FARM BUSINESS UPDATE

STRATEGIC STEPS – ENDURING PROFIT

GRDC
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Lake Bolac

Friday 16th February

9.00am to 1.00pm

Lake Bolac Bush Nursing Centre,

155 Montgomery Street, Lake Bolac

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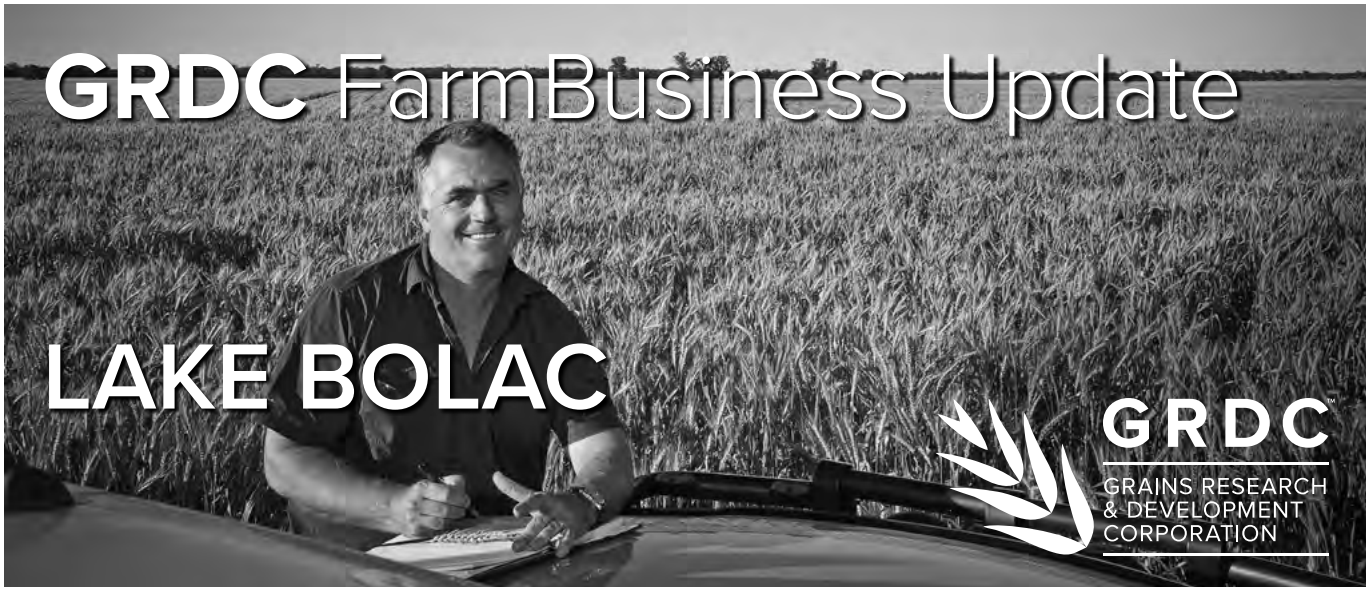

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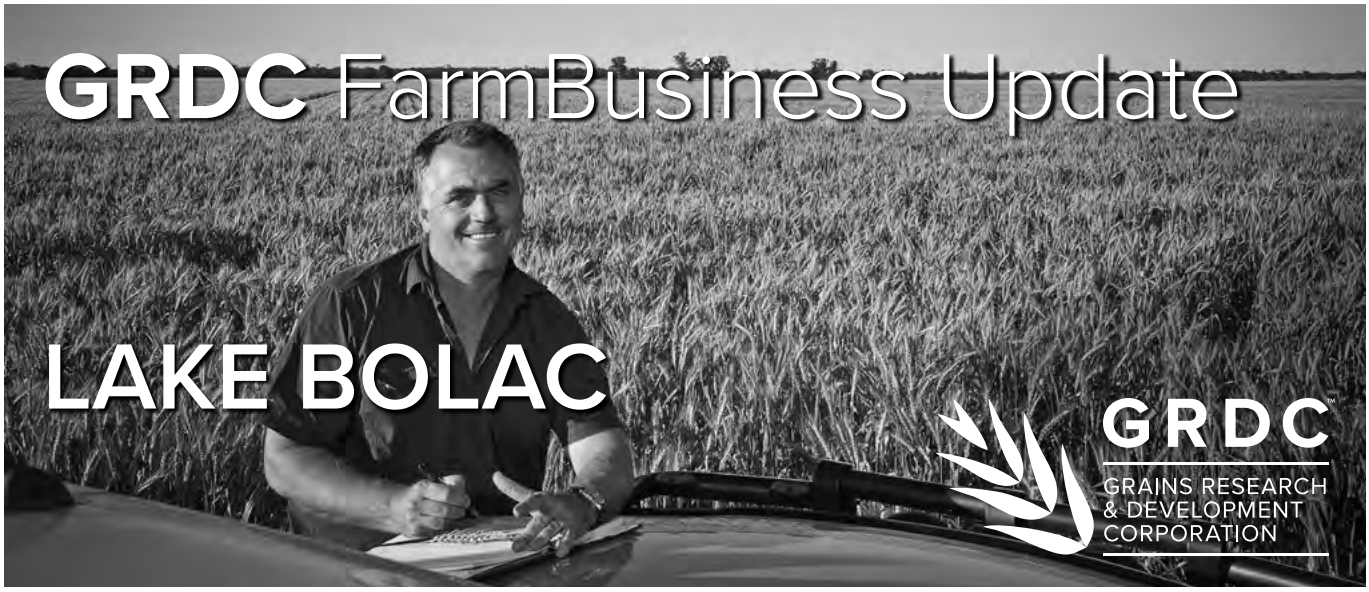

Program

9:00 am	**Welcome**	***GRDC***
9.10 am	**Taking a planned approach to investment in plant and equipment**	***David Smith,*** *ORM Pty Ltd*
9.50 am	**Improved outcomes from better decisions**	***Derrek Tiller,*** *Pinery Grain Growers Pty Ltd*
10.30 am	***Morning tea***	
11.00 am	**Characteristics and habits of top operators**	***Paul Blackshaw,*** *Meridian Ag*
11.40 am	**Multi-peril crop insurance update**	***David Smith,*** *ORM Pty Ltd*
12.20 pm	**Tips for a more productive workforce**	***Neville Brady,*** *Bunch Consulting*
1.00 pm	**Close and evaluation**	
1.05 pm	***Lunch***	

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Choosing and justifying the right sprayer

Brett Symes.

ORM Pty Ltd.

Keywords

- decision making, machinery, spray equipment, efficiency.

Take home messages

- There are many variables to consider when choosing a sprayer, and each will be weighted differently from business to business depending on the farming model utilised, (enterprise mix, farming system, typical rotation, spread of farming operations, etc.), the need or want to optimise efficiency, and availability of labour and lifestyle decisions. Make sure you get the right horse for your course regardless of what the neighbour has.
- Before upgrading the sprayer there may be options to increase overall efficiency of the existing sprayer.
- The capital invested can be similar between a self-propel (SP) and a tow-behind outfit when aiming to match field capacity.
- Alternative uses for the sprayer, and the likelihood of spraying where higher clearance is required, are key determinants in type of machine and cost-of- ownership.
- Tank size and boom width can sometimes be a trade-offs against spraying speed.

Introduction

Choosing the right sprayer and justifying its ownership cost can be a challenging task. There's a lot of variables and trade-offs to consider when making the decision, and the importance of each varies from business to business. The sprayer is often the most used implement on the farm, and therefore, it's important to get the decision right. Taking a structured decision making approach can help take the stress and uncertainty out of making this decision.

Structured decision making approach

Step 1. What spraying tasks and timelines do I need to achieve?

Spraying objectives, or targets around getting the spraying done on time, can vary considerably from business to business. While often not written down, each business usually has a number of 'spraying objectives' they aim for to ensure timeliness of operations. Examples of some spraying objectives include:

- Complete post-emergent grass selective herbicide application early (i.e. before tillering of weeds).
- The ability to spray the area of susceptible cereal crop varieties in three days should a stem rust incursion break out.
- The ability to get clethodim out within a 4hr/ day 'window of opportunity' during winter in the Western district to minimise the effect of frost on herbicide efficacy.
- The ability to apply herbicides during late stages of crop development (crop-top) to any crop type with minimal crop damage and good spray coverage.

Step 2. What will affect these timelines?

Besides physical limitations such as sprayer clearance height, the ability for your spraying outfit to meet your spraying objectives in a timely manner, will be influenced by the 'work rate' of your sprayer inside the paddock and efficiencies impacting on timeliness outside the paddock.

Inside the paddock

Work Rate (Effective field capacity)

The theoretical capacity (ha/hr) of a machine to perform its work whilst in the paddock is defined as:

$$\text{'Theoretical Field Capacity'} = \frac{\text{width of boom (m)} \times \text{speed of travel (km/hr)}}{10}$$

However, we know that there are factors that affect the ability for a machine to operate at its maximum width or speed at all times, while in the paddock. Hence the theoretical field capacity of a machine is adjusted down by a factor known as the Field Efficiency Percentage (FE %), which is the percentage of time the machine operates at its fully rated speed and width while in the paddock. The result is the Effective Field Capacity, or true 'Work Rate' that can be used to assess true productivity in the paddock.

So;

$$\text{'Work Rate' (Effective field capacity)} = \frac{\text{width of boom (m)} \times \text{speed of travel (km/hr)}}{10} \times \text{FE \%}$$

An example is provided in Table 1.

Table 1. Calculation of Work Rate.

	Units	Example
Boom width	Metres	36m
Spraying speed	Kilometres/hour	25km/hr
Theoretical field capacity	Hectares/hour	90ha/hr
Field efficiency	Percentage	80%
Work Rate (Effective field capacity)	Hectares/hour	72ha/hr

Examples of factors that affect the width or average speed of the spraying unit whilst in the paddock include:

- Water rate limitations (will this limit speed due to inadequate pump capacity, or nozzle size or number?).
- Spray efficacy limitations
  - Wind
  - Dust
  - Technology to allow correct droplet size at increased speed (e.g. AIM Command®, Three Tier System (3TS)®).
- Paddock landform and topographic feature limitations
  - Soil type and steepness can affect trafficability.
  - Paddock shape, undulation, obstacles (trees, dams, channels, swamps, etc.) and terrain (rocks, corrugations) can all limit speed and width (overlap).
- Overall power, gearing, weight and balance
  - an underpowered machine will restrict speed
  - inadequate gearing range can affect speed
  - is the machine too heavy for the rainfall zone and soil type, hence may sink?
  - an unbalanced machine may have a restricted speed
- Downtime
  - Breakdowns, blocked nozzles; could these be eliminated with better preventative maintenance?

Efficiencies impacting on timeliness outside the paddock

With a spraying outfit, there are significant factors outside the paddock that also impact on the overall timeliness of the spraying operation. These factors can often be improved for low cost regardless of which spraying outfit you use.

Examples of efficiencies outside the paddock, and what influences them, include:

- Fill time
  - Pump and hose size (e.g. 1.5" connection to chemical shuttle =60L chemical/min; 4" water hose faster than 3" > 2", etc.).
  - Induction technology.
  - Batching plant (often requires additional labour).
  - Mounted pump.
  - Quick fill systems (for example, overhead water loading, nose connector)
- Travel time
  - Spread of farming operations and/or distance between paddocks.
  - Road speed (empty and loaded).
  - Block cropping (less clean-outs).
  - Distance to fill points (versus a 'nurse tank' could be used to take water to the sprayer instead, however this may require extra labour which will be need to be accounted for).
- Clean out time
  - Flush technology.

o Block-cropping.

