

GRDC's Regional Cropping Solutions Network (RCSN) held three 'Summer Sesh' events during January 2020. The meetings were held at Jurien Bay Hotel (13th January at 5pm with 19 attendees); Broadwater Stilts Restaurant (15th January at 5pm with 65 attendees) and Due South, Albany (20th January at 5pm with 46 attendees). Online GroupMap technology was used to capture audience input. A key part of these events was the opportunity for participants to share the top issues affecting their profitability. The opportunities and constraints from these events were collated and included for discussion at the various RCSN member meetings held during February 2020.

GRDC's Albany port zone RCSN held their member meeting on 5th and 6th February at Motel Le Grande in Albany as a combined group with Esperance port zone RCSN members. Prior to their meeting, both RCSN groups visited Scott and Alaina Smith's farm at Kojaneerup to look at how the Smiths were managing snails as well as visiting their clay spreading operations to manage non-wetting sands. The group also visited Josh and Shannon Goad who are claying and deep ripping contractors.

All 12 of the Albany port zone RCSN members attended their member meeting including: Trent Parsons, Ben Ball, Mark Lawrence, Mark Sullivan, Kirsty Smith, Peter Bostock, Tim Mathwin, Glenn Ball, Jarrod King, Ben Webb, Kelly James and Scott Smith. Andy Duncan and Gemma Walker (Western Panel); Lizzie Von Perger and Curtis Liebeck (GRDC Grower relations – West); Julianne Hill, RCSN coordinator and RCSN support Cindy Power and Helen Ablett were also in attendance. An update on soils constraints work with outcomes from current work was provided for discussion with a Deep Dive Gap analysis on amelioration of variable soil types conducted. An NVT update was also given by Albany port zone NVT representatives Kirsty Smith and Trent Parsons.

All RCSN members were asked to bring ideas from five farmers/advisors from their area, and to consider these ideas along with ideas raised from the Summer Sesh events. They were then asked WHAT WILL HELP GROWERS? Consideration was given to area, frequency and impact on profit of the issue or idea and ideas ranked accordingly. These ideas/issues were further discussed: Does this issue still need some work done or has it been fully addressed with past or current R, D or E? ie there is a Research, development or extension gap still. Are they still an issue? Has enough been done on them?

RCSN members then further discussed and expanded on those top issues that need further investment, choosing two to further develop using a MAKAT framework: Matching yield potential in the high rainfall zone (HRZ) to improve wheat and canola yields; and development and adoption of image analysis with integrated harvesting equipment.

Table 1: Summary of areas of interest raised at Summer Sesh events or by RCSN members

Areas of interest raised at Albany port zone Summer Sesh events and by RCSN members	Expanded areas of interest	RCSN member feedback from RCSN member meeting and further action
A reliable 'safe every year' profitable legume.	Lupins too long, peas frost prone. Growers need more options. Better break crops and legumes for: weed control, some disease in LRF zone, crop sequencing options are important, harvestability needs to be addresses, rhizobium inoculum for LRF zone, more robust bugs?	Noted as a very high ranking issue by RCSN members at their member meeting, however the RCSN did not further develop this issue at this time as there is current large GRDC investment occurring in this space
Ripping and soil amelioration.	Need improved definition re responses or not from soil amelioration - case study of non-responsive outcomes? Sowing guide post soil amelioration. ie what crop will establish best post deep ripping or plozza ploughing. Deep ripping benefits and longevity. Need an understanding of soil type and prioritising ameliorants, including economics and ROI. Why only 1 to 2 yr ripping response on South coast sands? Deep ripping- as with delving this is a dark art on the highly variable soil types. Only hear about massive yield responses but not the neutral on negative ones.	Noted as a very high ranking issue by RCSN members at their member meeting, however the RCSN did not further develop this issue at this time as there is current large GRDC investment occurring in this space
Non-wetting soils.	Improving germination and establishment in non-wetting soils, magnified by dry sowing and soil amelioration is not always an option., Use of wetter on seed for increasing germination and maybe vigour? Some strong qualitative data coming from company producing wetter. Need independent research to look at supplying quantitative data as well as overcoming problems with actually applying the wetter to seed. Non wetting soils - where	Noted as a very high ranking issue by RCSN members at their member meeting, however the RCSN did not further develop this issue at this time as there is current large GRDC investment occurring in this space

