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22ND TO 26TH JUNE 2020

FARM TO PROFIT FARM BUSINESS UPDATE



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FARM TO PROFIT FARM BUSINESS UPDATE



ONLINE DELIVERY

Central and Southern New South Wales

22nd to 26th June 2020

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**GRDC Farm Business Update online
proudly convened by ORM Pty Ltd.**



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GRDC Farm Business Update online Central and Southern New South Wales



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Using PREDICTA[®] B soil tests and advice from your local accredited agronomist, these diseases can be detected and managed before losses occur. PREDICTA[®] B is a DNA-based soil-testing service to assist growers in identifying soil borne diseases that pose a significant risk, before sowing the crop.

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http://pir.sa.gov.au/research/services/molecular_diagnostics/predicta_b

Potential high-risk paddocks:

- Bare patches, uneven growth, white heads in previous crop
- Paddocks with unexplained poor yield from the previous year
- High frequency of root lesion nematode-susceptible crops, such as chickpeas
- Intolerant cereal varieties grown on stored moisture
- Newly purchased or leased land
- Cereals on cereals
- Cereal following grassy pastures
- Durum crops (crown rot)

There are PREDICTA[®] B tests for most of the soil-borne diseases of cereals and some pulse crops:

- Crown rot (cereals)
- Rhizoctonia root rot
- Root lesion nematodes
- Yellow leaf spot
- Common root rot
- Pythium clade f
- Charcoal rot
- Ascochyta blight of chickpea
- Sclerotinia stem rot
- Long fallow disorder
- Phytophthora root rot
- Fusarium stalk rot
- White grain disorder
- Sclerotinia stem rot

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lab@crownanalytical.com.au

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Farming the Business

Sowing for your future

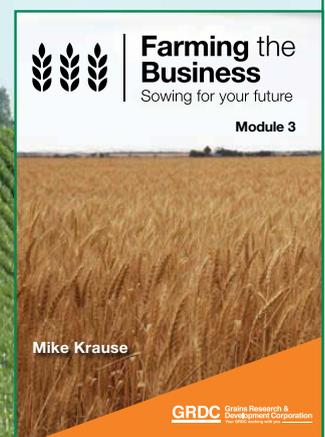
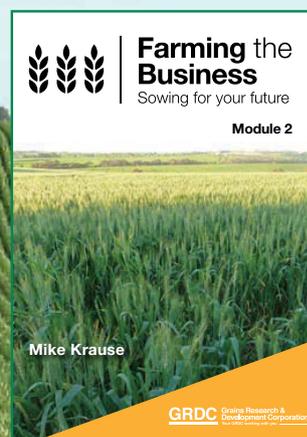
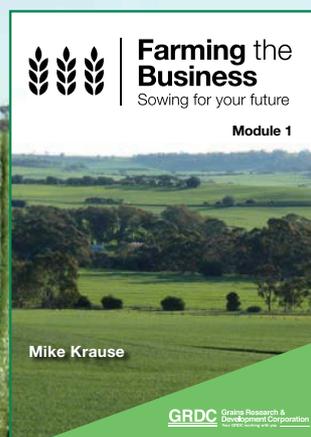
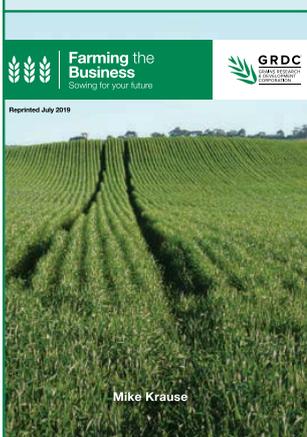
The GRDC's **Farming the Business** manual is for farmers and advisers to improve their farm business management skills.

It is segmented into three modules to address the following critical questions:

-  **Module 1:** What do I need to know about business to manage my farm business successfully?
-  **Module 2:** Where is my business now and where do I want it to be?
-  **Module 3:** How do I take my business to the next level?

The **Farming the Business** manual is available as:

- **Hard copy** – Freephone **1800 11 00 44** and quote Order Code: GRDC873
There is a postage and handling charge of \$10.00. Limited copies available.
- **PDF** – Downloadable from the GRDC website – www.grdc.com.au/FarmingTheBusiness
or
- **eBook** – Go to www.grdc.com.au/FarmingTheBusinessBook for the Apple iTunes bookstore, and download the three modules and sync the eBooks to your iPad.