- Tank size – if tank size is matched to paddock size (subject to weight considerations) this can mean less time spent travelling and filling.
- Breakdowns (lack of preventative maintenance?).

Efficiency factors both inside and outside the paddock can be highly variable between farms. Growers should continually ask themselves what could I be doing differently to improve current efficiencies, and therefore, overall timeliness of the operation.

Step 3. What options do I have to achieve my timelines?

The main options as with most plant and machinery is self-ownership, use of contractors, or a combination of the two. The key questions to ask with respect to each include:-

Self ownership:

1. Do you need:
   - Alternative uses – am I looking for a dedicated spraying outfit or do I also need a 'third' tractor (for example, front end loader (FEL), spreader or chaser tractor), or self-propel (SP) that can be used for windrowing also? An alternative use can effectively subsidise the cost of ownership of a machine.
   - Clearance height – what's the likelihood of needing to spray where higher clearance is required (for example, taller crop types (e.g. canola, sorghum/corn) or late season applications (e.g. fungicides/insecticides/ desiccation/crop-topping, late season liquid N)). If likely, are contractors available if you haven't got the clearance?
2. What can I afford? (refer later section)

Contractor:

Contractors usually come with the latest and greatest machines, which can usually handle all applications and are modern, economically justified machines due to the area that they cover which increases the utilisation of the equipment. Are you confident you can get them in a timely manner and not compromise productivity? Is it cost effective to own your machine? (refer later section)

Combination:

For example, by owning a tow-behind you get the alternative use from the tow-tractor and you can engage a contractor for the high-clearance spraying. The consideration for operations, is can you get the contractor when needed?

Step 4. Ownership & costs – What can I justify?

Table 2 provides a comparison of different types of sprayers. In summary however a few features of each type of sprayer are listed. (Note: Less attention has been paid to truck mount sprayers given the limited number operating on Victorian farms):

1. Tow-behind
   - Handles most applications.
   - Choice of larger tank sizes.
   - Clearance issues late in season.
   - Multiple alternative uses for towing tractor.

2. Truck or tractor mount
   - Fastest road speed full or empty.
   - Choice of larger tank sizes.
   - Clearance issues late in season.
   - Visuals sometimes compromised.
   - Limited alternative use.

3. Self-propel
   - Great clearance - specifically designed for spraying hence suitable for all spray applications.
   - Great traction.
   - Best comfort.
   - Superior visuals.
   - Good road speed.
   - Modern technology (for example, AIM Command®).
   - Higher fuel use (hydrostat).
   - Limitations on tank size.
   - Limited alternative use.

Table 2. Comparison of different types of sprayers.

		Tow-behind (and front wheel assist (FWA))	Truck/tractor mount	Self-propel (SP)
Travel speed	Empty	40km (up to 70km)	80km	50km (up to 70km)
	Full	25-30km	80km	30-40km
Working spray speed	Mallee	20km		25km (25-30)
	Wimmera	18km		25km
	Western District	15-17km		20-22km (20-26)
		Rule of thumb: SP 6kph faster		
Spray applications		Clearance issues late in season	Clearance issues late in season	All (incl. late season fungicides/ insecticides/desiccants)
Indicative late season sprays		Depends on farming system, rotation and season. Apply your own probabilities (e.g. Mallee client 8% (insecticide/fungicide in field peas, lupins, canola; desiccate field peas, spray-topping canola and some cereals)		
Traction		Good (FWA)	Good (4WD)	Better (2WD)
Alternative uses		FEL, '3rd' tractor – chaser, spreader	Limited (liquid N)	Limited (liquid N, windrowing - front mount)
Fill time		40min (pers. comm.)		25min (pers. comm.)
Visuals		Good	Good (can be limited by tank and lower seating position)	Great (behind – same as tow-behind; front and down – superior)
Tank size		Most 7-9kL (Up to 10kL)		Most 5 – 6.2kL (Hardi Rubicon now 6,500L. Up to 8kL – Goldacres G8 Super Cruiser – less clearance)
Operator comfort (ride, control, OHS)		Good	Good	Superior
Agility (e.g. backing into corners)		Harder (articulation)	Medium	Easy
Fuel use		10-14L/hr		Hydrostat – 21-25L/hr Mechanical – 10-14L/hr
		Rule of thumb: Hydrostat SP 2 x fuel use		
Other				Cutting tracks – can widen wheels so back track different to front
				Proactive integrated weed management - got it so can do it, don't have to wait for contractors or cost their service

Justifying an investment in a machine is a balance of financial and non-financial considerations.

The primary financial consideration is cost of ownership, which will be influenced by:

- Capital cost (i.e. the loss in value of the machine each year, plus the appreciation in value of its replacement and an allowance for the opportunity cost of the money invested into purchasing the machine which could have been invested via another means). This 'changeover' cost can be 35-40% of the total cost, so keeping it to a minimum has a big influence on overall ownership cost. Factors that affect changeover cost include:
  - o Engine hours on trade.
  - o Age of trade
    - ☐ Obsolete model or technology.
    - ☐ Access to parts.
    - ☐ Poor condition.
  - o New technology – the sky's the limit so be critical on what you really need. For example, do I need auto-height, auto-greaser, etc.?
  - o No-trade discount.
  - o Factory incentives.
  - o Exchange rate.
  - o Poor reputation.
  - o Poor dealer support.

Some growers have a defined policy around changeover time based on engine hours (for example, 2000 hours), age (for example, 5 years old)

Table 3. Some 'actual' variations in capital cost of SP sprayers sold within various regions of Victoria *(Source: ORM Pty Ltd).*

	Wimmera	Western District	North Central
Age (years)	5	4	3.6
Changeover price ($)	205,000	192,000	142,000
Engine hours	2,000	1,950	2,550
Hours per year	400	488	676
Changeover (depreciation)/year ($)	42,000	48,000	39,628
Changeover (depreciation)/Eng. hr ($)	103	98	56

or model (for example, within one model of current model). Whereas others will keep an active eye on the market and buy whenever the price is right (for example, Wimmera grower in Table 3 will upgrade whenever changeover is < $100/eng.hr).

The full scale of financial benefits of ownership, needs to be evaluated as an offset to the costs, these benefits will be driven by the following factors:

- Field capacity and field and non-field efficiencies, as outlined in Step 1.
- Alternative uses for machine - can 'subsidise' the sprayer costs.
- The percentage of spraying needed to be done by contractors.
- Other fixed costs (interest, rego/insurance) – can be up to 25% of total costs which is a big contributor.
- Fuel usage – hydrostat SP can use double the amount of a tow-behind, but overall fuel cost is influenced by field capacity and field efficiency.
- Labour cost – dependent on machine hours.
- Scale – spread of costs (particularly the fixed costs) over area sprayed per annum ($/ha).

When assessing cost of ownership, it is advisable to compare it to the cost of using a contractor. Once this comparison has been made an informed assessment can be made as to whether ownership is cost-effective. The final decision will however also be impacted by non-financial considerations and the timing of the planned upgrade.

Non-financial considerations include:

- Job satisfaction – the sprayer is the most widely used implement on farm, operator comfort, health considerations (e.g. bad back) should be considered.
- Interest and/or expertise in machinery – sometimes it's easier to let the contractor worry about ownership issues and access to labour, and get the latest and greatest technology turn up each year.
- Attracting and retaining employees – varies between regions.
- No financial pressure.
- Family time.
- Stress – being able to get the contractors when you want them.
- OHS

Non-financial considerations are harder to quantify than financial considerations. Each grower has to put their own weighting and dollars on these variables depending on their personal preferences.

In regards to timing, sometimes a decision to upgrade can be justified based on a simple cost : benefit analysis, but there may be other immediate priority uses for that capital or existing financial commitments that already limit cash flow. Some useful overall machinery investment benchmarks to consider include:

- Alternative/priority uses for capital – i.e. what other 'big-ticket' items are coming due for an upgrade and will investing a certain amount of capital in improving your spraying capacity limit you from getting the balance and timeliness right in other areas?
- Overall capital invested in machinery – ORM benchmarking show that the typical investment in machinery is $1 for every $1 of income generated, or a ratio of 1:1. Some businesses can maintain a 0.8:1 ratio without compromising timeliness, which means in a farm business generating $1,000,000 income, $200,000 of capital can be invested elsewhere.

- Total (horse) power, machinery and labour cost (TPML) – what is the total annual cost of machinery capital, machinery operating costs (fuel, repairs, contractors), and labour (including your own). A figure under 40% of income is good, under 35% is great
- Cash flow implications – machinery is often financed over five years and too much spent on machinery upgrade all at once can run down cash flow, particularly in a poor income year. Machinery repayments (principal and interest) below 13% of income is generally OK if other key-cost areas in the business are balanced.

Conclusion

Choosing and justifying the right sprayer doesn't have to be a difficult process. Taking the time to fully evaluate what capability you need, and the options and costings associated with achieving that capability, will ensure that you get the right horse for your course.

Contact details

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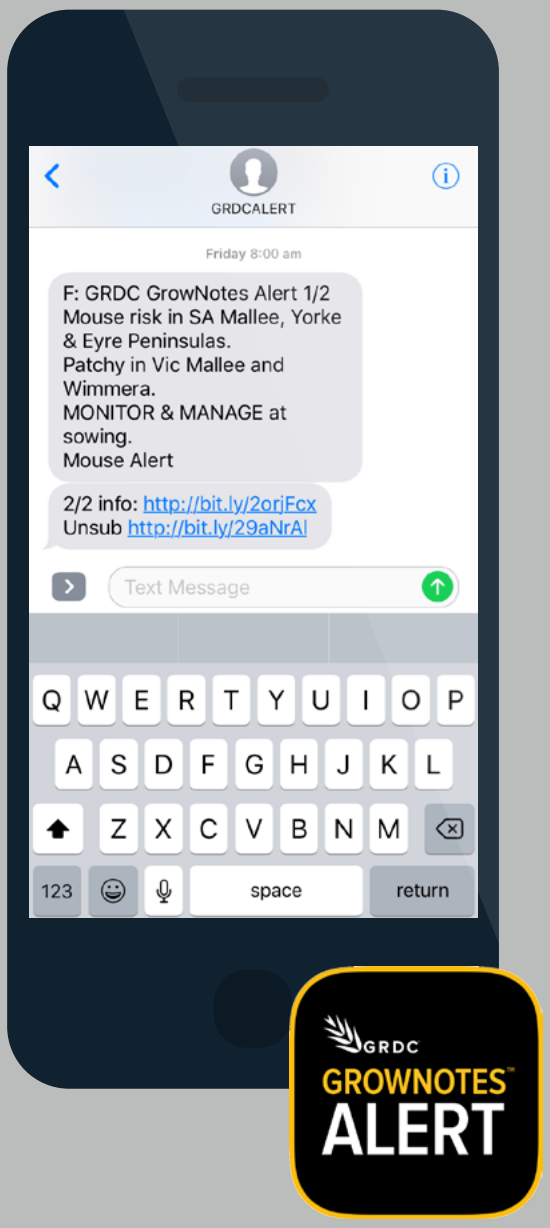

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GRDC GROWNOTES ALERT

Family farm business decisions - better outcomes from improved decisions

Derek Tiller.

Pinery Grain Growers Pty Ltd.

Keywords

- family farming, macro management, vision, values, goals, targets, business plan, farm culture, formalise, farm boards, evaluation, analysis, policies, procedures, inclusive workspace, resource, visionary, outsourcing, targeted advice.

