

Liebe Group Report on Spring Field Day and associated field walks

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**Report to GRDC as part of the 'Improved stubble and soil management
practices for sustainable farming systems in the Liebe area' project**

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Introduction

The purpose of this report is to:

- Evaluate the presentations associated with the 2011 Liebe Group Spring Field Day, particularly those associated with the 'Improved stubble and soil management practices for sustainable farming systems project'.
- Present the findings of the Fertiliser Survey conducted at the Field Day.
- Document the Field walk 'Soil Pit for Profit at Keith Carters, East of Wubin on 6th October 2011.

Soil health forum

On 15th of September a soil health forum, attended by 250 people, was held in conjunction with the Liebe Spring field Day, East of Coorow. The soil health forum was aimed at increasing growers and agribusiness knowledge regarding soil structure, soil amelioration and soil moisture in milestone 7 of the GRDC project.

The presentations which were part of the forum are listed in Table 1.

Table 1: Outline of presentations etc.

Title	Description	Presenter
Understanding the chemistry and physics of spading & deep ripping	Soil pit demonstration of the effects of different soil amelioration techniques	Dr. Stephen Davies, DAFWA*
Interpreting soil profiles, Root Development and Crop water use	Soil pit demonstration	Prof. Bob Gilkes, UWA
The Economics of ameliorating Acidic Subsoils	After analysis data from 10 years of Liebe trials the economics of liming has been established and an economic calculator established.	Rob Sands, Farmanco
Impact of stubble management and fallow on stored soil water	Understanding how different management practices (eg. Fallowing affect soil water storage in Liebe soils.	Dr. Yvette Oliver, CSIRO
Dry Seeding: Risks and opportunities	Evaluation of the trade-off's between dry seeding and faster seeding. How do we manage	Dr. Michael Robertson

	variable seasonal breaks?	
How to get more bang for your fertiliser buck	Panel discussion between researchers, agronomists, the fertiliser company and farmers	Rob Sands Yvette Oliver Luke Dawson Rob Birch Mike Dodd Craig Scanlan

* Presentation not evaluated

Conduct of evaluations

Evaluation questions were asked of the audience using Turning Point® key pad technology immediately after the speaker had finished presenting the session. The format of the field day is such that up to 5 sessions can be running simultaneously and some of the presentations listed in table 1 where run twice. In situations where the presentation was run twice, the evaluation was only conducted on one audience. The audience was asked to answer the questions using a 5 point Likert scale, That is indicate whether they strongly agree, agree, neural, disagree or strongly disagree to the following question.

1. The information presented at this session has increased my knowledge
2. The information presented at this session is relevant to my farm business
3. I am interested in learning more about the topic presented

Questions were verbally asked to the audience with the aid of a slideshow. Each audience member was given digital key pad which has been preset to correspond with the Likert scale.

Results

Interpreting soil profiles, Root Development and Crop water use

Presented by Professor Bob Gilkes, UWA

The soil pit presentation by professor Bob Gilkes was well attended and topics discussed were considered relevant to the farm business by 94% of those surveyed; 87 % of growers strongly agree or agree that they had increased their knowledge of soil profiles by attending the session (Figure 1) and 81% were interested in learning more about soil profiles.

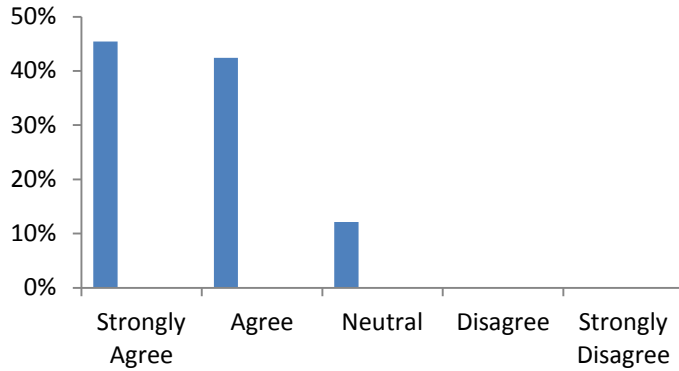


Figure 1: Percentage of growers whose knowledge of soil profiles, root development and crop water use has increased as a result of the presentation.

