

RIM 2004 and workshops

Evaluation

Farmers and consultants surveys

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Introduction

RIM, or Ryegrass Integrated management, is a model-based decision support system for testing the biological and economic performance of integrated ryegrass management strategies for dryland broadacre systems of the Southern Australian grainbelt.

RIM's first phase of development spanned several years starting in the late 1990's which culminated in 1999 with RIM's first official launch and in 2004 with RIM final version, described in:

Pannell, D., Stewart, V., Bennett, A., Monjardino, M., Schmidt, C. and Powles, S. (2004). RIM: a bioeconomic model for integrated weed management of *Lolium rigidum* in Western Australia. *Agricultural Systems* 79:305-325.

A number of RIM workshops were concluded with questionnaires for evaluating RIM among its target audience, i.e. farmers and consultants of the Southern Australian grainbelt. This document presents the results of this evaluation. Also presented is a short background of RIM 2004's development and sales records.

Robert Barret-Lennard, Stephen Powles and Vanessa Stewart were involved in conducting the workshops. Rick Llewellyn compiled the questionnaires in 2004 under the supervision of Stephen Powles and David Pannell. Results were analysed in 2012 by Myrtille Lacoste.

Contact AHRI for the original reference, user and workshop manuals of RIM 2004, and for the revised 2013 version which resulted from a second re-development phase (2012-2013).

The core of RIM, including baseline data, results from the collective effort of many scientists within various institutions. We thank them for their contributions to RIM. Please refer to RIM's credits and modelling references for more information.

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Summary

Key findings following the evaluation of ten herbicide resistance workshops using RIM were:

- Using RIM was stated as a highlight of the workshops which were highly valued. Almost 90% of participants thought RIM was useful and a good learning experience;
- Participants saw RIM as an engaging, accessible ‘hands-on’ tool;
- Particularly praised was the possibility of exploring scenarios through simulation, and the group interaction and discussions;
- 80% of the participants said attending the workshop changed their perception about herbicide resistance and as many specified they may change their crop-weed management as a result, particularly specific techniques and/or increasing the overall system diversity;
- Suggested changes to RIM revolved around adding or developing more options (management and enterprises)

Lastly it should be mentioned that the participants noted and appreciated the presenter’s skills, and “well run” workshops.

Material and methods

RIM feedback questionnaires were submitted at the end of workshops conducted during 2001 and 2004 in Western Australia, South Australia, Victoria and New South Wales. Attendees were primarily farmers and consultants. Workshops consisted of a presentation about herbicide resistance (HR) (mechanisms and status update) followed by a session using RIM. Most of the time, attendees used RIM sharing a computer in small groups of two or three people. Workshops lasted half a day.

The feedback questionnaires comprised 10 questions, half asking respondents an assessment (ranking from 1 to 7) whilst the other half were open-ended questions.

Answers to the latter were listed and organised by categories. If one respondent provided several answers covering more than one category, those answers were counted separately.

Results

Questionnaires were completed for ten workshops, totalling 169 attendees. A majority were farmers, the rest were consultants with few agricultural scientists and extensionists. Half the attendees were from WA, 37% from SA, the rest shared between VIC and NSW (table 1).

Table 1. RIM workshops followed by evaluation

<i>Date</i>	<i>State</i>	<i>Location</i>	<i>Total number of attendees</i>
1 & 2/08/2001	WA	Salmon Gums (Esperance)	49
4 & 5/02/2004	SA	Yorke Peninsula	38
5/02/2004	SA	Roseworthy	24
10/03/2004	WA	Corrigin-Kulin	8
11/03/2004	VIC	Ballarat	12
19/07/2004	NSW	Wagga Wagga	12
17/08/2004	WA	Perth	19
11/10/2004	WA	York	7
Total attendees:			169

Questions requiring an assessment scored an overall 94% response rate. Open-ended questions were answered by 82% of the respondents, who provided a total of 1014 answers.

The results for each question are presented below:

1. How would you rate the value of attending the workshop?

Where 1 = no value at all. 7 = extremely valuable.

Average: 6.0

2. How would you rate the relevance of the workshop to your farm management?

Where 1 = no value at all. 7 = extremely valuable.

Average: 6.2

3. What did you like best about the workshop?

Respondants:163/169 Total answers:300 %

Using RIM	50
Accessibility	22
"Hands on"	12
"Ease of use"	6
"Working in pairs/small groups"	2
Interactive	2
Valuable simulations	21
Exploring scenarios and options through simulation	11
Long-term planning and projections	3
Comparing scenarios and discussing results	3
Options customisation	2
Realistic situations	2
Overall, unspecified	7

Attending the workshop	29
"Well presented"	12
Skilled presenter	7
Knowledgable presenter	3
Informal	3
Interactions and discussions	11
Group interaction, overall	6
With fellow farmers	4
With the presenters	1
Format workshop	6
"Good pace", "not too long", "to the point"	3
"Small group"	2
Others	1

Obtaining information	21
Herbicide resistance	12
Overall, unspecified	3
Mechanism, MOA, herbicides	2
Increased awareness	2
Resistance status update	2
Scope of the issue	2
Strategies	1
Various	9
Relevant information	3
Overall, unspecified	2
New ideas, "makes me think"	2
Management	1

4. What suggestions do you have to improve the workshop?

Respondants:80/169

Total answers:100 %

RIM contents		37		
More options and parameters, suggestions		13		
Fit local conditions better		11		
More herbicides		8	Practical / organisational	12
Update parameters		5		
Suggestions about how to run RIM		30		
"More time"		12	"Well run"	11
Various		14		
Promotion needed		4	More information	10
			More about HR issues	7
			Other	3