Take home messages

- **Macro-manage the family business better**, add structure, make plans and create common goals. This will unite the family to achieve what is best for all. By having these common goals, it is possible to create a farm culture that all employees can adhere to. Seek assistance from an experienced adviser to help the family build a business plan.
- **Formalise the decision-making process** and involve experienced others in this. Each member of the family must know their roles and responsibilities and be made accountable for them. These formal meetings are a place for reporting, reviewing and raising issues that may exist in a controlled environment where conflict can be managed.
- **Outsource services that complement the business** and fill gaps in managerial ability. Don't settle for second best in this area. The right people in the business can provide a significant return on investment. Also, seek out training opportunities to help up-skill the workforce within the business.
- **Providing an inclusive workspace for a farm office** is the lynch pin of any of the management strategies discussed in this report. Create a space that can cater for the family and the workforce. This will improve the access for all members of the farming family and reduce the risk of isolating any individuals. This will be the meeting place for all things work related and will give the family and workforce a clear division between work life and home life.

Content

During a fire recovery workshop in December 2015, Dennis Hoiberg of Lessons Learnt Consulting asked, 'Why do you do what you do?' Dennis proposed that if you cannot answer this in three seconds you are psychologically exposed; you lack resilience, which is your ability to bounce forward and thrive through change and challenge. 'Understanding the WHY in your life gives great direction and overrides the negative stresses with positive resilience'. (Dennis Hoiberg, 2015).

The main purpose of this paper is to examine what growers are doing to ensure good decisions are being made to help them manage risk and to thrive. Resilience is one of the desired outcomes of having a reliable decision-making process. A resilient family farming business will thrive rather than just survive after adversity.

The experience with the Pinery fire highlighted that a decision-making process can be vulnerable to mistakes if not structured well. There were many decisions that needed to be made at the early stage of recovery. The priorities of the business had quickly shifted and there was an increased level of stress, fatigue, workload and grief to deal with. To not learn a lesson from this experience would be negligent on a personal and professional level.

During a meeting in Canada with Reg Shandro, Farmacist Advisory Service he said: 'First time you're a victim, second time you're a volunteer.'

This sentiment clarified that every effort must be made so that the next time the unexpected occurs, the team and the business is in a position to manage or capitalise on the situation. Bearing in mind the unexpected does not have to be a bad or a negative happening. It may well be an opportunity that if responded to properly, will grow the business.

For the purpose of this paper the strength of a family farming business is described by its sustainability, resilience and responsiveness (Figure 1). These are the desired outcomes of a strong structure for making decisions within a family farm business.

Sustainability — environmental, financial and generational continuity.

Resilience — management of adversity.

Responsiveness — the ability to capitalise on opportunity. In order to achieve this outcome, family farming businesses need to consider how they manage and resource the business.

Figure 1 illustrates the components that need to be considered and developed in order to improve the decision-making process and to lead to actions that achieve the desired outcome of sustainable, resilient and responsive businesses.

The informal manner in which business is carried out in many family farming businesses may make it vulnerable to conflict and failure. Formal structures and processes will help achieve a more inclusive function for the wider family as well as assisting with being more prepared, professional and competitive in a global supply chain. For change to happen there will need to be a shift in focus for some family farm managers.

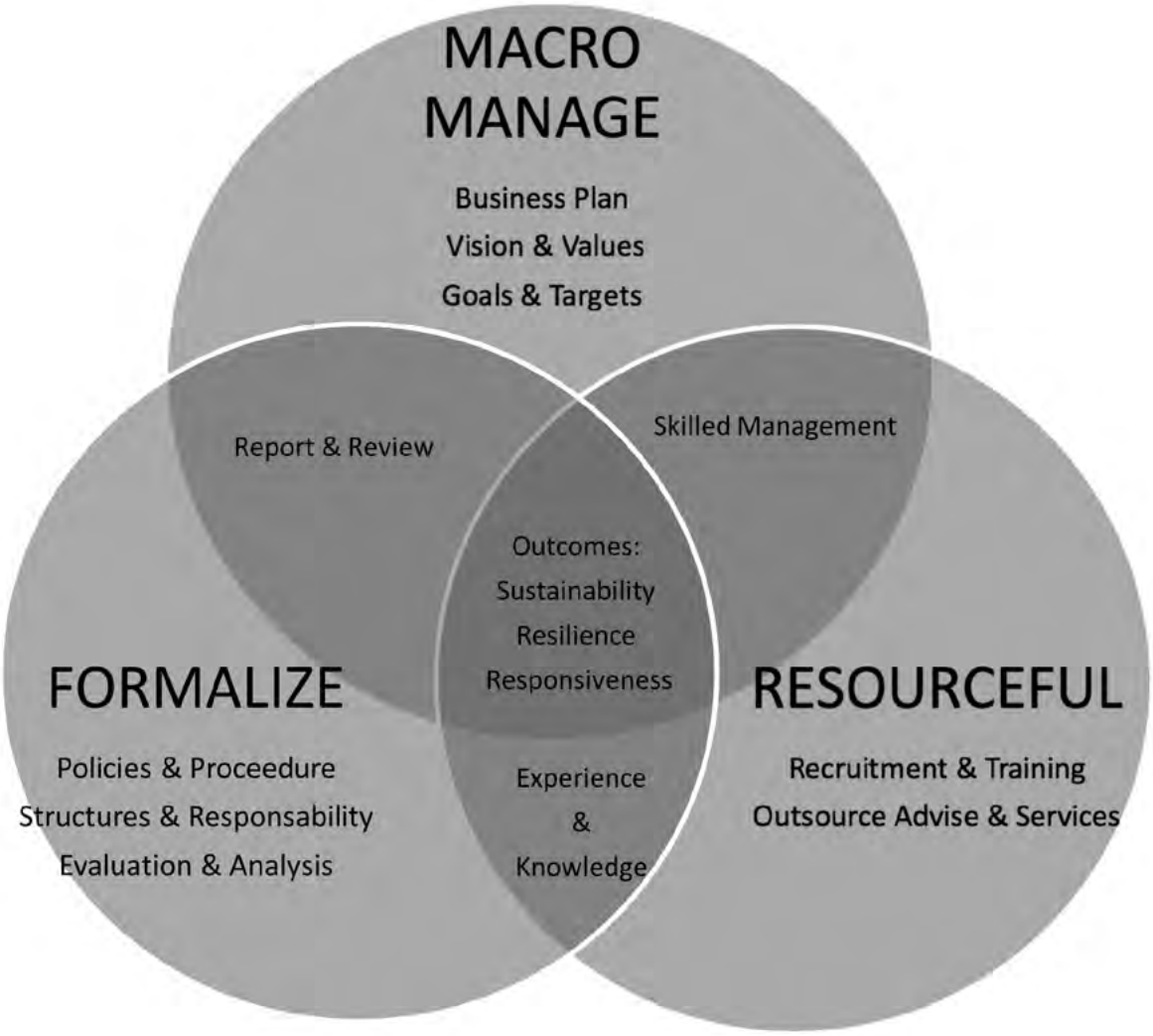

Figure 1. The components that need to be considered and developed in order to improve the decision-making process.

There are many structures and processes available to assist with decision making. For example, Boards of Directors, Advisory Panels or other forms of formalised decision making. Whichever process a family choose to implement, they essentially address the same issue; that is the addition of experience and knowledge to the forming of a decision.

But without doubt, those with the authority to make important decisions on behalf of a family farm business cannot do so without the adequate supply of accurate data. Preparation of records and reporting on issues accurately is imperative to the quality of any decision. This was particularly the case during the recovery phase of the Pinery fire. Many locally affected growers stated that the 18 months following the fire was said to be the busiest of their lives. Finding time to introduce an appropriate method of financial analysis in order to make key decisions under those circumstances is difficult. Neglecting the macro management of the business can be easy to do when day-to-day activities are demanding time. Proactively introducing an improved decision-making process will position a business to better manage the unexpected as well as the foreseeable.

Also important is the type and quality of the people and service providers chosen to assist the farm manager in making decisions. An opportunity exists in the selection of these people to fill gaps in the farmer's managerial abilities.

Knowing that there are a vast range of services available should give confidence to those family farms that are unsure that they have the ability within the family to grow the business. Being resourceful by outsourcing these services is of great value to small and medium family farms that do not have the capacity to employ fulltime specialty staff to carry out these tasks.

Whether or not the grower believes they are running a successful business or not, it is important at times to take a step back and have a look at the business from the outside, avoiding the distraction of lush green crops and shiny new machinery.

The outcome to a sound decision-making process is improved risk management and an increased ability to respond to opportunity. A family farm that has a common focus and shared goals can achieve more and will work better together to make them a reality.

The challenge facing a family farm that is operating under informal decision-making processes that chooses to formalise this structure could be less than those challenges they face if they remain the same.

As far as changes made on my own farm it's currently a case of 'steady as she goes'. At the beginning of my Nuffield experience I was given strong advice to be very considered in making changes to my own business because it would take some time to process what I have learnt. Additionally, that it is important that changes that could disrupt the workplace are not made too soon. During this time I have been able to refine my thought around those changes and even dull them down to only a few.

Those changes are based around financial recording and reporting, roles and responsibilities and more regular formal meetings. With the desired result of there being more financial transparency and personal financial freedom, improved farm performance understanding and more opportunity to discuss issues that commonly cause problems on family farms.

But without doubt the most important values that are required are a team mentality and some considered leadership.

Useful resources

Derek Tiller's complete report can be found on the Nuffield website (http://www.nuffieldinternational.org/live/Reports)

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Characteristics and habits of Top 20% farm business operators

Paul Blackshaw.

Meridian Agriculture.

Keywords

- benchmarking, Top 20%, profit drivers, characteristics, personality, habits.

Take home messages

- Benchmark studies can be useful to compare your farm business to others to highlight areas for potential improvement.
- The Top 20% sample can reveal drivers of profit.
- Exploring the characteristics, personality and habits of the Top 20% growers can also reveal important reasons for their success.

Background

This paper discusses the findings from the Victorian High Rainfall Management Guidelines produced as part of the larger GRDC project "The integration of technical data and profit drivers for more informed decisions". Data was captured from grain growers in the Victorian High Rainfall zone over three years and analysed to identify key management factors that affected profit drivers. It was complemented by a qualitative survey.

While benchmarking is a useful tool to provide a snapshot of the financial and production performance of a farm business, the stories behind the Top 20% growers can provide a useful and interesting snapshot into the characteristics and habits of highly profitable growers. This paper also discusses these characteristics and habits drawn from interviews of the Top 20% growers that contributed to the dataset used to develop the Victorian High Rainfall Management Guidelines, as well as the Agriculture Victoria Livestock Farm Monitor Project, along with general observations of many farmers by the author.

Results and discussion

The Management Guideline for the Victorian High Rainfall agro-ecological zone demonstrates that there is a significant gap in financial performance between the Top 20% growers and the average farming business within the zone. The Top 20% growers were selected based on Return on Equity (ROE).

The Top 20% farmers have generated an operational ROE of 4.9% during the three year period analysed between 2012/13 and 2014/15. This is over double the average business in the zone which recorded a ROE of 2.4% during the same time period.

Return on Assets Managed (ROAM) is an alternative ratio which can be used to measure financial performance. The Top 20% recorded an operational ROAM of 5.8%, compared to the average business in the dataset of 5.2% (Table 1)

When considering the financial performance in terms of turnover, the Top 20% retain 25% of turnover as profit, compared to 17% achieved by the average grower participant (Figure 1).