The Economics of ameliorating Acidic Subsoils

Presented by Rob Sands, Farmanco

This indoor presentation used Liebe group trial data to demonstrate that liming soil is a good economic decision. The presentation was popular with growers, with 97% agreeing or strongly agreeing that the information presented was relevant to the farm business (Figure 2) and 85% indicating that their knowledge of subsoil acidity had increased as a result of attending this presentation.

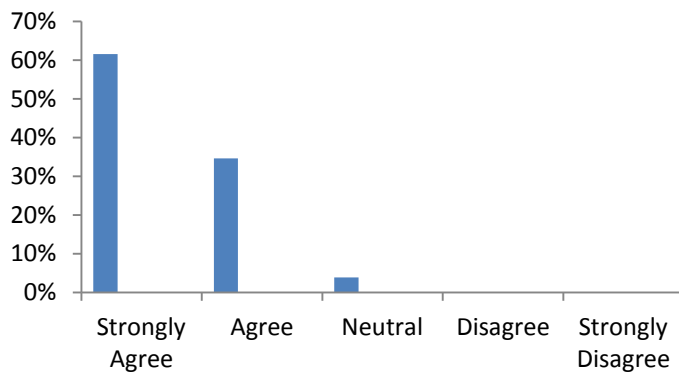


Figure 2: Percentage of grower who felt that information presented by Rob Sands on economics of liming (September 2011) was relevant to their farm business.

Impact of stubble management and fallow on stored soil water

Presentation by Dr Yvette Oliver, CSIRO

This marquee presentation reported on initial results from Liebe group trials investigating soil moisture conservation and stubble management, with 83% of growers reporting they are interested in learning more about this topic (Figure 3) and 78% of growers believing the information is relevant

to their farm business. This is positive feedback that indicated the research the Liebe group is conducting is relevant to our growers and important to achieving sustainable farming systems in the Liebe area.

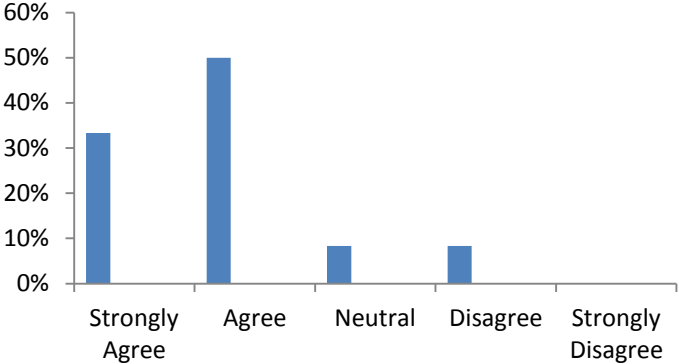


Figure 3: Percentage of growers who were interested in learning more about stubble management, fallow and stored soil moisture.

Dry Seeding: Risks and opportunities

Presented by Dr Michael Robertson, CSIRO

This presentation looked at the risks and opportunities of dry seeding as seen by grower case studies in the northern wheatbelt and supported by CSIRO modelling, with 88% of the growers surveyed indicated that information about dry sowing is relevant to their farm business and 82% are interested in learning more.

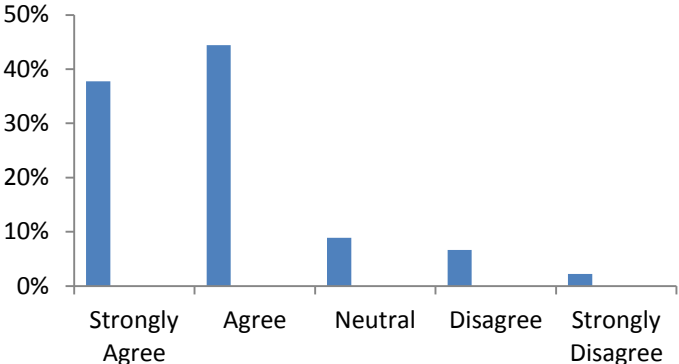


Figure 4: Percentage of growers who are interested in learning more about the risks and opportunities of dry sowing.