Economic Outlook – Agriculture and the global supply chains

Presented by John Crosbie

Deloitte Access Economics

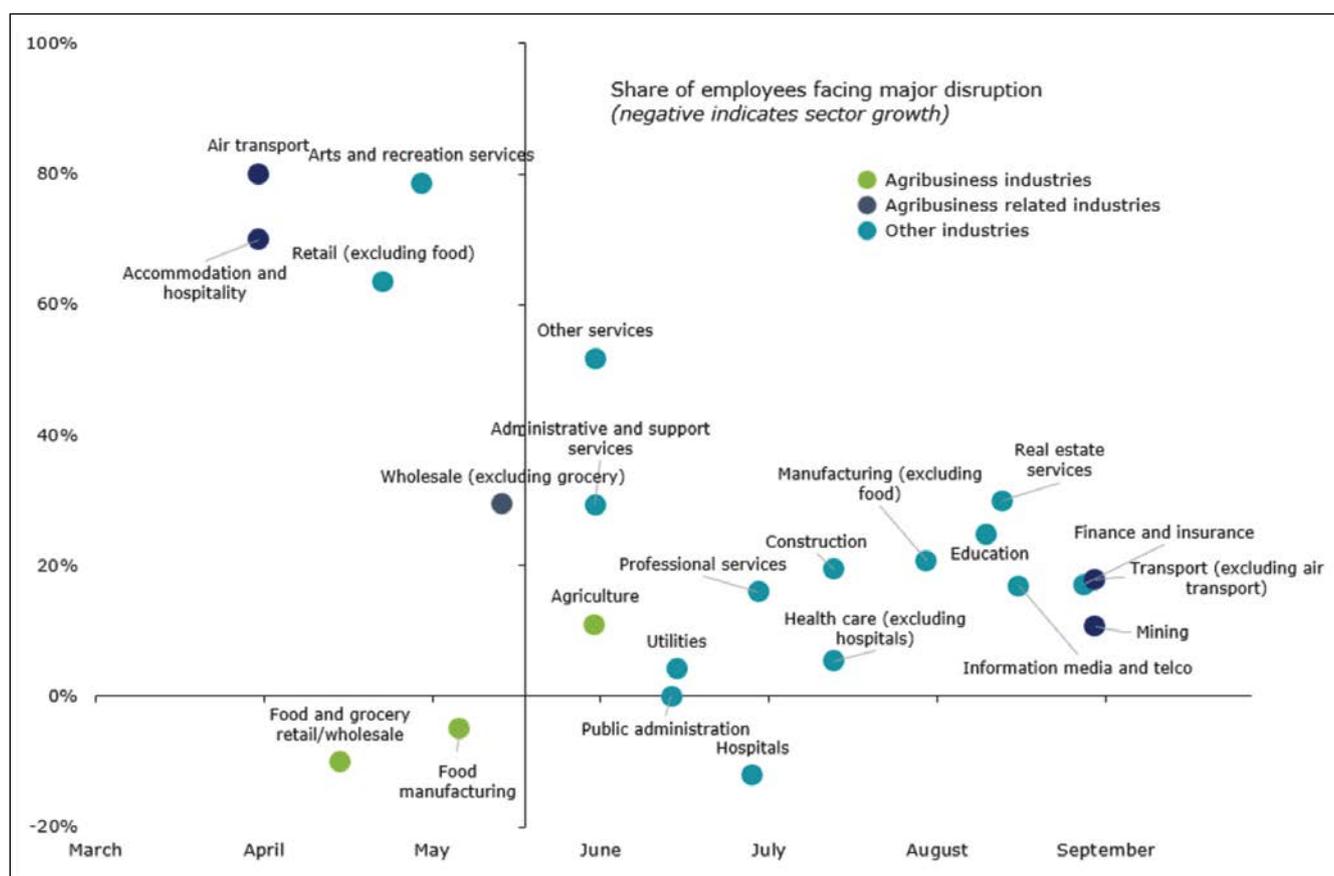
For further reading refer to;

The Agribusiness Bulletin – Deloitte Access Economics

The *Agribusiness Bulletin* focuses on national and local industry, as well as cross-industry insights and trends. This includes some of the drivers we expect to shape the future of the industry and potential challenges that may arise. To get more articles like this delivered straight to your inbox, subscribe to the *Agribusiness Bulletin*.

Australian Agribusiness: a quiet achiever in a troubled economy.

<https://www2.deloitte.com/au/en/pages/consumer-industrial-products/articles/australian-agribusiness-quiet-achiever-in-troubled-economy.html>



Note: Figure charts jobs at risk (vertical axis), relative to period of expected peak impact; Source: Deloitte (3 April)



My follow up questions for the speaker; _____

Want to learn more, here are some suggestions;

References:

1. Rabobank (2020), “Coronavirus and agriculture – how worried should we be?”
2. Sainsbury, M (2020) Australian wine exports to China down 90% as coronavirus takes its toll
3. Plaganyi, E, et al (2010), “Coronavirus is killing Australia’s lobster export market”, The Conversation
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11. The Conversation, 2020
12. ABC News ‘ Unemployment in Australia's cities amid COVID-19 downturn sees farmers inundated’
13. ABARES, Agricultural Commodities 2020



More about John . . .

John Crosbie is an Associate Director at Deloitte with an industry background heavily involved in the grains industry including previous role as the General Manager Supply Chain Operations with AWB.

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John Crosbie – Associate Director
jcrosbie@deloitte.com.au



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NVT tools

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Crop Disease Au App



Access to current disease resistance ratings & disease information.