Table 1. Victorian High Rainfall Zone — farm business performance.

Return on Equity (ROE)	4.9%	2.4%
Return on Assets Managed (ROAM)	5.8%	5.2%

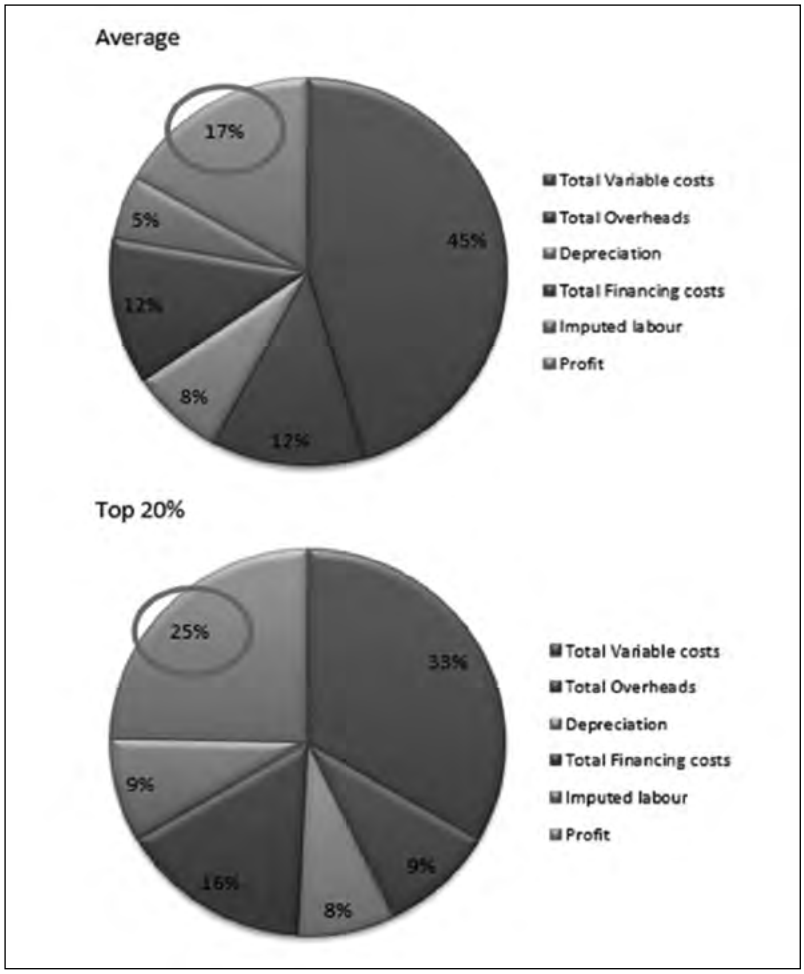

Figure 1. Costs and profit of as a percentage of farm turnover for the Top 20% and average business.

Most farms in the Victorian High Rainfall zone run a mixed system with cropping and livestock. The Top 20% growers in the GRDC dataset run both enterprises in a highly profitable fashion.

There are a range of important profit drivers that are influencing variation in farm performance. The four primary profit drivers that are driving the differences in long term financial performance have been identified as:

1. Gross margin optimisation.
2. Developing a low cost business model.
3. People and management.
4. Risk management.

It is the interaction of these four primary profit drivers that is resulting in very different levels of financial performance being achieved. This paper will focus on gross margin optimisation and developing a low cost business model.

Gross margin optimisation

When compared to the average of the participants, the Top 20% growers achieved 5% higher cropping income per hectare from 6% lower variable costs per hectare. This contributed to them achieving 15% higher cropping gross margin (Table 2).

Table 2. Cropping gross margin.

Key Performance Indicator	Top 20%	Average of dataset	
Crop Income/ha	$ 1,132	$ 1,080	5% higher
Crop variable cost/ha	$ 497	$ 527	6% lower
Cropping gross margin/ha	$ 635	$ 553	15% higher
Crop variable cost % of income	44%	49%	

The main driver of the optimised gross margin is the ability of the Top 20% to achieve additional yield from lower variable costs (Table 3). Higher yields and lower costs result in a 23% lower cost of production per tonne for wheat and 16% lower cost of production per tonne for canola (Table 3). Most variable costs are lower for the Top 20% farmer, except chemicals. This may indicate the importance of weed control in achieving higher yields.

The improved performance of the Top 20% can be attributed to many factors, however it appears that enhanced operational timeliness and excellent agronomic skills in areas such as summer weed control, moisture retention, timeliness of sowing, appropriate nutrition and good agronomy are key factors in achieving this improved performance.

Low cost business model

In addition to optimising gross margin the Top 20% farmers have also been able to develop a low cost business model. Table 4 shows that their overhead costs on a per hectare basis is 13% lower than the average. This tends to indicate an appropriate scale of operation and may also be influenced by the simplicity of the business. It is also influenced by lower finance, lease and equipment costs.

Livestock Farm Monitor

Agriculture Victoria conduct a benchmarking study of the livestock industry each year. This examines the financial and productive performance of a range of livestock businesses across the state.

Table 5 shows that over a long period the Top 20% of participants in the Agriculture Victoria Livestock Farm Monitor report are able to achieve over three times the profit (EBIT/ha) than the average.

As can be seen from both examples, it obviously pays to be in the Top 20% of farmers from a profitability perspective. It is also very difficult for famers to remain consistently in the Top 20%, with only small numbers being able to repeatedly be in the Top 20% for multiple years.

Table 3. Cropping gross margin per tonne.

Key Performance Indicator	Top 20%	Average of dataset	
Wheat yield – t/ha	4.6	4.2	10% higher
Wheat cost of production – per tonne	$ 173	$ 225	23% lower
Canola yield – t/ha	2.3	2.2	5% higher
Canola cost of production – per tonne	$ 334	$ 400	16% lower

Table 4. Overhead costs.

Key Performance Indicators	Top 20%	Average of dataset	
Overhead costs per ha	$ 76	$ 92	13% lower
Overhead costs as a % of income	9%	12%	

Table 5. Long term averages — 10 years of data state wide, livestock 06/07 to 14/15 (from Ag Vic Livestock Farm Monitor Report).

	Average	Top 20%
Gross income	$557	$802
Enterprise/variable cost ($/ha)	$226	$255
Overhead cost ($/ha)	$134	$133
Owner/operator allowance ($/ha)	$98	$89
EBIT ($/ha)	$100	$324
Return on assets	1.7%	4.8%
Return to equity	0.4%	4.6%
Stocking rate (dse/ha)	13.3	16.7

Characteristics and habits of Top 20% farmers (both grain growers and livestock producers)

While there can be some strong messages in the data, for example; optimising stocking rate in a livestock enterprise improves profitability, there are also some interesting observations about highly profitable farmers that cannot be observed from the data.

A range of participants of the Agriculture Victoria Livestock Farm Monitor report were interviewed to better understand the characteristics of highly profitable farmers. The group was made up of those who were able to repeatedly be part of the Top 20% sample across a number of years. In addition, a number of the Top 20% farmers in the Management Guidelines project were interviewed. The author has also drawn on a range of general observations of profitable farmers from many years spent sitting around the farm kitchen table.

A strong theme is that profitable farmers tend to farm to their personality. This means they are more likely to love what they are doing, and consequently be more successful at it. It also means that there is no strong message around which mix and size of enterprise is more profitable. The Top 20% sample is made up of big, complex, multi-enterprise businesses, as well as simple 'mum and dad' businesses only running one small enterprise. It really comes back to the increased likelihood of success if you farm to your personality. In some cases this may involve outsourcing tasks within the business that are not enjoyed by members of the business, to those who are experts.

For many, profit is a major driver, and these people who feel this way are likely to be found in the Top 20% sample. However, this may not lead to a fulfilling life, or positive work-life balance. Some farmers have commented that while they run a profitable enterprise, they are willing to forego the next step up in profit for some personal or lifestyle factors. This might include being home when kids get off the school bus or accepting that some money spent on the farm may not contribute to profit, but actually makes them happy.

Optimising profit is also linked to risk. Everyone has a different position on risk and this may be influenced by financial security, stage of life, health and family circumstances. Business and personal goals all influence the amount of risk an individual is willing to take and this position can change rapidly, sometimes triggered by sudden events.

No risk position is right or wrong, it is what you are comfortable living with. While the Top 20% are almost always willing to take on risk, this may not be for everyone.

While there is no 'recipe' for the characteristics, habits or personality traits of highly profitable farmers, there are a number of themes that appear to be common in many. These can be roughly grouped as personal, farm system and business.

Personal

- Love talking about their farm.
- Driven and passionate.
- Hungry for knowledge.
- Mindset to manage 'properly'.
- Appetite to take on risk.
- Part of a network/discussion/peer group (formal or informal).
- Found their 'sweet' spot.
- Not afraid to think outside the square — open/enquiring mind.

Farm system

- Push the system.
- Multiple enterprises, but not too many.
- Intimate knowledge of farm.
- Seek advice when required.
- Buy good genetics, but don't get too hung up on it.
- Measure things that matter.
- Regular soil testing — use fertiliser judicially.
- Rotationally graze — to a degree (gut feel now that the skill is learnt).
- Operational timeliness.

Business

- Treat it like a business.
- Cash flow budget, some regularly update and compare budget to actuals.
- Make evidence based decisions.
- Business plan — usually written down and reviewed.
- Capacity to get through difficult times.
- Sell direct — if use an agent make them work for you.
- Use contractors/contract labour as required.

Conclusion

The data in benchmarking studies can provide some signposts to areas in business that drive profit, and can possibly be explored and addressed to increase farm profitability. However, the data only provides part of the story. The common personality and other characteristics of the Top 20% business operators can also be used to understand highly profitable growers better. Some of these habits and characteristics can potentially be adopted by those outside the Top 20%, but some are such an ingrained part of their personality it is impossible to change.

References

Cropping Zone Management Guideline – Victorian High Rainfall Zone, Grains Research and Development Corporation (GRDC) (available shortly via the GRDC website)

Livestock Farm Monitor Report – Victoria, Agriculture Victoria; accessible from:

http://agriculture.vic.gov.au/agriculture/livestock/farm-monitor-project

Acknowledgements

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Risk management options

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Keywords

- peril insurance, financial risk, financial buffers, best management practices.

Take home messages

- Peril insurance should be seen as one of a number of ways to manage financial risk in farm businesses.
- Peril insurance has a benefit to management of financial risk in some situations but not all.
- Farm businesses should conduct a thorough assessment of the merits of peril insurance before purchasing policies.

The information in this paper is general in nature and should not be taken as personal professional advice. Readers should seek their own independent advice from a qualified adviser and not rely solely on the general nature of information in this paper.

Introduction

Australia has one of the riskiest environments in the world for farming and hence growers have to manage large crop yield and income fluctuations. Peril insurance is one of a number of tools that growers can use to minimise income and profit fluctuations.

Insurance has been available to grain growers for many years. Traditionally fire and hail insurance are the major perils that have been insured.

In the 1970s peril insurance other than fire and hail was offered to Australian grain growers. This was withdrawn after two years due to lack of uptake by growers.

In the 2000s it was once again reintroduced, and similarly it lasted for only two years before folding.

Within the past few years multi-peril crop insurance (MPCI) products have re-emerged for the Australian grain grower. Time will tell how long they will stay on the scene this time?

