieve accurate and consistent rates of application.

6.1.5 IWG to work with AusHort to achieve the following outcomes:

**Strategy**

**1. IWG to work with AusHort to develop ways of implementing the following recommendations.**

- That commodity groups work with chemical companies to develop appropriate compatibility information for their particular industry sector.
- That extension and training programs be improved to develop growers' understanding of such terms as: MRL/WHP, re-entry period, plant back period.
- That commodity groups identify minor use situations and apply nationally for minor use approval through Crop Protection Approvals Ltd.
- That producer groups develop regional IPM strategies and encourage growers to look to these groups for relevant information.
- That producer groups encourage their members to become part of existing IPM monitoring programs such as Cropwatch.

6.1.6 IWG to work with Registration Liaison Committee (RLC) to achieve the following outcomes:

**Strategy**

**1. IWG to work with RLC to develop ways of implementing the following strategies.**

- That inconsistencies in withholding periods between pesticides with the same active constituents be reviewed.
- That labels highlight specific State requirements for Control of Use.
- That harmonisation of Control of Use legislation between the States be expedited.

6.1.7 IWG to work with NOHSC to achieve the following outcomes:

**Strategy**

**1. IWG to work with NOHSC to implement the following recommendation.**

- That the structure and content of the MSDS be re-designed to be more useful to growers.



6.1.8 IWG to work with National Drugs and Poisons Schedule Committee to achieve the following outcomes:

**1. IWG to work with the National Drugs and Poisons Schedule Committee to implement the following recommendation:**

- That the National Drugs and Poisons Schedule Committee through the Department of Human Services and Health issue a media release to industry bodies and resellers listing the new signal headings for agricultural chemicals.

## **6.2 Implementation**

### **6.2.1 Priorities and Timelines**

Among the strategies proposed in this report, the first in order of priority will be the establishment of the Implementation Working Group.

### **6.2.2 Short Term**

As indicated above, the IWG will, in consultation with NRA and Avcare, endeavor to carry out a series of recommendations and report to AusHort within 6 months on the outcomes.

### **6.2.3 Long Term**

**The IWG will determine a timeframe with the various stakeholders for the long-term recommendations.**

**The IWG will make progress reports on the outcomes to AusHort with a final report in 12 months.**

## **6.3 Support Group**

The project team recommends the establishment of a support group to enable the IWG to achieve its outcomes.

### **The support group would:**

- Establish the IWG
- Manage IWG operations
- Facilitate IWG meetings and those of working parties
- Prepare necessary reports.

The support group would need:

- An understanding of the objectives and issues of the present project
- Linkages with various stakeholder groups
- Technical knowledge and expertise pertaining to the matters involved
- Management skills and demonstrated accountability in completing projects
- Capacity to support a number of working groups

## 6.4 Costing

The costs for implementing the report recommendations will lie in the establishment and conduct of the Implementation Working Group.

The process for doing so will involve the following:

Phase	Action to be undertaken
Establishment	Representative stakeholders invited to participate
Operation	Group meets to: <ul style="list-style-type: none"> <li>• Establish approaches</li> <li>• Establish working parties to deal with agents of change</li> </ul>
Reporting	Groups makes: <ul style="list-style-type: none"> <li>• Progress reports to AusHort</li> <li>• Report in 6 months with achievements on short term recommendations</li> <li>• Report in 12 months on; <ul style="list-style-type: none"> <li>□ Achievements</li> <li>□ Progress</li> <li>□ And future recommendations</li> </ul> </li> </ul>
Future	AusHort to determine the continuation/future of IWG based upon stakeholder support statements.

The following represents estimated costs for the IWG for an operational period of 12 months:

Function	Cost (\$)
Salary	90,000
Travel/Accommodation	25,000
Administration	20,000
Total	135,000

## 6.5 Funding

Improving chemical labels will advantage not only producers but all stakeholder groups. The attempt to find new ways of providing label support could look for funding from a body such as RIRDC.

On this basis, funding for the operation of the support group could be sought from the following organisations:

Organisation	Amount (\$)
HRDC &RIRDC	100,000
Avcare	10,000
NRA	10,000
Other	15,000

## **7 Appendices**

<i>Appendix 1</i>	Communications Strategy
<i>Appendix 2</i>	Questionnaire
<i>Appendix 3</i>	Focus Groups Report
<i>Appendix 4</i>	Producer Responses
<i>Appendix 5</i>	Tables of Result Linkages