Long Term Yield App



Easy access to the analysed NVT Multi Environment Trial (MET) data.

www.nvtonline.com.au



Managing your farm business exposure to grain markets and counterparty risk

Presented by Josh Gordon

NSW DPI

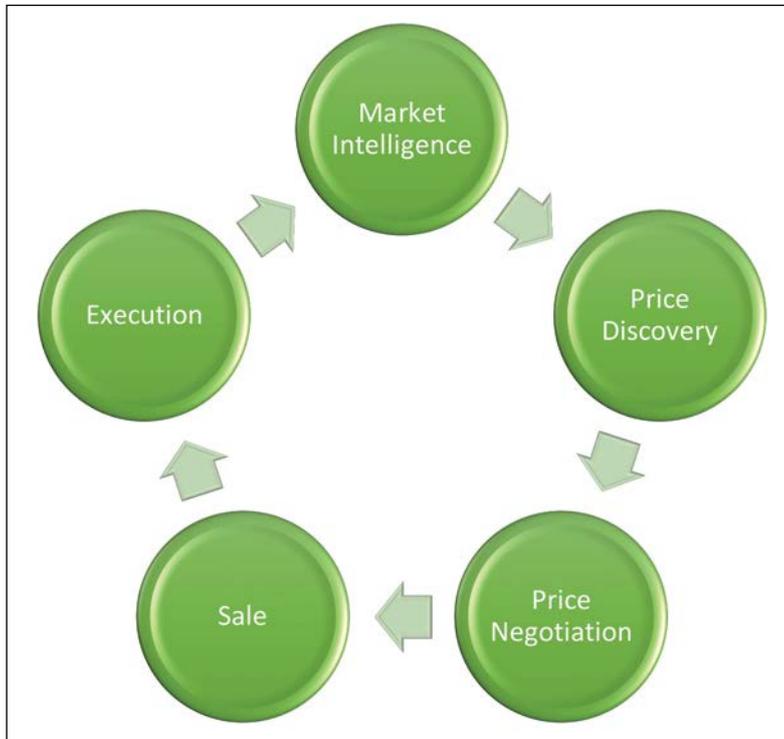


Figure 1. Simple diagram of the grain marketing process.

The most important feature is that it is a dynamic process that continues to develop and never ends; as one deal closes and another one opens.

Key Messages:

- ▶ What is a market and how do we assess marketing risk.
- ▶ Decision making and timing of decisions is clearly important.
- ▶ What information from who, do growers need to inform their decisions.
- ▶ How can counterparty risk be analysed and managed.
- ▶ Some basic steps can remove much of the risk and stress.

Introduction

No farmers grow crops because of an interest in grain markets and counterparty risk. Nevertheless, it is an essential part of the job. Growers can outsource this whole part of their business however even these growers need to know they are getting value from their service providers. Using market information



for decision making and marketing grain production can be complex. By defining several aspects of marketing and risk assessment, greater clarity in decision making will be provided. Leading to a deeper understanding of risk assessment and management for the grower. How to define, identify and manage risk using simple strategies and/or complex financial tools. Simple assessments can help to manage exposure to market and marketing risk. What information is required, what options are available and when to make a decision.

My follow up questions for the speaker; _____

To command more money, provide more value?

Value comes in many forms and each enterprise values their attributes differently. In most aspects of business, we exchange value in return for money. For example, selling or buying goods (value) in exchange for money, or as a service provider exchanging a service (value) for money. To command more money, we typically need to provide more value, for example; better goods or a higher quality service.

Some examples are:

- Maximise the value of the quality you produce, if you store on-farm:
 - o Segregate based on grade and keep running samples and record stack averages.
- Know your operating environment:
 - o Bulk handlers typically don't provide flexibility of operation.
- Flexibility of supply can deliver additional value:
 - o Wet weather access, weekend loading, short notice loading, known quality.

| Category | On farm storage | Smaller BHC | Large BHC |
|--------------------------------|-----------------|-------------|-----------|
| Stock swapping | Poor | Poor | Very Good |
| All weather access | Average | Average | Good |
| Carry indefinitely | Poor | Very Good | Excellent |
| Hygiene credibility | Average | Good | Excellent |
| Hygiene performance | Good | Excellent | Excellent |
| Quality credibility | Average | Very Good | Excellent |
| Quality control | Very Good | Excellent | Excellent |
| Weekend and after hours access | Excellent | Average | Poor |
| Traceability to farm/paddock | Very Good | Poor | Poor |
| Inventory finance | Poor | Average | Excellent |



Self evaluation;

Do you have a clear marketing plan that is consistent and workable?

Yes I do? _____ At times but not consistent _____ No I don't?

How do you feel this impacts your grain marketing performance? _____

What marketing risks are you currently exposed to? Do you pay for a grain marketing service or adviser?

What other opportunities would you like to explore for grain marketing to contribute to your business profit?

We want to work on this in our business, what should we do next?

- Write a marketing plan.
- List key decision points / talk triggers.
- Build marketing relationships / call your grain marketers.
- Get your decision making info. Phone, SMS, Email
- How do we make it happen?



Our First Action _____

Our Second Action _____

Want to learn more, here are some suggestions;

Local grain buyers x 3

<https://www.awb.com.au/daily-grain-prices>

Local receival sites.

<https://www.usda.gov/oce/commodity/wasde/>



More about Josh . . .

Josh Gordon has worked with the NSW Department of Primary Industries International Engagement Unit since January 2015. Prior to this he spent over 10 years with Cargill and AWB Limited in business management and commodity marketing roles. As well as nine years with NSW DPI in agronomic research and industry development. Including as Executive Officer of the Australian Durum Industry Association. He leads foreign direct investment and trade development in the Grains & Oilseeds sector where he works to assess market risk and further trade and market access for Australian commodities. This work is linked directly with

broadacre production in his role as Chair of Central West Farming Systems, an independent, not-for-profit, farmer driven organization with over 300 members covering 14 million hectares in Central Western NSW. Josh has a Degree in Agricultural Science and holds Australian Financial Markets Association (AFMA) accreditation.