Types of peril insurance

Multi peril

Multi peril insurance policies cover

- **Revenue insurance.** Where a business insures an agreed amount, usually up to a maximum of 70% of past five year's average income per hectare. Payouts are triggered by the occurrence of a specified peril and claims are paid on the difference between the farm's actual income and the insured income level.
- **Minimum yield insurance.** These policies insure a yield, usually up to a maximum of 70% of your past five year's average production.

MPCI insures and offers cover against perils that historically have been borne by the grower. These can include, but are not limited to; rainfall (both too much and too little), frost, heat shock, wind damage, insect or pest damage or plant disease.

Peril insurance covers the agreed sum nominated prior to the commencement of the policy. Some policies cover yield at a nominated price whereas others cover a nominated dollar figure per hectare.

Some companies offer policies with premiums in bands, the higher the amount insured the higher the premium. Policies can be offered for decile 1 income (lowest percentile) or up to decile 7, which is 70% of

your average production over the past five years. Some policies also allow businesses to self-insure a portion of their risk. For example, a business may feel that they do not need to insure the first 20 or 30% of their five year's average production and will self-insure this portion. This will lower premiums as the insurance company does not have as much exposure to claims. The self-insured section is usually the lower risk portion of the policy.

If you were seeking an insurance to guarantee an average production year (decile 5), the premium would be far more expensive than a decile 1 production year. Businesses generally seek to cover their direct costs, which are typically around 60% to 80% of income and would be a decile 3 to 4 year. Multi peril policies that cover 70% of income cost around 5% to 15% of the sum insured. These premiums vary on each application and reasons for the variances include geographical location, historical performance, seasonal outlook, variability of past performance and level of cover being sought. Companies are reluctant to provide general information regarding their policies as premiums are struck on an individual request and depend on the information provided within the application.

One of the difficulties for companies offering multi peril insurance is that growers are insuring a product that can be influenced by 'best practice'. This is subjective and not a straight 'act of god' such as fire or hail. Establishing the policy criteria is more difficult for the insurer and in some instances open to interpretation by the grower.

Single peril

Single peril insurance typically covers temperature (either frost or heat), rain, fire and/or hail.

Single peril insurance is also called Index Insurance, Weather Certificates or Parametric Insurance. Single peril insurance typically only covers an amount in total dollars. Parameters can be straight rainfall — gamble on xx millimetres of rainfall in xxx month, or they can be insuring against the event of high or low temperatures. Single peril insurance products are relatively simple and claims do not need an on-farm assessment. There is less paper work to fill out and policies can be written up until 20 days prior to the commencement of the insured period. Policies generally use Bureau of Meteorology (BoM) records and insurance can be obtained for a nominated grid reference and do not need to be tied to a BOM weather site. Bureau of Meteorology (BOM) records then indicate that the criteria are achieved/not achieved then the payment is usually made within 20 days after the insured event occurs.

Some insurance companies offer policies that insure against the 'odds' of greater than xxx millimetres of rainfall in August, September, October, etc. but this option is not offered by all companies.

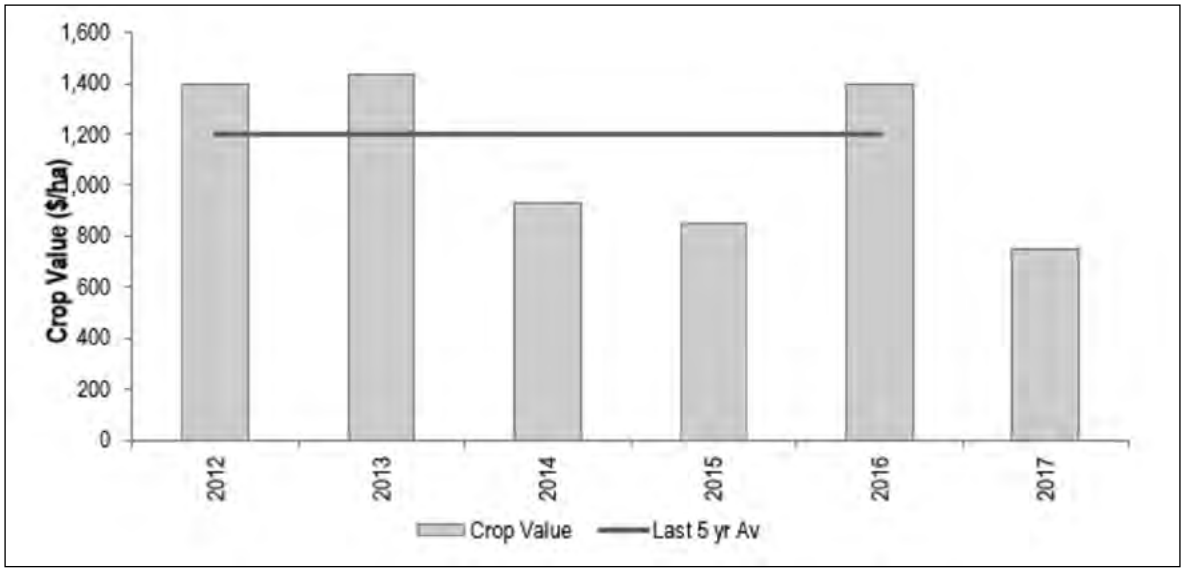

Figure 1. Crop value ($/ha) for SW Victorian farm from 2012 – 2017 (with 2017 severely affected by a frost event).

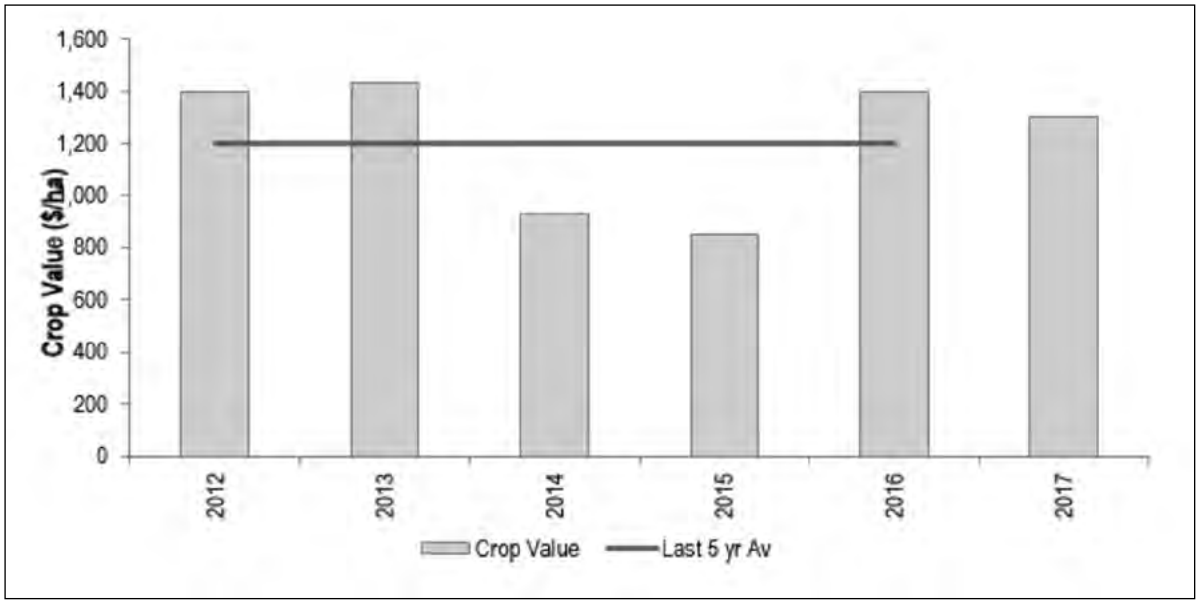

Figure 2. Crop value ($/ha) for SW Victorian 'model' farm from 2012 – 2017 (without 2017 affected by frost).

Examples of the role insurance can play

Figure 1 indicates the $/crop ha income for a model local south west (SW) Victorian farm ('model farm'). A farm with approximately 45% canola and 45% wheat and 10% other (hay, barley, oats) has been modelled by ORM. In 2017 frost severely affected many wheat crops in the region. Figure 1. shows the past five year's crop returns and 2017 with frost effect. Figure 2 is the same farm without the impact of frost reducing wheat yields. Income per hectare changed from $1,300/ha to $750/ha as a result of the frost and its effect on wheat yields (down from 6t/ha to 1t/ha). Canola was not affected by the 2017 frost.

Table 1. Costs associated with growing crops for SW Victorian farms.

	Costs $/crop ha
Overheads	100
Farm input costs	330
Machinery operating costs	240
Labour	170
Total	840

What would be the impact of taking insurance to alleviate the frost effect on income?

The model farm has a previous five year average income of $1,200/ha.

ORM Pty Ltd and AgProfit benchmark data indicates the following crop costs for SW Victorian farms (Table 1).

In order to cover the costs associated with growing the crops in the model farm, the business would need to insure to receive $840/ha. Note some labour cost listed within Table 1 is family labour which does not impact on cash flow.

If the business had taken multi-peril revenue insurance they could have insured to receive 70% of their five year's average income of $1200/ha which equates to $840/ha. Assuming they insured for the $840/ha, during 2017 with the frost, they would have received a payment of $90/ha (sum insured of $840/ha minus 2017 crop income of $750/ha) using MPCI revenue insurance.

Assuming a crop area of 2,000 ha annually, and premiums are between 5% and 15% of the insured value ($840/ha) or $42/ha to $126/ha, respectively.

Over the five years of data collected the model farm would have paid premiums of between $420,000 (@5%) and $1,260,000 (@15%) and would have received payout of $180,000 for the 2017 frost event.

If the business had taken out single peril frost insurance to protect against a frost event of the temperature falling below zero degrees the policy would have been triggered in 2017. If it is assumed that the business had taken out sufficient insurance to cover the input costs listed in Table 1 we would need cover of $840 per hectare for 2,000 hectares or $1,680,000 to cover costs which equates to a premium of $84,000 (@5%) and $336,000 (@15%).

Frost insurance is not tied to production and hence a business can take as much cover as they wish. Indicative premiums to payout if the temperature falls below zero degrees between October 15 and November 5 in Lake Bolac are approximately 10% of the sum insured.

The role of peril insurance — where it fits

Multi peril insurance is one of the many tools a farm business can utilise to help manage financial risk.

If a business is consistently struggling to generate profits due to high cost structures or poor production compared to district averages, adding an additional cost of MPCI premiums may not help increase profitability. In comparison, if profits are made in some years, but are highly variable due to climatic or disease occurrences, MPCI could assist to reduce income and profit variability.

Other ways to spread risk are as follows:

- Livestock
  - o Livestock typically make up a smaller percentage of total farm income but a larger part of profits due to lower associated costs. Stock can be locked up and fattened if paddock feed and conditions are not available.
- Time of sowing and crop type mix
  - o Growers who spread their risk, sow a variety of crops at a variety of times.
- Hay
  - o By growing hay, growers are reducing their reliance on spring rainfall.
  - o Hay is a safer option if concerned about the impact of frost.
- Financial buffers, such as off farm investments are an example of spreading risk. These can include:
- Equity in land.
- Farm management deposits (FMDs).
- Cash reserves.
- Shares.

Briefly, FMDs have taxation advantages. An individual pays a marginal rate of tax as determined by the taxable profit in the financial year when the FMD is withdrawn. No tax is paid in the year of the deposit, businesses may be able to offset FMDs against loans.

Shares are liquid and can be converted to cash very quickly.

All of the financial buffers listed can be utilised to supplement income in poorer years.