5. Has the workshop changed any of your perceptions of any aspect of herbicide resistance management? yes/no

Overall: 80% yes (96%response rate)

6. If yes, what?

Respondants:129/130

Total answers:169 %

Overall management		30
Importance of diversifying practices		11
Keep weed numbers low		7
Necessity to preserve our herbicides		7
Long-term management and planning		5
Value of specific techniques		27
Harvest weed seed control		7
Double knock		7
Cultural techniques		3
Value of green/brown manuring		3
Use of computer simulations		3
Pastures		2
Autumn tickle		2
Increased awareness		25
HR issue		17
"We can deal with this, there are options still"		8
How to use herbicides better		18
Rotation of chemicals groups		9
Various		5
Keeping records of chemicals used		4

7. Do you think that you may change your crop-weed management as a result of attending the workshop? yes/no

Overall: 79% yes (79% response rate)

8. If yes, what?

Respondants:118/134

Total answers:183

%

Control techniques	62
Harvest weed seed control	14
Diversify overall	10
Double-knock	10
Pasture techniques	7
Various techniques	5
Focus on cultural methods	4
Higher seeding rates	4
Green manuring	3
Delay seeding	3
Autumn tickle	2
Overall weed management	23
Increased vigilance	9
Long-term planning.	7
Keep # low & earlier control in rotation	6
Using RIM as a decision support tool	2
Rotate and record herbicides	15
Rotate herbicides	10
Record herbicide	5

9. Do you think the computer program RIM is a useful tool for improving crop-weed management decisions? yes/uncertain/no

Overall: 88% yes, 11% uncertain (97% response rate)

10. What changes would you suggest to make RIM more useful to you and your region?

Respondants:141/169

Total answers:262

%

Add / develop options	60
More herbicides	9
Various	9
Update / adjust parameters and options to local conditions	7
Swathing	6
Pastures	6
Cater for other weeds (part. wild radish)	5
Tillage/cultivation	4
Hay	3
Environmental effects (weather, erosion, soils)	3
Weed wiping	3
Croptopping	2
Diseases	2
Add crops	35
Pulses (part. peas, lentils)	13
Cereals (part. oats and durum)	6
Sown pastures (part. Lucerne)	5
Herbicide-resistant crop (part. Clearfield canola)	4
Unspecified	4
Fallows, summer crops	3
Development	6
Accessibility	3
Errors / problems	2
Need for validation	1

Additional comments (optional)

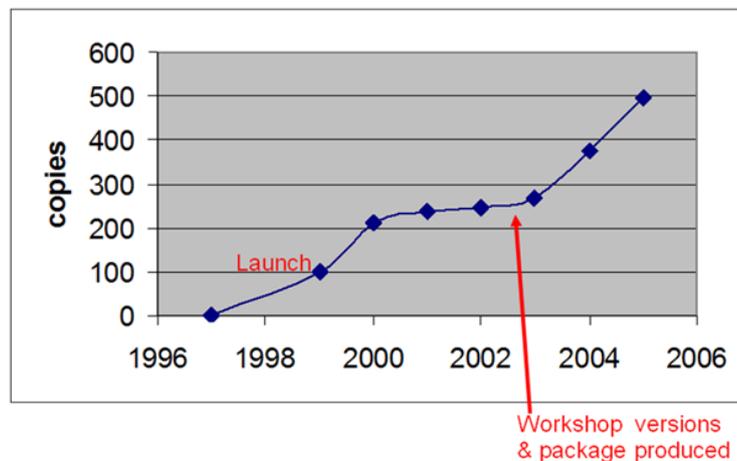
Overall: 26% response rate, with 87% positive feedback dominated by “well done”, “half day well spent”.

The questionnaires summaries are available from AHRI.

A brief history of RIM

- 1990s early versions developed by School of Agricultural & Resource Economics (ARE), UWA (David Pannell, Vanessa Stewart, Carmel Schmidt, Anne Bennett)
- 1998-9. Further developed for public release with strong input from AHRI (then WAHRI).
- October 1999. First RIM launched by AHRI and ARE at Jerac
- 2002. RIM used with Bill Roy data (validation with Alistair Draper)
- 2000-02. RIM for multiple weed species developed, for research purposes (Marta Monjardino)
- 2003. RIM workshop, peas version and Topcrop package released
- 2004. RIM workshops run in NSW, Vic and SA
- 2005-06. RIM part of national advisor IWM training program
- 2007-10. RIM for rice in the Philippines developed (Jessie Beltran)
- 2013. Launch of re-developed RIM as an open-access product (Myrtille Lacoste)

Plot of RIM sales to 2005:



Examples of RIM workshop use 2004-2005:

- Victorian DPI State Focus 2004: Breaking the bank- managing weeds for the future
200+ farmers & 82 advisors (Birchip Cropping Group, Brim, Clear Lake, Gymbowen, Kaniva, Lake Bolac, Lismore, South Horsham, Taylors Lake, Woorak)
- National IWM Workshops (ICAN/CRC Weeds) 2005
118 advisers, 6 workshops NSW, Vic, WA

After 2005 (until 2012):

- less than 10 copies of RIM 2004 sold in total
- 10-15 weed management workshops a year with RIM as a component, run by consultants in WA, NSW, SA.
- other occasional workshops (for instance in Charles Sturt University, UWA, Cleve Area School)
- a few sessions a year run with students in universities (Australia, UK, Canada)