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Notes



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LOOK AROUND YOU.

1 in 5 people in rural Australia are currently experiencing mental health issues.



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The GRDC supports the mental wellbeing of Australian grain growers and their communities. Are you ok? If you or someone you know is experiencing mental health issues call *beyondblue* or Lifeline for 24/7 crisis support.

beyondblue
1300 22 46 36
www.beyondblue.org.au



Lifeline
13 11 14
www.lifeline.org.au



Looking for information on mental wellbeing? Information and support resources are available through:

www.ifarmwell.com.au An online toolkit specifically tailored to help growers cope with challenges, particularly things beyond their control (such as weather), and get the most out of every day.

www.blackdoginstitute.org.au The Black Dog Institute is a medical research institute that focuses on the identification, prevention and treatment of mental illness. Its website aims to lead you through the logical steps in seeking help for mood disorders, such as depression and bipolar disorder, and to provide you with information, resources and assessment tools.

www.crrmh.com.au The Centre for Rural & Remote Mental Health (CRRMH) provides leadership in rural and remote mental-health research, working closely with rural communities and partners to provide evidence-based service design, delivery and education.

Glove Box Guide to Mental Health

The *Glove Box Guide to Mental Health* includes stories, tips, and information about services to help connect rural communities and encourage conversations about mental health. Available online from CRRMH.



www.rrmh.com.au Rural & Remote Mental Health run workshops and training through its Rural Minds program, which is designed to raise mental health awareness and confidence, grow understanding and ensure information is embedded into agricultural and farming communities.

www.cores.org.au CORES™ (Community Response to Eliminating Suicide) is a community-based program that educates members of a local community on how to intervene when they encounter a person they believe may be suicidal.

www.headsup.org.au Heads Up is all about giving individuals and businesses tools to create more mentally healthy workplaces. Heads Up provides a wide range of resources, information and advice for individuals and organisations – designed to offer simple, practical and, importantly, achievable guidance. You can also create an action plan that is tailored for your business.

www.farmerhealth.org.au The National Centre for Farmer Health provides leadership to improve the health, wellbeing and safety of farm workers, their families and communities across Australia and serves to increase knowledge transfer between farmers, medical professionals, academics and students.

www.ruralhealth.org.au The National Rural Health Alliance produces a range of communication materials, including fact sheets and infographics, media releases and its flagship magazine *Partyline*.



Management under the microscope – strong financial indicators

Presented by *Chris Minehan, Rural Management Strategies* and *Simon Fritsch, Agripath*



Figure 1. The financial management cycle

Key Messages:

- ▶ Budgeting is a way of setting targets to manage income and expenses through the year.
- ▶ Working capital is the money that pays the bills and keeps the business operating.
- ▶ Equity is the value of your ownership in the business, debt is somebody else's asset.
- ▶ The relationship between debt and risk in business is not linear.
- ▶ Some basic planning of the financial aspects of a business can remove much of the stress and uncertainty.

Introduction

Business and Management are the disciplines devoted to organizing, analysing, and planning various types of business operations. And if that sounds really general, that's just because these fields cover a lot of ground! Financial management is more than just knowing how much you have in your business bank account. In short financial management entails planning, organising, controlling, monitoring and evaluating the financial resources of an organisation to achieve its overall objectives. There is no doubt that farm business managers have to be technically competent to operate farming business, beyond that is the competence in managing and planning the financial resources to maintain business operations and provide the flexibility to adapt, innovate, grow and weather the storms. Understanding and using the key financial tools that can support the monitoring and maintenance of strong financial indicators provides the insight to identify business strengths and weaknesses and to be proactive in setting the goals that support the vision of how the business should look in the future.



My follow up questions for the speaker; _____

Why banks like budgets

Banks like budgets because they tell the story of your farm in their language. Agronomy reports are the language of Agronomists and budgets are the language of bankers. A well-prepared budget will inform a bank about everything they want to understand about your farm, when processing a loan application. Banks will not have time to collate your data and interpret verbal instructions, you will need to present applications that are, well prepared and detailed. This would include a cashflow which is essential when structuring loan repayments/interest payments, to ensure that the timing of payments matches the timing of income. This will also assist with managing the working capital requirements through the season.

Financial statements prepared by your accountant tell part of this story but not all. They tell us about the past and budgets talk about the future. Bankers have a saying that “using financial statements to lend money is like driving a car looking through the rear-view mirror”.

Budgets – built from the ground up

The best place to start a budget is with a comprehensive production plan, based on sound scientific, agronomic principles. Cropping plans with expected yields and inputs plus livestock and pasture plans are not only essential for creating a good budget, they improve management and farm production as well. Building budgets from the ground up means capturing assumptions like crop area, expected yields, stocking rates plus expected sales, all of which are necessary to demonstrate that your budget is realistic. Keeping long term production and sales records for all commodities will also help in this process.