In order to have a financial buffer a business needs to be able to generate profits that can be put away for a 'rainy day'. The funds are not utilised until a poor season, during which they are used to fund annual inputs.

Financial buffers should ideally be large enough so that they can pay a farm's operating costs for one season. The down side of a large financial buffer is that businesses need to also have that side of their business making a good return when it is not being used for farm costs.

Conclusion

Peril insurance should not be seen as the only way to manage financial risk in farm businesses. It is one of the many tools available to growers along with general good financial and production management practices. Peril insurance has a benefit in some situations but not all and farm businesses should conduct a thorough assessment of the merits of multi peril insurance for their own personal and business circumstances before purchasing policies.

Useful resources

https://grdc.com.au/resources-and-publications/groundcover/ground-cover-issue-121-mar-apr-2016/multi-peril-insurance-can-take-the-stress-from-risk

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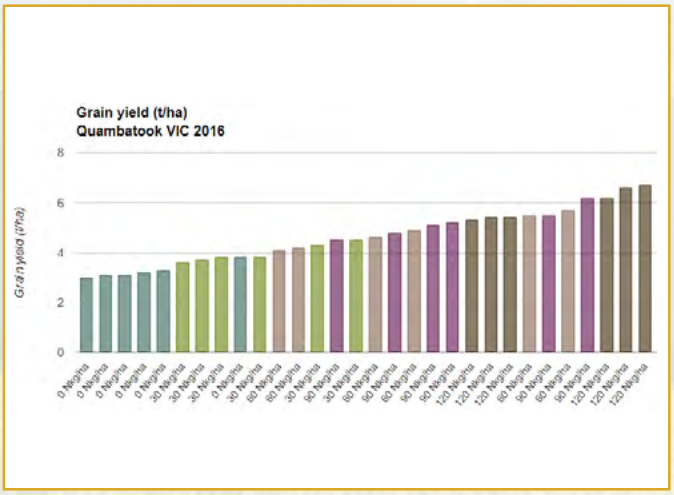

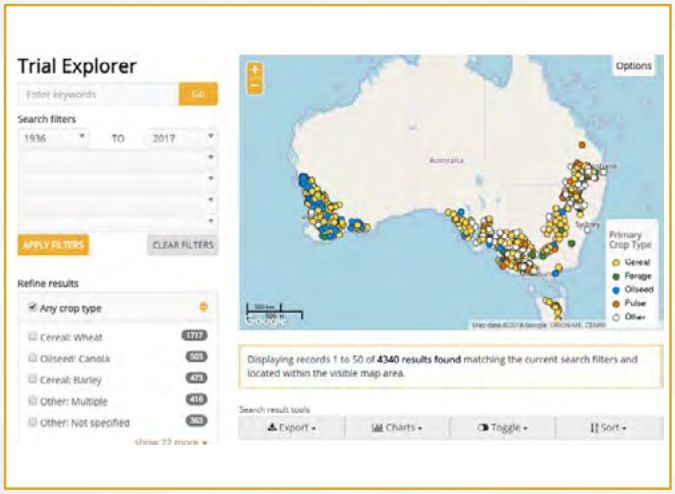

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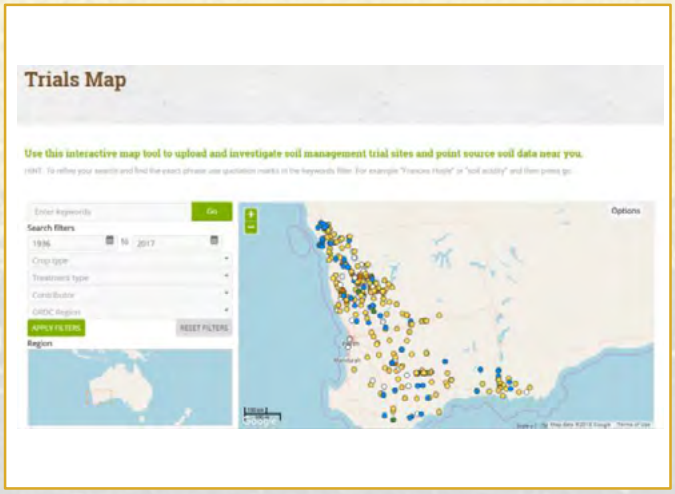

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Staff performance management

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Keywords

- staff, managers, feedback, performance.

Take home messages

- Formal staff performance measurement and feedback (staff reviews) drives improved staff performance. Staff want feedback; they want to know what you want/need them to stop doing and what you want/need them to start doing.
- Avoid the 'last straw' approach to performance feedback (the one that breaks the camel's back).
- The root cause of underperformance will be due to:
  - ☐ Structures (employer's responsibility).
  - ☐ Resources (employer's responsibility).
  - ☐ Competency (employer's responsibility).
  - ☐ Commitment (employee's responsibility).
- Take them to the bakery and give feedback with your eyebrows up!

Content

I conducted a performance review with Sam, a young man in his early 20s who worked for an agricultural business in central western NSW. The review discussion went as follows:

Me: "Sam, how much of your best efforts is your boss getting from you?"

Sam: "Not sure what you mean." (Sam did know what I meant)

Me: "Out of a 100 what score would you give yourself?"

Sam: "Don't know"

Me: "Have a guess." (Most of the time their 'guess' will be right)

Sam: "Oh, around 70 per cent".

Me: "Sam, is the boss paying 100 per cent of your wage or only 70 per cent of it?"

Sam: "Hey, that's not fair." (Sam said with an annoyed tone)

Me: "I agree. Where do you want to make the adjustment, do you want to increase your effort or do want me to help you write your resume?"

Sam is now putting in his best efforts and loving his job.

When we look into a mirror we're after feedback. What adjustments do I need to make? Is there anything stuck in my teeth? No, right I'm good to go.

So why are managers reluctant to sit down with their staff and provide feedback on their performance, when we know that performance measurement and feedback fuels performance improvement.

It's called the attract/avoid conflict. Managers sometimes want staff to do things differently (attract) but they don't want to upset them (avoid). So, managers tend to put up with poor performance/ attitudes until, after days/months/years, they've had enough and they snap.

To improve staff performance, and therefore, productivity and outcomes it's important to follow these three tips:

- Position descriptions (PDs) – PDs outline the role, tasks, attitudes and standards expected by the manager. It's important for staff to sign the PD in recognition that they now know your expectations and standards.
- Review and improvement meetings – Meet each month to review past month's activities and next month's objectives. Follow a set agenda with work, health and safety (WH&S) as the first item on the agenda. Get them to report on their activities, especially any work that they have had to redo.
- Have at least three bakery chats each year – This is where the manager takes their staff member to the local bakery, buys them a coffee and has an informal chat about work and how they're going. Staff members are encouraged to provide feedback on the performance of the manager as a boss. In particular, feedback regarding the working relationship and suggestions for change. Managers should be prepared to listen as no-one is the perfect boss!

Conclusion

And remember, if you see me with food on my face, tell me. I'll be embarrassed and you'll feel uncomfortable telling me, but I won't walk around with food on my face for the rest of the day. And when I get home and look in the mirror and see food on my face, I won't resent the fact that you didn't tell me. In other words, feedback although sometimes awkward to provide generally leads to a better outcome.

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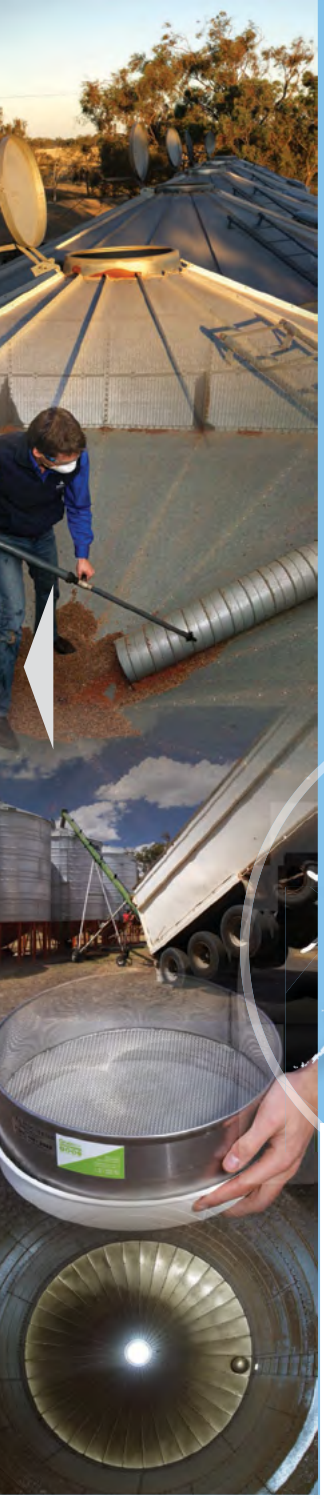

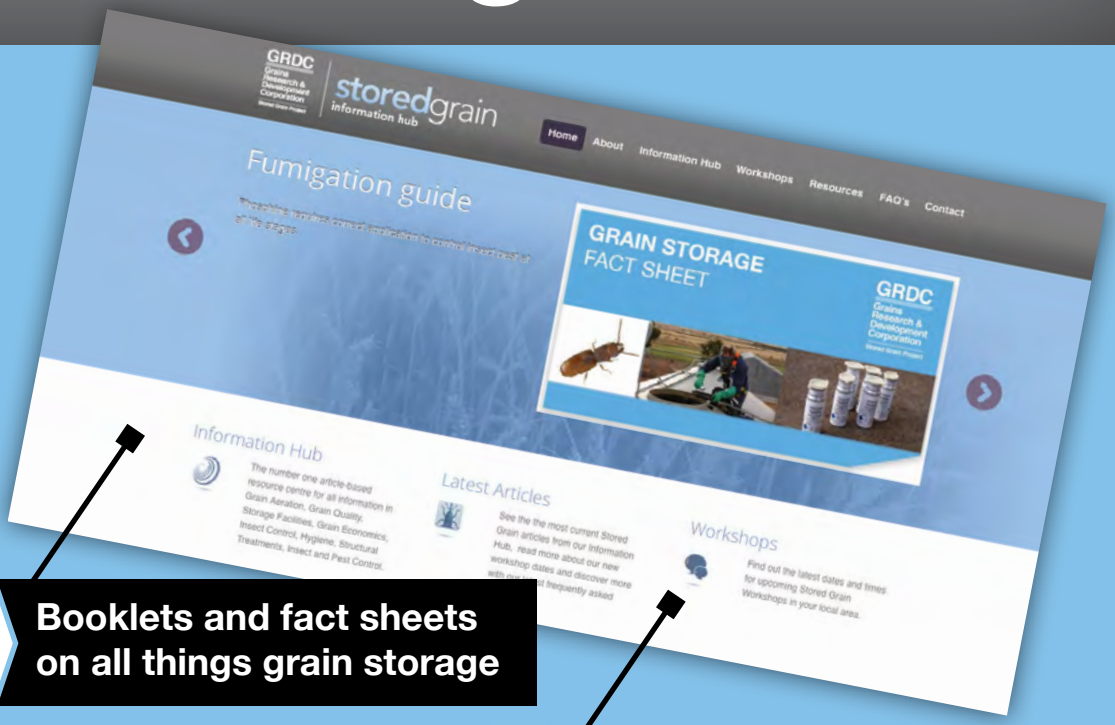

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STORED GRAIN PROJECT

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THE 2017-2019 GRDC SOUTHERN REGIONAL PANEL

FEBRUARY 2018

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CHAIR - KEITH PENGILLEY

Based at Evandale in the northern Midlands of Tasmania, Keith was previously the general manager of a dryland and irrigated family farming operation at Conara (Tasmania), operating a 7000 hectare mixed-farming operation over three properties. He is a director of Tasmanian Agricultural Producers, a grain accumulation, storage, marketing and export business. Keith is the chair of the GRDC Southern Regional Panel which identifies grower priorities and advises on the GRDC's research, development and extension investments in the southern grains region.