Discussion

Out of the four presentations evaluated at Spring Field Day the topic in which growers felt their knowledge increased the most was *Interpreting soil profiles, root development and crop water use* by professor Bob Gilkes with 87% of growers strongly agreed or agreed to the statement “Information presented at this session has increased my knowledge”. No growers selected disagree or strongly disagree. Robs Sands presentation on the economics of applying lime said to increase their knowledge by 85% of growers. All four presentations were well received and increased grower knowledge which indicated the Liebe group is meeting the objectives of the GRDC project LIE00006 *‘Improved stubble and soil management for sustainable farming systems in the Liebe area’*.

All four presentations were considered relevant to the farm business by over 78% of growers, this is an excellent outcome considering the wide variety of farming enterprises in the Liebe area. The two most relevant topics were economics of subsoil acidity and interpreting soil profiles with 97% and 94% of growers selecting strongly agree or agree when asked if the information presented was relevant to their farm business.

Over 80% of growers were interested in learning more about all the topics presented, which is an excellent indication that the Liebe Group is providing relevant information. The topic in which growers are most interested in learning about was the economics of subsoil acidity with 89% of growers selecting either agree or strongly agree. As a result of the positive feedback the Liebe group will continue to provide information regarding soil health, dry seeding, stubble management and soil moisture to growers through our various extension activities.

All sessions were well attended and the presenters were of a high quality. All those attending the forum got a Spring Field Day booklet and Frame works for forward farming #3 case study book to take home.

The positive feedback indicates that the GRDC funded project “Improved stubble and soil management practices for sustainable farming systems in the Liebe area’ is well targeting and on track to meets the project objectives.

Results from the Spring Field Day fertiliser survey

Purpose and conduct of survey

This year’s spring field day featured, for the 1st time, an interactive discussion in which agronomists, researchers and growers tried to determine how we can get more bang for our fertiliser buck. Prior to the panel discussion growers in the audience were asked a few questions about their fertiliser use and how they make fertiliser decisions. Sixty growers responded using the electronic keypads to poll the responses. The results from the survey are outlined below.

Soil testing

Most (79%) growers at the Spring Field day will re - soil test a paddock within 4 years. Subsurface soil testing is being conducted, mainly to between 10-25cm.

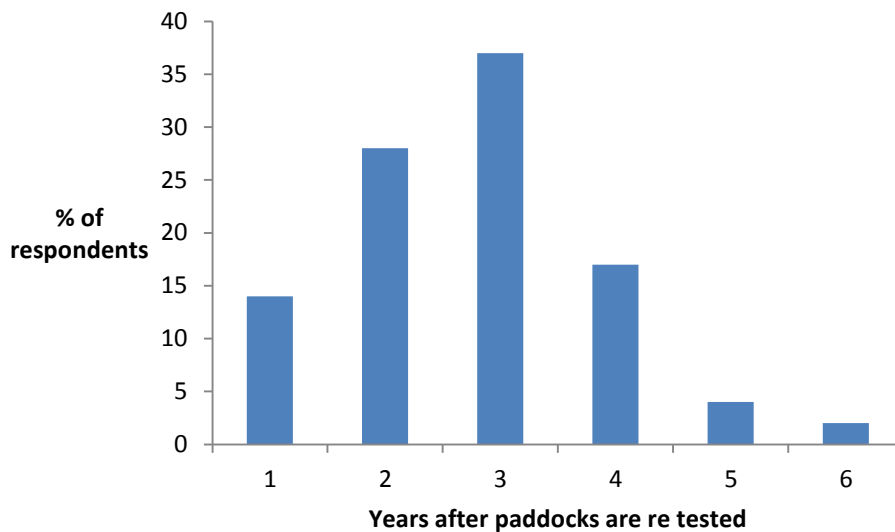


Figure 5: Timeframe for re soil testing paddocks of farmers attending Liebe group Spring Field day 2011.

Variable rate technology

Variable rate technology (VRT) is used to apply fertiliser by 41% of field day attendees, however only 15% of growers who use VTR have a fully automatic system, the other 26% change fertiliser rate manually and 59% do not use VRT to apply fertiliser.

Making fertiliser decisions

Most growers surveyed (85%) will 'play the season' in regards to nitrogen fertiliser applications. That means rather than putting the required amount of nitrogen on at seeding they will apply some nitrogen as the crop develops according to their expectations of yield, protein targets and what the weather will do.