Avoid creating ‘top-down’ budgets using inflated or overly optimistic yields or prices. Remember that expected yields are not aspirational!

The key financial measures

KPIs can be used to measure various financial aspects of your farming business. Some KPIs are better suited to use for (internal) benchmarking than others; that is to benchmark your farm over time. An example of one KPI that is better used for internal monitoring and for a local area is Farm Operating Return per hectare. Other KPIs can be used for both internal and against industry benchmarks (external).

A suggested nine key financial measures that farm business owners can focus on and can be used to benchmark various financial aspects within their own business include:

- o Return on Assets under Management
- o Farm Operating Costs
- o Land Productivity
- o Asset Turnover Ratio
- o Interest Cover
- o Return on Equity
- o Plant Productivity
- o Labour Productivity
- o Equity Ratio



How to start evaluating your financial performance

1. If you want to improve your farm performance, know your starting point, decide on what you want to improve and have an end point or goal in mind in terms of key performance indicators (KPIs). They are the guide posts.
2. Become very familiar with the key drivers of your farming enterprises (cropping, livestock); understand the key Wimmera farm financial benchmarks or KPIs and calculate those KPIs yourself to better understand your own farm business.
3. The Pareto Principle should not be overlooked. It is forever present.
4. Use the Stop, Start, Continue process to introduce change into your farming practices.
5. Marginal analysis is a fundamental economic principle that underlies successful businesses.
6. Many of the possible gains involve minimising the losses in adverse years.

Self evaluation;

Do I have a working budget that is monitored on a regular basis?

Yes I do? _____ At times but not consistent _____ No I don't?

How do you feel this impacts your understanding of your financial performance? _____

Do I know my Equity to Debt ratio?

Yes _____ I think So _____ No I don't?

Would understanding more about the financial ratios assist with setting performance goals for your farm business? _____



Who are your primary sources of information relating to your financial performance?

Banker/ Accountant / Management Consultant

Should you seek out additional assistance to establish financial protocols in your business?

We want to work on this in our business, what should we do next?

In summary; strategies to build profit and ultimately resilience

- Use the STOP, START, CONTINUE process to brainstorm amongst yourselves to encourage change. Evaluate what works well and what could be improved.
- Do not lose sight of time management principles of important and urgent tasks and prioritise with that in mind. Set time aside to manage the planning of income and expenditure.
- Understand the major farm financial KPIs and apply them as a 'road map' for major decisions such as buying and financing plant, employing labour, leasing or share farming more land and or buying or selling farmland.

Our First Action _____

Our Second Action _____





More about Chris . . .

Chris Minehan is a director at Rural Management Strategies Farm Business Consultants in Wagga. He provides production, financial and business management advice, succession planning and strategic business assessments for farm businesses in southern NSW.

Chris grew up on a mixed farm at Cowra and studied Science in Agriculture at the University of Sydney, he also has a Master Degree in Business Management through Charles Sturt University.

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More about Simon . . .

Simon Fritsch, founder of Agripath, has over 20 years experience in agriculture with his client base encompassing irrigation, dry land farming and grazing operations.

He has Southern, Central, and Northern NSW farming systems experience. Simon's particular strengths have been in financial analysis and planning to deliver profitable outcomes for client businesses. Simon has worked as an irrigation agronomist for Twynam Cotton at Warren, a dry land consultant agronomist for Hassall & Associates and team leader Farm Business Consulting for Hassall & Associates.

Simon has worked in many parts of Australia, giving him a broad understanding of all facets of farming in diverse environments and an excellent network of skilled land managers/farm advisors. Simon has a degree in Rural Science.

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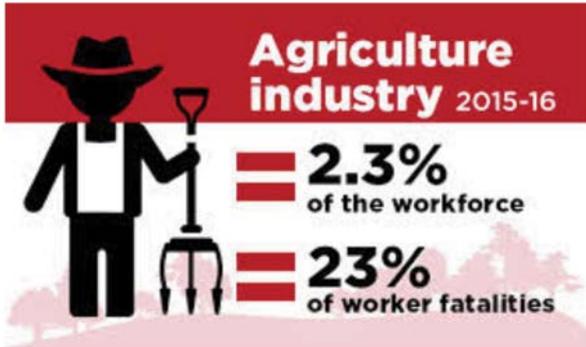
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Managing WHS to protect you and your employees

Presented by *Rebecca Fing*
House Paddock Training and Consulting Pty Ltd



Key Messages:

- ▶ Working Safely and productively is possible.
- ▶ WHS does not have to be a scary beast... you just need to know where to start
- ▶ Professional businesses balance safety and productivity - very well.
- ▶ Getting safety right saves lives.
- ▶ Ignorance towards WHS costs lives.

Introduction

This session will provide employers with an outline, tools and tips to improve their Work Health and Safety compliance and equally as important – to reduce the risk of people being injured or killed in the workplace. Agriculture is one of the most dangerous industries; farms often double as our homes and visitors are regularly welcomed. For these reasons, safety should be a higher priority than it often is. This session will provide a framework of the requirements, and the confidence to make a start, have the conversation and make farming businesses safer workplaces.

My follow up questions for the speaker; _____



Self evaluation;

Do you have a formal written WHS system in place?

Yes I do? _____ I have something but I need more _____ No I don't?