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DEPUTY CHAIR - MIKE MCLAUGHLIN

Mike is a researcher with the University of Adelaide, based at the Waite campus in South Australia. He specialises in soil fertility and crop nutrition, contaminants in fertilisers, wastes, soils and crops. Mike manages the Fertiliser Technology Research Centre at the University of Adelaide and has a wide network of contacts and collaborators nationally and internationally in the fertiliser industry and in soil fertility research.

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JOHN BENNETT

Based at Lawloit, between Nhill and Kaniva in Victoria's West Wimmera, John, his wife Allison and family run a mixed farming operation across diverse soil types. The farming system is 70 to 80 percent cropping, with cereals, oilseeds, legumes and hay grown. John believes in the science-based research, new technologies and opportunities that the GRDC delivers to graingrowers. He wants to see RD&E investments promote resilient and sustainable farming systems that deliver more profit to growers and ultimately make agriculture an exciting career path for young people.

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PETER KUHLMANN

Peter is a farmer at Mudamuckla near Ceduna on South Australia's Western Eyre Peninsula. He uses liquid fertiliser, no-till and variable rate technology to assist in the challenge of dealing with low rainfall and subsoil constraints. Peter has been a board member of and chaired the Eyre Peninsula Agricultural Research Foundation and the South Australian Grain Industry Trust.

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FIONA MARSHALL

Fiona has been farming with her husband Craig for 21 years at Mulwala in the Southern Riverina. They are broadacre, dryland grain producers and also operate a sheep enterprise. Fiona has a background in applied science and education and is currently serving as a committee member of Riverine Plains Inc, an independent farming systems group. She is passionate about improving the profile and profitability of Australian grain growers.

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JON MIDWOOD

Jon has worked in agriculture for the past three decades, both in the UK and in Australia. In 2004 he moved to Geelong, Victoria, and managed Grainsearch, a grower-funded company evaluating European wheat and barley varieties for the high rainfall zone. In 2007, his consultancy managed the commercial contract trials for Southern Farming Systems (SFS). In 2010 he became Chief Executive of SFS, which has five branches covering southern Victoria and Tasmania. In 2012, Jon became a member of the GRDC's HRZ Regional Cropping Solutions Network.

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ROHAN MOTT

A fourth generation grain grower at Turriff in the Victorian Mallee, Rohan has been farming for more than 25 years and is a director of Mott Ag. With significant on-farm storage investment, Mott Ag produces wheat, barley, lupins, field peas, lentils and vetch, including vetch hay. Rohan continually strives to improve productivity and profitability within Mott Ag through broadening his understanding and knowledge of agriculture. Rohan is passionate about agricultural sustainability, has a keen interest in new technology and is always seeking ways to improve on-farm practice.

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RICHARD MURDOCH

Richard along with wife Lee-Anne, son Will and staff, grow wheat, canola, lentils and faba beans on some challenging soil types at Warooka on South Australia's Yorke Peninsula. They also operate a self-replacing Murray Grey cattle herd and Merino sheep flock. Sharing knowledge and strategies with the next generation is important to Richard whose passion for agriculture has extended beyond the farm to include involvement in the Agricultural Bureau of SA, Advisory Board of Agriculture SA, Agribusiness Council of Australia SA, the YP Alkaline Soils Group and grain marketing groups.

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RANDALL WILKSCH

Based at Yeelanna on South Australia's Lower Eyre Peninsula, Randall is a partner in Wilksch Agriculture, a family-owned business growing cereals, pulses, oilseeds and coarse grain for international and domestic markets. Managing highly variable soil types within different rainfall zones, the business has transitioned through direct drill to no-till, and incorporated CTF and VRT. A Nuffield Scholar and founding member of the Lower Eyre Agricultural Development Association (LEADA), Randall's off-farm roles have included working with Kondinin Group's overview committee, the Society of Precision Agriculture in Australia (SPAA) and the Landmark Advisory Council.

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KATE WILSON

Kate is a partner in a large grain producing operation in Victoria's Southern Mallee region. Kate and husband Grant are fourth generation farmers producing wheat, canola, lentils, lupins and field peas. Kate has been an agronomic consultant for more than 20 years, servicing clients throughout the Mallee and northern Wimmera. Having witnessed and implemented much change in farming practices over the past two decades, Kate is passionate about RD&E to bring about positive practice change to growers.

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BRONDWEN MACLEAN

Brondwen MacLean has spent the past 20 years working with the GRDC across a variety of roles and is currently serving as General Manager for the Applied R&D business group. She has primary accountability for managing all aspects of the GRDC's applied RD&E investments and aims to ensure that these investments generate the best possible return for Australian grain growers. Ms MacLean appreciates the issues growers face in their paddocks and businesses. She is committed to finding effective and practical solutions `from the ground-up'.

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2017–2019 SOUTHERN REGIONAL CROPPING SOLUTIONS NETWORK (RCSN)

The RCSN initiative was established to identify priority grains industry issues and desired outcomes and assist the GRDC in the development, delivery and review of targeted RD&E activities, creating enduring profitability for Australian grain growers. The composition and leadership of the RCSNs ensures constraints and opportunities are promptly identified, captured and effectively addressed. The initiative provides a transparent process that will guide the development of targeted investments aimed at delivering the knowledge, tools or technology required by growers now and in the future. Membership of the RCSN network comprises growers, researchers, advisers and agribusiness professionals. The three networks are focused on farming systems within a particular zone – low rainfall, medium rainfall and high rainfall – and comprise 38 RCSN members in total across these zones.

REGIONAL CROPPING SOLUTIONS NETWORK SUPPORT TEAM

SOUTHERN RCSN CO-ORDINATOR: JEN LILLECRAPP

Jen is an experienced extension consultant and partner in a diversified farm business, which includes sheep, cattle, cropping and viticultural enterprises. Based at Struan in South Australia, Jen has a comprehensive knowledge of farming systems and issues affecting the profitability of grains production, especially in the high rainfall zone. In her previous roles as a district agronomist and operations manager, she provided extension services and delivered a range of training programs for local growers. Jen was instrumental in establishing and building the MacKillop Farm Management Group and through validation trials and demonstrations extended the findings to support growers and advisers in adopting best management practices. She has provided facilitation and coordination services for the high and medium rainfall zone RCSNs since the initiative's inception.

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LOW RAINFALL ZONE CO-LEAD: BARRY MUDGE

Barry has been involved in the agricultural sector for more than 30 years. For 12 years he was a rural officer/regional manager in the Commonwealth Development Bank. He then managed a family farming property in the Upper North of SA for 15 years before becoming a consultant with Rural Solutions SA in 2007. He is now a private consultant and continues to run his family property at Port Germein. Barry has expert and applied knowledge and experience in agricultural economics. He believes variability in agriculture provides opportunities as well as challenges and should be harnessed as a driver of profitability within farming systems. Barry was a previous member of the Low Rainfall RCSN and is current chair of the Upper North Farming Systems group.

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LOW RAINFALL ZONE CO-LEAD: JOHN STUCHBERY

John is a highly experienced, business-minded consultant with a track record of converting evidence-based research into practical, profitable solutions for grain growers. Based at Donald in Victoria, John is well regarded as an applied researcher, project reviewer, strategic thinker and experienced facilitator. He is the founder and former owner of JSA Independent (formerly John Stuchbery and Associates) and is a member of the SA and Victorian Independent Consultants group, a former FM500 facilitator, a GRDC Weeds Investment Review Committee member, and technical consultant to BCG-GRDC funded 'Flexible Farming Systems and Water Use Efficiency' projects. He is currently a senior consultant with AGRIvision Consultants.

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HIGH RAINFALL ZONE LEAD: CAM NICHOLSON

Cam is an agricultural consultant and livestock producer on Victoria's Bellarine Peninsula. A consultant for more than 30 years, he has managed several research, development and extension programs for organisations including the GRDC (leading the Grain and Graze Programs), Meat and Livestock Australia and Dairy Australia. Cam specialises in whole-farm analysis and risk management. He is passionate about up-skilling growers and advisers to develop strategies and make better-informed decisions to manage risk – critical to the success of a farm business. Cam is the program manager of the Woady Yaloak Catchment Group and was highly commended in the 2015 Bob Hawke Landcare Awards.

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MEDIUM RAINFALL ZONE LEAD: KATE BURKE

An experienced trainer and facilitator, Kate is highly regarded across the southern region as a consultant, research project manager, public speaker and facilitator. Based at Echuca in Victoria, she is a skilled strategist with natural empathy for rural communities. Having held various roles from research to commercial management during 25 years in the grains sector, Kate is now the managing director of Think Agri Pty Ltd, which combines her expertise in corporate agriculture and family farming. Previously Kate spent 12 years as a cropping consultant with JSA Independent in the Victorian Mallee and Wimmera and three years as a commercial manager at Warakirri Cropping Trust.

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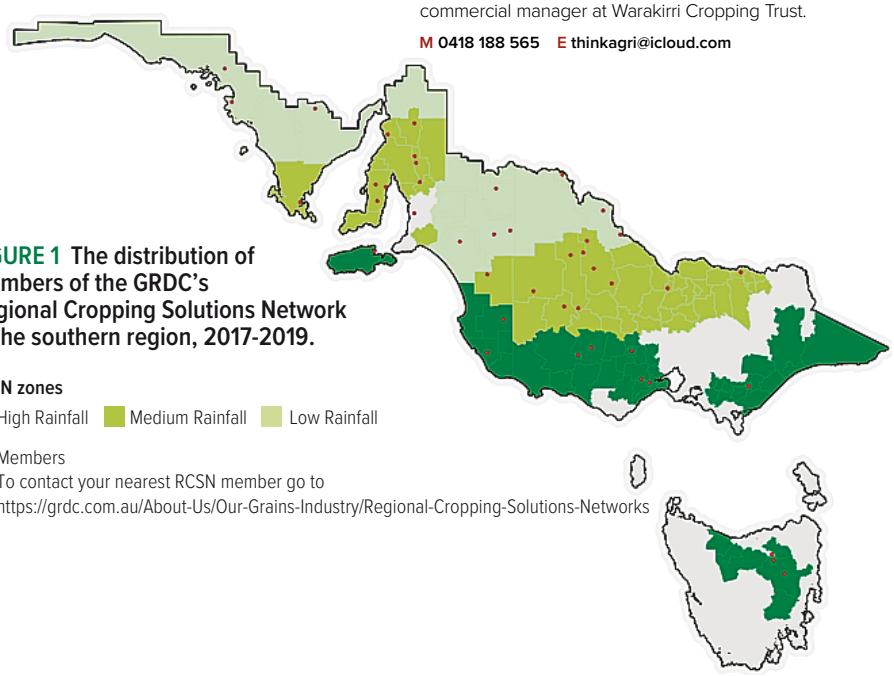

FIGURE 1 The distribution of members of the GRDC's Regional Cropping Solutions Network in the southern region, 2017-2019.

