

GRDC Pre-Seeding Frost Workshops 2015 - Final Report (TAR00004)

Introduction

Frost has a devastating impact on grain production in the Central and Southern grain belt of Western Australia. It has been estimated that frost cost WA growers \$200 million from lost production in 2012. In the last decade there have been significant damaging frosts in 2005, 2008, 2010 and 2012. The extension activities during this period were mostly reactionary after damaging events.

ConsultAg coordinated a series GRDC Pre-seeding Frost Workshops in 2014 and again in 2015 (please see attached PDF MAP of locations for workshops). These workshops were designed to be pro-active and encourage growers to implement their frost minimization strategies during seeding. Seeding decisions (sowing date, crop species choice, variety choice and input levels) are the main management tools available for growers to manage their frost risk. Once crops are sown there is very little growers can do to influence their exposure to frost.

These workshops were held between the 18th and 24th of March, at a time when growers were undertaking preparations and planning for seeding.

While this workshop will in no way prevent all the damage in a severe frost event it has empowered growers and helped them develop an understanding of their risk and provide options and strategies to reduce their financial exposure to frost events.

Objectives:

The aim of the workshops were to provide growers with:

- An update on the latest frost research and a review of previous research.
- Best bet management tools before seeding in 2015.
- An opportunity to provide feedback to GRDC on your priorities for future frost research.

Workshop Locations

The workshops were held in the Albany, Kwinana East and Kwinana West port zones. Where possible the workshops were held in association with a grower group, or a local agribusiness host.

Locations of the 6 workshops and hosting grower groups:

- 1) York (Hosted by Living Farm)
- 2) Cunderdin (Hosted by WANTFA)
- 3) Bencubbin (Hosted by Local grower network)
- 4) Merredin (Hosted by Madfig grower group)
- 5) Borden (Hosted by Stirlings to Cost Farmers)
- 6) Tambellup (Hosted by Landmark Tambellup)

By co-hosting the workshops with leading grower groups we were able to add value to the groups activities and the groups helped with promotion and attendance at the workshops.

Methodology

Personnel

The key presenters at the workshops were **Ben Biddulph** (DAFWA), **Garren Knell** (ConsultAg), **Glenn Cook** (BOM), **Ian Foster** (DAFWA), **Rebecca Jenkinson** (Living Farms) and **Steve Curtin** (ConsultAg), **Doug Abrecht** (DAFWA), **Bryan Boroff**, **Nic Callow** and **Ken Flower** (UWA). These presenters are all excellent communicators and have undertaken significant research into frost over the past 10 years in WA.

Kwinana East port Zone

The program had a strong focus on the trade off between delaying sowing, terminal drought and frost risk. This was heavily debated at both workshops. This led to lots of farming system discussion. It was especially topical given the large amount of subsoil moisture that these areas had at the time.

Albany Port Zone

The workshops in the Albany port zone as well as York and Cunderdin had additional presentations focusing on remote sensing. This topic was presented by Bryan Boroff and Nic Callow from UWA where they discussed their current project and what they hope to be able to achieve.

General Outline of Frost Workshop

1. Welcome and overview of the GRDC Frost Initiative – **Bob Belford** (GRDC)
2. The Scene “How to Frost a Wheat Crop” - **Garren Knell** (ConsultAg)
3. The Changing Nature of Frost Risk in Southern Australia.- **Glenn Cook** (BOM)
4. Screening for frost and future genetic solutions - **Ben Biddulph** (DAFWA)
5. The Dilemma - Dry seeding, wet seeding and delaying sowing – trade-offs
between frost and terminal drought in the Eastern Wheatbelt – **Doug Abrecht** (DAFWA)
7. Interactions of stubble and frost. – **Rebecca Jenkins** (Living Farms)
8. Grazing crops to delay flowering and reduce frost risk and the role copper may play in minimizing frost damage - **Steve Curtin** (ConsultAg)
9. Remote Sensing frost damage – **Bryan Boroff or Nik Callow** (UWA)
10. Frost Management: 10 things you can do. Take home messages. **Garren Knell** (ConsultAg)

Results

Attendance: Overall the workshops were well attended by growers and industry. They were very interactive with strong grower engagement. This was especially pleasing given WA has had minimal frost damage in the last 2 seasons.

	Growers	Industry	Total
York	15	3	18
Cunderdin	16	3	19
Bencubbin	19	1	19
Merredin	18	7	25
Borden	10	2	12
Tambellup	19	2	21
	97	18	114

Discussion of Results

Outcomes for WA grain industry.

It has been estimated that frost cost WA growers \$200 million from lost production in 2012. While this workshop will in no way prevent all the damage in a severe frost event it has empowered growers and helped them develop an understanding of their risk and provide options and strategies to reduce their financial exposure to frost events.

The hidden cost of frost is the opportunity cost of trying to avoid frost through time of sowing, rotation choice and variety selection. This was addressed in the workshop.

This project adds value to GRDC's previous investment in frost research by re-extending this data along with recent research findings.

Over the 6 workshops we managed to present to 114 delegates. The attendees included 97 growers and 18 industry representatives.

While some of the workshops were a little light on for numbers, they all had a very positive vibe with plenty of interaction and interest from the growers. In 2014 the workshops targeted the frost hot spots (Lake Grace, Yealering, Nyabing etc) in 2015 the workshops were aimed at filling in the gaps from 2014 and were located on the margins of the frost prone areas (see map attached).

Overall I am very happy with the attendance and I know that all growers who attended have gone home knowing a lot more about frost and management strategies.