Who could you seek assistance from to develop something if required? _____

If you have a system in place does it reflect what actually happens in the business?

Yes _____ No

What are the main areas of inconsistency you would like to focus on? _____

Make a list of the reasons why clearer WHS processes would be beneficial to your business and employees?

We want to work on this in our business, what should we do next?

- Make a start on making your business safer! Today.
- Have open conversations about safety - often - they save lives.
- Ensure your business has an effective induction
- Ensure your team is effectively trained to work productively and safely
- Review your emergency preparedness... ensure you can respond when things go wrong!



What are the potential benefits of taking action to implement WHS policies;

- A Safer workplace!
- Improved business risk management
- Improved business compliance and peace of mind
- Improved ability to attract and retain staff
- Improved business professionalism

Our First Action _____

Our Second Action _____

Want to learn more, here are some suggestions;

- <https://www.housepaddockconsulting.com.au/whs>
- <https://www.safework.nsw.gov.au/your-industry/agriculture,-forestry-and-fishing>
- <https://www.safeworkaustralia.gov.au/agriculture>
- <https://www.farmsafe.org.au/Resources-for-Farmers>

Want to learn more, here are some suggestions;

- SafeWork NSW
- Safework Australia





More about Rebecca . . .

Rebecca Fing of House Paddock Training and Consulting has been helping farming businesses provide a safer more productive work environment for over 15 years. Based in Goondiwindi, Rebecca provides WHS and HR consulting services to farmers and small business and runs training and workshops to provide practical advice and tips to get the job done. Having been on over 400 farms from Emerald to the Adelaide Hills, Rebecca has seen it done well (and not so well!) and loves sharing what she has seen and learnt along the way. Rebecca hopes that a better understanding and some practical tips will enable business to “make a start” in the WHS space, rather than shy away from it.

Contact details

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www.housepaddockconsulting.com.au



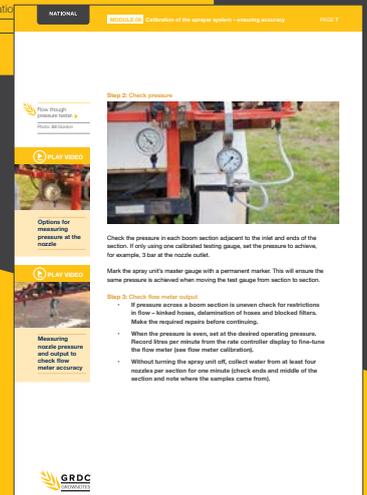
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SPRAY APPLICATION GROWNOTES™ MANUAL



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 sprayer operation, 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.



LOOK AROUND YOU.

1 in 5 people in rural Australia are currently experiencing mental health issues.



GRDC

GRAINS RESEARCH & DEVELOPMENT CORPORATION

The GRDC supports the mental wellbeing of Australian grain growers and their communities. Are you ok? If you or someone you know is experiencing mental health issues call *beyondblue* or Lifeline for 24/7 crisis support.

beyondblue

1300 22 46 36

www.beyondblue.org.au



Lifeline

13 11 14

www.lifeline.org.au



Looking for information on mental wellbeing? Information and support resources are available through:

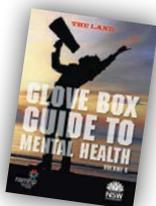
www.ifarmwell.com.au An online toolkit specifically tailored to help growers cope with challenges, particularly things beyond their control (such as weather), and get the most out of every day.

www.blackdoginstitute.org.au The Black Dog Institute is a medical research institute that focuses on the identification, prevention and treatment of mental illness. Its website aims to lead you through the logical steps in seeking help for mood disorders, such as depression and bipolar disorder, and to provide you with information, resources and assessment tools.

www.crrmh.com.au The Centre for Rural & Remote Mental Health (CRRMH) provides leadership in rural and remote mental-health research, working closely with rural communities and partners to provide evidence-based service design, delivery and education.

Glove Box Guide to Mental Health

The *Glove Box Guide to Mental Health* includes stories, tips, and information about services to help connect rural communities and encourage conversations about mental health. Available online from CRRMH.



www.rrmh.com.au Rural & Remote Mental Health run workshops and training through its Rural Minds program, which is designed to raise mental health awareness and confidence, grow understanding and ensure information is embedded into agricultural and farming communities.

www.cores.org.au CORES™ (Community Response to Eliminating Suicide) is a community-based program that educates members of a local community on how to intervene when they encounter a person they believe may be suicidal.

www.headsup.org.au Heads Up is all about giving individuals and businesses tools to create more mentally healthy workplaces. Heads Up provides a wide range of resources, information and advice for individuals and organisations – designed to offer simple, practical and, importantly, achievable guidance. You can also create an action plan that is tailored for your business.

www.farmerhealth.org.au The National Centre for Farmer Health provides leadership to improve the health, wellbeing and safety of farm workers, their families and communities across Australia and serves to increase knowledge transfer between farmers, medical professionals, academics and students.

www.ruralhealth.org.au The National Rural Health Alliance produces a range of communication materials, including fact sheets and infographics, media releases and its flagship magazine *Partyline*.





LIVE AND ONLINE

GROUNDCOVER™

New GroundCover stories are available daily at GroundCover online.