To contact your nearest RCSN member go to https://grdc.com.au/About-Us/Our-Grains-Industry/Regional-Cropping-Solutions-Networks

KEY CONTACTS

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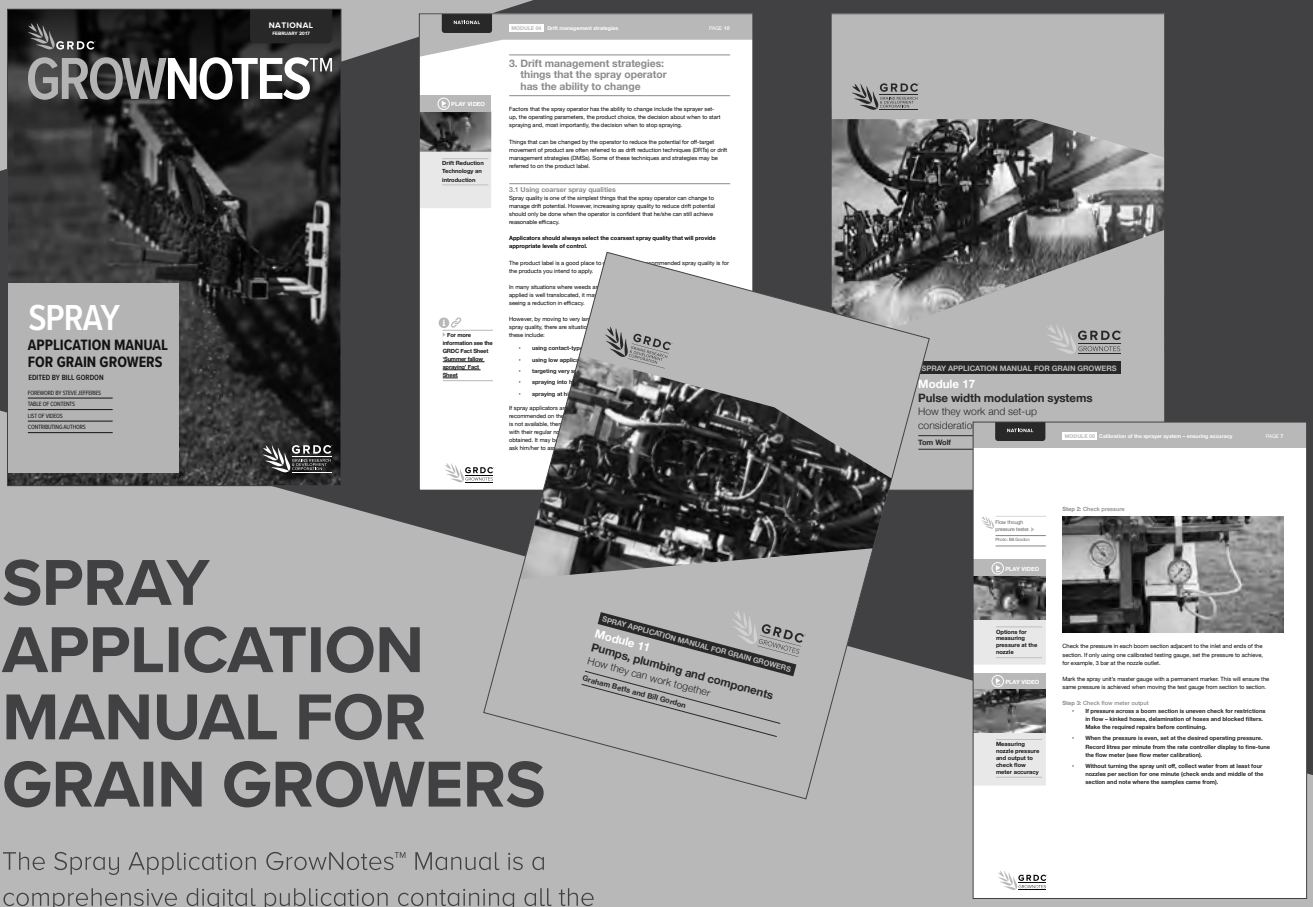
GRDC™ GROWNOTES

NEWNEWNEW

SPRAY APPLICATION GROWNOTES™ MANUAL



SPRAY APPLICATION MANUAL FOR GRAIN GROWERS

The Spray Application GrowNotes™ Manual is a comprehensive digital publication containing all the information a spray operator needs to know when it comes to using spray application technology.

It explains how various spraying systems and components work, along with those factors that the operator should consider to ensure the sprayer is operating to its full potential.

This new manual focuses on issues that will assist in maintaining the accuracy of the sprayer output while improving the efficiency and safety of spraying operations. It contains many useful tips for growers and spray operators and includes practical information – backed by science – on sprayer set-up, including self-propelled sprayers, new tools for determining sprayer outputs, advice for assessing spray coverage in the field, improving droplet capture by the target, drift-reducing equipment and techniques, the effects of adjuvant and nozzle type on drift potential, and surface temperature inversion research.

It comprises 23 modules accompanied by a series of videos which deliver 'how-to' advice to growers and spray operators in a visual easy-to-digest manner. Lead author and editor is Bill Gordon and other contributors include key industry players from Australia and overseas.

Spray Application GrowNotes™ Manual – go to: https://grdc.com.au/Resources/GrowNotes-technical Also go to https://grdc.com.au/Resources/GrowNotes and check out the latest versions of the Regional Agronomy Crop GrowNotes™ titles.

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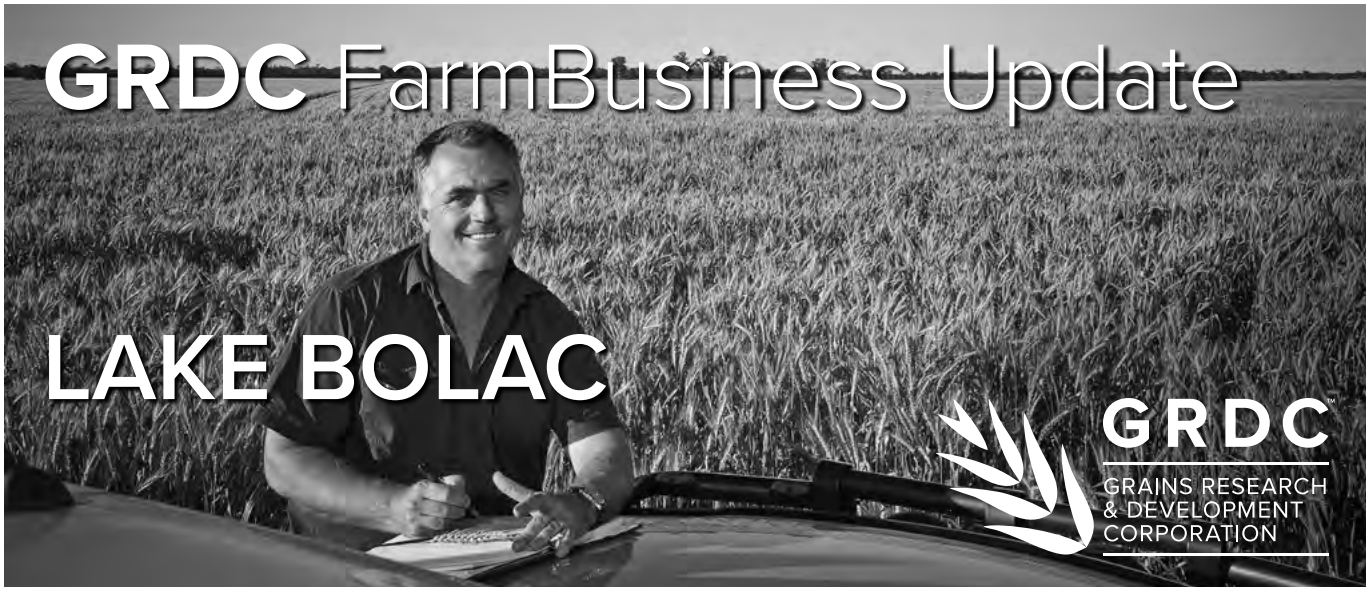

Acknowledgements

The ORM team would like to thank those who have contributed to the successful staging of the Lake Bolac GRDC Farm Business Updates:

- The local GRDC Farm Business Update steering committee that includes both government and private consultants and GRDC Southern Regional Panel members

- Partnering organisation: SFS

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You can now provide feedback electronically ‘as you go’. An electronic evaluation form can be accessed by typing the URL address below into your internet browser.

To make the process as easy as possible, please follow these points:

- Complete the survey on one device (i.e. don’t swap between your iPad and Smartphone devices. Information will be lost).
- One person per device (Once you start the survey, someone else cannot use your device to complete their survey).
- You can start and stop the survey whenever you choose, **just click ‘Next’ to save responses before exiting the survey**. For example, after a session you can complete the relevant questions and then re-access the survey following other sessions.

https://www.surveymonkey.com/r/LakeBolac-FBU

2017 Lake Bolac GRDC Farm Business Updates Evaluation

1. Name

ORM has permisssion to follow me up in regards to post event outcomes.

2. Location of Update

3. How would you describe your <u>main</u> role? *(choose one only)*

- ❑ Grower
- ❑ Agronomic adviser
- ❑ Farm business adviser
- ❑ Financial adviser
- ❑ Communications/extension
- ❑ Grain marketing
- ❑ Farm input/service provider
- ❑ Banking
- ❑ Accountant
- ❑ Researcher
- ❑ Student
- ❑ Other* (please specify)

Your feedback on the presentations

For each presentation you attended, please rate the content relevance and presentation quality on a scale of 0 to 10 by placing a number in the box (**10 = totally satisfactory, 0 = totally unsatisfactory**).

4. Choosing and justifying the right sprayer: *David Smith*

Content relevance ____ /10 Presentation quality ____ /10

Have you got any comments on the content or quality of the presentation?

5. Family farm business decisions - better outcomes from improved decisions: *Derek Tiller*

Content relevance ____ /10 Presentation quality ____ /10

Have you got any comments on the content or quality of the presentation?

6. Characteristics and habits of Top 20% operators: *Paul Blackshaw*

Content relevance ____ /10 Presentation quality ____ /10

Have you got any comments on the content or quality of the presentation?

7. Risk management options: *David Smith*

Content relevance ☐ /10 Presentation quality ☐ /10

Have you got any comments on the content or quality of the presentation?

8. Staff performance management: *Neville Brady*

Content relevance ☐ /10 Presentation quality ☐ /10

Have you got any comments on the content or quality of the presentation?

Your next steps

9. Please describe at least one new strategy you will undertake as a result of attending this Update event

10. What are the first steps you will take? e.g. seek further information from a presenter, consider a new resource, talk to my network, start a trial in my business

Your feedback on the Update event

11. Thinking about your experience, how strongly do you agree or disagree with the following statements

	Strongly agree	Agree	Neither agree nor Disagree	Disagree	Strongly disagree
This event has increased my awareness and knowledge of farm business decision-making	❑	❑	❑	❑	❑
Participating in this event has reinforced or enhanced my industry networks	❑	❑	❑	❑	❑
I know who to talk to, or where to go, to further explore the information that interested me	❑	❑	❑	❑	❑

Comments

12. Are there any subjects you would like covered in the next Update event?

13. What is the likelihood you will attend an Update event like this in the future?

Very likely	Likely	May or may not	Unlikely	Will not attend
❑	❑	❑	❑	❑

Comments

14. Overall, how did the Update event meet you expectations?

Very much exceeded	Exceeded	Met	Partially met	Did not meet
❑	❑	❑	❑	❑

Comments

15. Finally, do you have any comments or suggestions to improve the GRDC Update events?

Thank you for your feedback.