When deciding on fertiliser rates for seeding majority of growers get advice either from an independent consultant (40%) or a company agronomist (36%) (Table 2). When it comes to post seeding nitrogen applications the number of growers not seeking advice increases from 23% prior to seeding, to 36% post seeding. The use of independent consultants remains about the same whereas the use of company agronomists falls from 36% prior to seeding to 18% for post seeding decisions.

Table 2: Sources of advice regarding fertiliser decisions for growers attending the Liebe group Spring field day 2011.

Question	Don't seek advice (%)	Independent consultant (%)	Company agronomist (%)	Other (%)
Who provides you with advice on fertiliser rates at seeding?	23	40	36	2
Who provides you with advice on fertiliser rates post seeding ?	36	42	18	4

The most commonly used computer-based tool growers use to help with fertiliser decisions is the software promoted by the fertiliser companies (e.g. NuLogic) with 46% of field day attendees using this method (Figure 1). Software used by private consultants was used by 22% of growers whereas yield prophet® and models created by the Department of Agriculture and Food were not widely used (6% and 0% respectively).

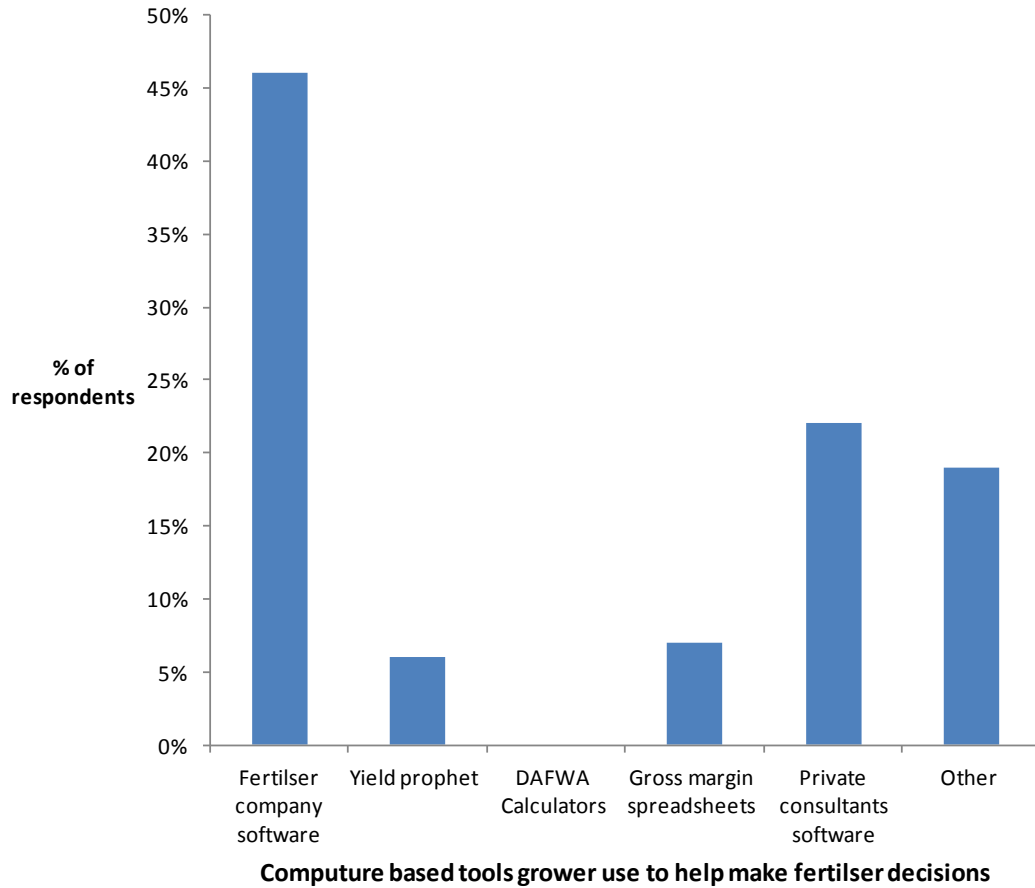


Figure 6: The usage of different computer based tools that growers have access to, as a percent of growers at the 2011 Liebe group spring field day.