Stories include seasonally and regionally relevant information on topics ranging from advances in plant breeding and biotechnology, new varieties and agronomic best practice, through to harvest and on-farm grain storage.

Visit www.groundcover.grdc.com.au for the latest stories.



To subscribe to receive the bi-monthly printed magazine and keep your details up-to-date visit the GRDC subscription centre www.grdc.com.au/subscribe



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THE 2017-2020 GRDC NORTHERN REGIONAL PANEL

JANUARY 2020

CHAIR - JOHN MINOGUE



John Minogue runs a mixed broadacre farming business and an agricultural consultancy, Agriculture and General Consulting, at Barmedman in south-west NSW. John is chair of the district council of the NSW Farmers' Association, sits on the grains committee of NSW Farmers' Assn and is a winner of the Central West Conservation Farmer of the Year award. His vast agricultural experience in central west NSW has given him a valuable insight into the long-term grains industry challenges.

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DEPUTY CHAIR - ARTHUR GEARON



Arthur is a grain, cotton and beef producer near Chinchilla, Queensland. He has a business degree from the Queensland University of Technology in international business and management and has completed the Australian Institute of Company Directors course. He is a previous vice-president of AgForce Grains and has an extensive industry network throughout Queensland. Arthur believes technology and the ability to apply it across industry will be the key driver for economic growth in the grains industry.

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ROGER BOLTE



Roger Bolte is a fourth-generation farmer from the West Wyalong area in NSW, operating a 6500 ha winter cropping program with his wife and family focusing on cereals, legumes and hay. During his 35-years in the industry, Roger has been involved in R&D in various capacities and has had the opportunity to travel abroad and observe a variety of farming systems. He believes that R&D and education are the cornerstones of the industry and feels privileged to be afforded the opportunity to share his experiences.

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ROY HAMILTON



Roy Hamilton operates Riverina with his wife Leanne, son Sandy and daughter-in-law Sara. He was an early adopter of minimum till practices and direct drill and press wheel technology and is currently running CTF on 12m 3-1. The majority of the property (80%) is cropped with wheat, canola, barley, triticale, faba beans while the remainder under pasture runs 1,400 ewes and trade lambs. He has held roles on the south east NSW Regional Advisory Committee, the GRDC's southern region Regional Cropping Solutions Network and was a founding committee member of the Riverine Plains farming systems group.

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DR TONY HAMILTON



Tony is an agricultural consultant. He was a farmer in the Forbes region for 30 years. He is a director of the Rural Industries Research and Development Corporation. He has worked as an agricultural consultant in WA and southern NSW. With a Bachelor of Agricultural Science and a PhD in agronomy, Tony advocates agricultural RD&E and evidence based agriculture.

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ANDREW MCFADYEN



Andrew is a grower and private agricultural consultant near Lake Cargelligo NSW with more than 21 years agronomy and practical farm management experience. He is an active member of the grains industry with former roles on the Central East Research Advisory Committee, NSW Farmers Coolah branch and has served on the GRDC northern panel since 2015. He is also a board member and the chair of Grain Orana Alliance.

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PETER MCKENZIE



Peter operates a private agronomy consulting business based in Quirindi NSW. Prior to this he was facilitator/agronomist for AgVance Farming group, a communications conduit between industry and growers. He is a passionate supporter of research and has been active in extending weed management research information to industry, particularly in central west NSW, is a former director of Conservation Farmers Inc., a former member of the North East Regional Advisory Committee and a participant in Northern Growers Alliance local research group on the Liverpool Plains.

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GRAHAM SPACKMAN



Graham has conducted a private agricultural consultancy at Emerald, Queensland, for the past 30 years which provides agronomy and farm business management advice in summer and winter, dryland and irrigated crops in grain and mixed grain/grazing farming systems in the region. He has participated in two decades of GRDC and Qld DPI funded farming systems research, development and extension projects, particularly in the areas of weed management, soil fertility and adaption of agronomy practices in CQ climate and farming systems.

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BRUCE WATSON



Bruce and his family operate a 3400 ha family grain growing business near Parkes NSW, which produces a mixture of dryland winter cereals, pulses and oilseeds as well as summer dryland cereals, pulses and cotton grown on a 12m zero till CTF platform with full stubble retention. Bruce holds a Bachelor of Agricultural Economics from the University of Sydney and previously worked with PricewaterhouseCoopers in its Transfer Pricing practice. He is an active member of the grains industry and was awarded a Nuffield Scholarship in 2009. Bruce is interested in both transformational or blue sky research and continues to ensure that existing research delivers profitability to grower's businesses.

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DR JO WHITE



Dr Jo White is an experienced researcher with over 15 years' experience in agricultural research programs based at the Department of Agriculture and Fisheries in Queensland (DAFQ) and the University of Southern Queensland (USQ), including 10 years' experience in the field of plant pathology of broad acre summer crops. Jo has a keen interest in developing and delivering on-ground practical research solutions to growers which improve productivity and profitability of their farms and is now working as a private consultant based in Queensland.

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Dr Steve Jefferies, GRDC Managing Director and/or Dr Ken Young, GRDC Acting General Manager - Applied Research & Development

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TOP 10 TIPS

FOR REDUCING SPRAY DRIFT

01

Choose all products in the tank mix carefully, which includes the choice of active ingredient, the formulation type and the adjuvant used.