These workshops assisted growers to identify and manage their frost risk with current best practice strategies. This will buy time for growers while waiting for new research outcomes to assist with frost management.

Bringing the Frost Researchers Together

The frost workshops created a great opportunity for all of the frost researchers in WA to get together and work through lots of the frost issues and learn from each other. Getting together over the 2 week period has boosted links between the researchers and will result in greater collaboration in the future.

Industry Knows GRDC's Emphasis on Frost Research

Through the media coverage and the frost workshops it has now been widely publicised that GRDC is now investing heavily in frost research to develop solutions for growers. This project had extensive media coverage and promotion through grower groups and local press.

Overall the workshops were very successful in bring key frost researchers together and providing timely information to growers that has led to practice change and growers and industry having a greater understanding of frost management and the associated risks.

Appendices

There were numerous radio interviews and press releases conducted in order to promote the workshops and to encourage growers to consider their frost risk when undertaking planning for seeding.

ABC – Rural morning radio 10/3/15 – Garren Knell

ABC country hour 11/3/15 – Garren Knell

Radio West – Rural 12/3/15 – Garren Knell

ABC radio interview 9/3/15 – Susan Hall.

GRDC podcast radio – Interviewed 12/3/15 Garren Knell

GRDC grains flash – Natali lee – attached.

Countryman article following the Cunderdin workshop by Jo Fulwood.

Growers who attended the workshops were provided with:

- Managing Frost Risk Booklet
- Ground Cover Supplement – Turning Up the Heat on Frost
- Frost Back Pocket Guide – Cereals
- Frost Back Pocket Guide – Pulse and Oilseeds
- 10 Tips for frost management hand out (Attached)
- Guide to monitoring temperature on your farm (Attached)

York Workshop – With Ben Biddulph and Rebecca Jenkinson presenting



Cunderdin Workshop – Doug Albrecht presenting



Bencubbin – Glenn Cook presenting



*After a Big day of frost talking there is nothing like an **ICE COLD BEER***



Borden Seminar – Garren Knell Presenting



Tambellup Seminar - Bryan Boroff presenting and G Knell leading discussions.



Ben Biddulph and Stu Whitham chatting to local grower after the workshop.



Plain English Summary

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TAR00004

Objectives

To provide growers with an update on the latest frost research and a review of previous research to provide growers with the best bet management tools before seeding in 2015

Background

GRDC Pre-Seeding Frost Workshops

Frost has a devastating impact on grain production in the Central and Southern grain belt of Western Australia. It has been estimated that frost cost WA growers \$200 million from lost production in 2012. In the last decade there have been significant damaging frosts in 2005, 2008, 2010 and 2012. The extension activities during this period were mostly reactionary after damaging events.

ConsultAg coordinated a series GRDC Pre-seeding Frost Workshops in 2014 and again in 2015 to cover the frost prone areas of southern WA. These workshops were designed to be pro-active and encourage growers to implement their frost minimization strategies during seeding.

The workshops were held between the 18th and 24th of March, at a time when growers were undertaking preparations and planning for seeding.

The workshops were held in the Albany, Kwinana East and Kwinana West port zones. Where possible the workshops were held in association with a grower group, or agribusiness host. The 2015 workshops were held at York, Cunderdin, Bencubbin, Merredin, Borden and Tambellup.

Research

General Outline of Frost Workshop

- Welcome and overview of the GRDC Frost Initiative – **Bob Belford** (GRDC)
- The Scene “How to Frost a Wheat Crop” - **Garren Knell** (ConsultAg)
- The Changing Nature of Frost Risk in Southern Australia.- **Glenn Cook** (BOM)
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- Grazing crops to delay flowering and reduce frost risk and the role copper may play in minimizing frost damage - **Steve Curtin** (ConsultAg)
- Remote Sensing frost damage – **Bryan Boroff or Nik Callow** (UWA)
- Frost Management: The key take home messages. **Garren Knell** (ConsultAg)

Attendance

Overall the workshops were well received by growers and industry with 97 growers and 18 industry attendees. They were very interactive with strong grower engagement. This was especially pleasing given WA has had minimal frost damage in the last 2 seasons.

Outcomes

Outcomes for WA grain industry.

It has been estimated that frost cost WA growers \$200 million from lost production in 2012. While this workshop will in no way prevent all the damage in a severe frost event it has empower growers and helped them develop an understanding of their risk and provide options and strategies to reduce their financial exposure to frost events.

The hidden cost of frost is the opportunity cost of trying to avoid frost through time of sowing, rotation choice and variety selection. This was addressed in the workshop.

This project adds value to GRDC’s previous investment in frost research by re-extending this data along with recent research findings.

Bringing the Frost Researchers Together

The frost workshops created a great opportunity for all of the frost researchers in WA to get together and work through lots of the frost issues and learn from each other. Getting together over the 2 week period has boosted links between the researchers and will result in greater collaboration in the future.

Implications

Overall the workshops were very successful in providing timely information to growers that has led

Publications

to practice change and growers and industry having a greater understanding of frost management and the associated risks.

While this workshop will in no way prevent all the damage in a severe frost event it has empowered growers and helped them develop an understanding of their risk and provide options and strategies to reduce their financial exposure to frost events.

No publications were produced for these workshops however there were numerous radio interviews and press releases about the workshops and the key take home messages for growers.

Growers who attended the workshops were provided with the following handouts (10 Tips for Frost Management, Guide to monitoring temperature on your farm, Managing Frost Risk Booklet, Ground Cover Supplement – Turning Up the Heat on Frost, Frost Back Pocket Guide – Cereals, Frost Back Pocket Guide – Pulse and Oilseeds.