Discussion

Independent consultants are the primary source of advice for Liebe growers when it comes to making fertiliser decisions however 36% of growers do not seek advice for post seeding applications. Fertiliser company software is the predominant decision based tool for helping growers, yield prophet and DAFWA calculators are rarely used. According to this information the Liebe group should target consultants and fertiliser companies when working on decision support tools or delivering extension messages, as well as providing information directly to the farmers.

The information gathered from this survey will be used by the Liebe group and its partners to conduct relevant trial and workshop activities and determine how we get more bang for our fertiliser buck. Thanks to all the growers who participated, Michael Robertson for chairing the season and the panel members. Mike Dodd, Rod Birch, Rob Sands, Yvette Oliver, Luke Dawson and Craig Scanlan.

Soil Pit for Prophet at Keith Carters, East of Wubin – Field walk 6th of October 2011

Purpose and conduct of the day

The purpose of this extension activity was to increase grower knowledge of the biological, chemical and physical aspects of soils in our area and how that relates to the farming system.

While not an official milestone of the project the field walk will contribute to achieving Outcomes from GRDC project and achieved Objectives 1,9,13 in our communication plan.

- To increase Liebe growers and researcher of the implications of stubble management on soil water
- To provide information that contributes to informed Liebe grower decision making leading to effective adoption of soil amelioration practices.

The activity was primarily funded by DAFF as a milestone for a project entitled 'Increasing Water use Efficiency and optimising input costs for sustainable, profitable farms in a changing climate'.

This half day activity was attended by 40 growers who visited three large soil pits on three different soil types. At each soil type, soils consultant Adriaan de Waal lead an interactive discussion about the soils physical and chemical properties, its ability to hold water and how these factors impact on plant growth and farm input costs. Mr de Waal has been the consultant for this property for some years and has a good knowledge of the soil types presented. Growers responded well to his clear and concise explanations which included analogies to Ferrari's and whiskey.

Throughout the year Liebe members have been receiving Yield Prophet® reports for the two paddocks visited. At the field walk agronomist Dave Cameron spoke to growers about the soil/plant interaction being modelling and explored ways in which Yield Prophet® can be used as a learning and prediction tool. After the presentations were completed the networking and exchange of ideas continued with a BBQ.

Evaluation

Numbers: 35 growers (2 non members), 5 industry people.

Numbers were better than expected and feedback was extremely positive. No formal evaluation was conducted but comments included.

"A lot of experienced farmers here which means the topics must be relevant and a new perspective".

"Really enjoy learning about this sort of stuff"

"Great to hear Adriann De Waal speak as he is a new speaker to Liebe events".

And from a grower who was unable to attend "I heard a lot of great feedback and was disappointed to have missed it, I was considering driving back from Perth just to attend".

Appendix

Table 3: Grower response to presentation by Proff Bob Gilkes on Interpreting soil profiles, root development and crop water use at Liebe Group Spring field Day 2011.

Question	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
The information presented at this session has increased my knowledge of this topic. n=33	45	42	12	0	0
The information presented at this session is relevant to my farm business. n=33	52	42	6	0	0
I am interested in learning more about the topic presented. n=33	36	45	15	3	0

Table 4: Growers perceptions as percentage of a economics of liming presentation by Rob Sands at 2011 Liebe Group spring Field Day

Question	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
The information presented at this session has increased my knowledge of subsoil acidity. n=27	41	44	11	4	0
The information presented at this session is relevant to my farm business. n=26	62	35	4	0	0
I am interested in learning more about the topic presented. n=27	37	52	7	4	0

Table 5: Growers responses to Spring Field day presentation of current data from Liebe Group trials on effect of stubble management on soil water and crop growth as presented by Dr Yvette Oliver, CSIRO

Question	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
The information presented at this session has increased my knowledge of this topic. n=24	13	54	29	4	0
The information presented at this session is relevant to my farm business. n=23	48	30	17	0	4
I am interested in learning more about the topic presented. n=24	33	50	8	8	0

Table 6: Grower response to Spring Field day presentation on the risks and opportunities of dry Seeding, presented by Dr Michael Robertson, CSIRO

Question	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
The information presented at this session has increased my knowledge of dry seeding. n=47	19	47	30	4	0
The information presented at this session is relevant to my farm business. n=40	35	53	10	3	0
I am interested in learning more about the topic presented. n=45	38	44	9	7	2