02

Understand how product uptake and translocation may impact on coverage requirements for the target. Read the label and technical literature for guidance on spray quality, buffer (no-spray) zones and wind speed requirements.

03

Select the coarsest spray quality that will provide an acceptable level of control. Be prepared to increase application volumes when coarser spray qualities are used, or when the delta T value approaches 10 to 12. Use water-sensitive paper and the Snapcard app to assess the impact of coarser spray qualities on coverage at the target.

04

Always expect that surface temperature inversions will form later in the day, as sunset approaches, and that they are likely to persist overnight and beyond sunrise on many occasions. If the spray operator cannot determine that an inversion is not present, spraying should NOT occur.

05

Use weather forecasting information to plan the application. BoM meteograms and forecasting websites can provide information on likely wind speed and direction for 5 to 7 days in advance of the intended day of spraying. Indications of the likely presence of a hazardous surface inversion include: variation between maximum and minimum daily temperatures are greater than 5°C, delta T values are below 2 and low overnight wind speeds (less than 11km/h).

06

Only start spraying after the sun has risen more than 20 degrees above the horizon and the wind speed has been above 4 to 5km/h for more than 20 to 30 minutes, with a clear direction that is away from adjacent sensitive areas.

07

Higher booms increase drift. Set the boom height to achieve double overlap of the spray pattern, with a 110-degree nozzle using a 50cm nozzle spacing (this is 50cm above the top of the stubble or crop canopy). Boom height and stability are critical. Use height control systems for wider booms or reduce the spraying speed to maintain boom height. An increase in boom height from 50 to 70cm above the target can increase drift fourfold.

08

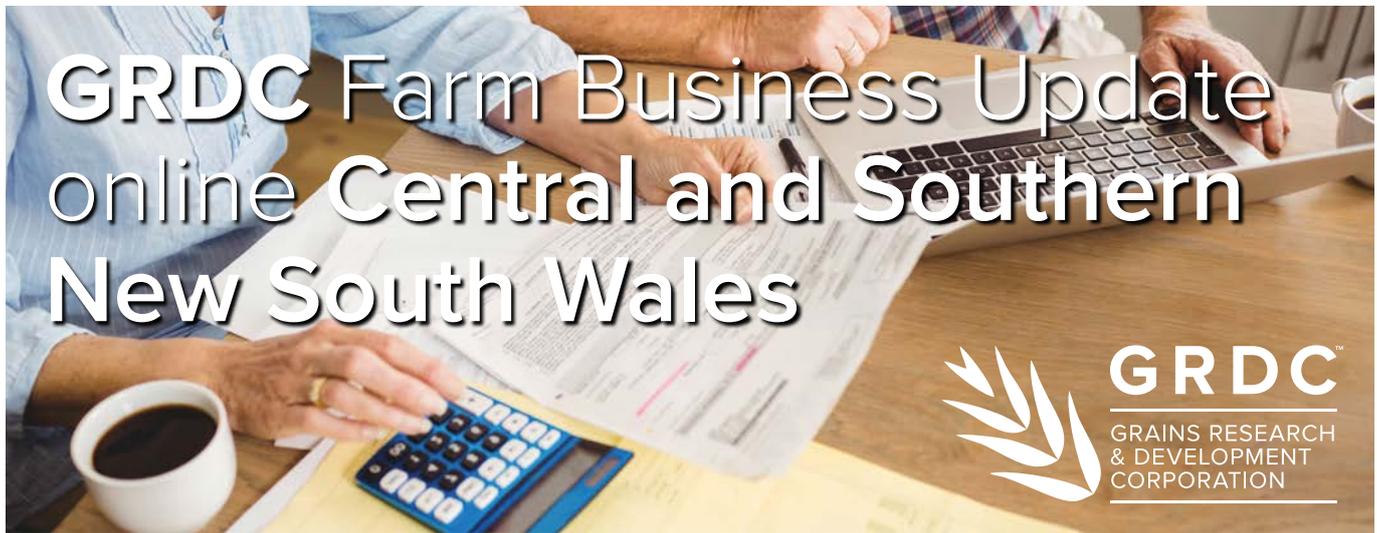
Avoid high spraying speeds, particularly when ground cover is minimal. Spraying speeds more than 16 to 18km/h with trailing rigs and more than 20 to 22km/h with self-propelled sprayers greatly increase losses due to effects at the nozzle and the aerodynamics of the machine.

09

Be prepared to leave unsprayed buffers when the label requires, or when the wind direction is towards sensitive areas. Always refer to the spray drift restraints on the product label.

10

Continually monitor the conditions at the site of application. Where wind direction is a concern move operations to another paddock. Always stop spraying if the weather conditions become unfavourable. Always record the date, start and finish times, wind direction and speed, temperature and relative humidity, product(s) and rate(s), nozzle details and spray system pressure for every tank load. Plus any additional record keeping requirements according to the label.



Acknowledgements

The ORM team would like to thank those who have contributed to the successful staging of the Central and Southern New South Wales GRDC Farm Business Update online:

- The local GRDC Farm Business Update planning committee including both government and private consultants and GRDC representatives.

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