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	should different soil wetters be placed, behind press wheel, below, seed, with seed, etc. The aim would be to allow growers to work out which products would best suit the cropping machinery and or farming system.	
Frost.	Frost - let's not forget this one. Still locally biggest limiting factor at least for the fear factor. Where to with research? Have we achieved significant gains from a big spend?? Temperature/Timing/Crop type interactions.	Noted as a very high ranking issue by RCSN members at their member meeting, however the RCSN did not further develop this issue at this time as there is current large GRDC investment occurring in this space
<i>Image analysis with integrated harvesting equipment</i>	<i>We could use this to look at weeds (in paddock spectrum - resistance), snails, grain quality - staining etc.</i>	Ranked highly by RCSN members at their member meeting. The RCSN identified this as an issue impacting on profitability and further developed some aspects of this issue.
Root lesion nematodes.	Nematodes -already work done but not on break crop interaction. Eastern states work not applicable. Need trial sites where high numbers of known species are introduced then inspect disease x nutrition x TOS x variety. Managing root lesion nematodes - still don't know the resistance/tolerance of all crops to different species - e.g. Faba beans to P. quasitereoides. How to manage if you have more than one species in a paddock. The fact that there are different species and they prefer different hosts needs to be better understood and extended.	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Systems for tracking chemicals	To have an improved and standardised method for tracking batch numbers, chemical types etc more easily and efficiently such as QR codes on chemical drums that can be linked to farm recording software. Push for resellers to tract batches? Who gets what batch?	Outside GRDC scope (we have little impact) but GRDC will keep abreast of this issue and provide input
NVT trials	NVT trials need to be released to growers even if there may have been issues with the trial. Example is Kojonup long season wheat trial. From my understanding not going to be released due to some unintentional grazing?	Noted as a very high ranking issue by RCSN members at their member meeting, with this feedback passed onto the NVT manager. There is current large GRDC investment occurring in this space
<i>Matching yield potential in the HRZ.</i>	<i>Poor wheat yields V barley in the high rainfall zone. Water use efficiency is poor. Other areas (Tas etc) wheat yields better than barley. We NEED wheat in the rotation so we need it to yield better.</i>	Ranked highly by RCSN members at their closed member meeting. The RCSN identified this as an issue impacting on profitability and further developed some aspects of this issue.
Oats breeding in WA	Breeding for what the consumer wants - shorter season varieties.	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Early sowing varieties and agronomy.	Lack of early sowing opportunities through the risk of frost and heat at the end of the year. Flowering time issues, Wheat varieties bred for WA. conditions not just short-mid varieties. Still lag behind the shift to earlier sowing and what the breeders can offer us that is suited to WA conditions. With dry sowing of canola and legumes becoming more common practice, reliance on atrazine and pre-ems is increasing, leading to increased resistance pressure for both pre-ems & post-ems (particularly clethodim).	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.

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Weather forecasting inaccuracy.	Very unreliable in the short (5-21days) and long (6months) term. Still very hit and miss!	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Insecticide resistance	Real concerns with insecticide resistance. work has been done but maybe a revisit is worthwhile in certain areas. Seasonal pressure has seen some bad failures in recent years with a range of insects. Becoming a yearly issue.	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
City/country divide, more effort to promote/educate.	Be proactive when it comes to misinformation (as on social media) eg sheep trade, mulesing, glyphosate. Glyphosate - what plan does GRDC have if/WHEN Europe lose glyphosate? The pressure will be on every other producing country.	GRDC will keep abreast of this issue and provide input when/if required
Farm labour.	Labour availability in Ag. Do we need some advertising programs in the cities? Labour availability and prioritising labour resources to be most cost/task effective. Need for a new generation of shearers through training. Recognition of shearing as a trade for benefits rather than being seasonal labour. Need expertise in the industry and development for shearers and staff.	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Using data more effectively.	App based on adapting to seasonal rainfall and enterprise change. Using combined aggregated data (yield, soil, rainfall, crop imagery) more effectively, eg on the go ripping decisions, variable rate decisions, and enable this to be used mid-season as well according to rainfall/conditions.	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Net blotch.	Needs to get grower funded information back to its funders quicker. One example of this is the Net blotch survey completed through the Albany port zone. Still haven't seen results! Breeding for better spot type net blotch resistance to be able to continue to grow barley on barley.	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Herbicide tolerance using other chemicals in group (not just roundup ready types).	For life beyond glyphosate. Crop topping RR. Canola, what are our options? Ryegrass control, Sharpen?	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
BMP for fungicide management.	Where should crop establishment fungicides be placed to maximise efficacy, below, beside, above, on the seed? Learning from the Yorke Peninsula SDHI resistance. How long till we break products etc in a system approach. How many shots do we get?	Ranked highly by RCSN members at their RCSN member meeting. The RCSN identified this as an issue but did not further develop this issue at this time. However, the RCSN wanted to ensure that it continued to have presence within GRDC.
Increasing rooting depth in sodic duplex soils	Removing compaction while not bringing sodic clay to surface.	Noted as an issue by RCSN members at their member meeting, with further input provided by RCSN members to GRDC.
Regenerative agriculture	Regenerative ag is the only agriculture that has a school curriculum and is gaining momentum. It is all based on hearsay and no data on actual carbon in the soil etc	Outside GRDC scope (we have little impact) but GRDC will keep abreast of this issue and provide input if/when requested

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Stubble management.	For trash clearance when sowing next crop, what options and machines work well.	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time but provided advice to GRDC on further extension in this space including messaging from the Stubble Initiative (Southern Region)
Insect thresholds for control in current times	Insect thresholds were defined 30 years ago. We are still working off rough thresholds that have been passed on through the years without double checking them. Also crop yields and biomass have significantly increased since the thresholds were done and it is getting harder to detect insects	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time. However, it will be forwarded to GRDC for their discussion
Sub surface drainage.	Sub surface drainage demonstration project, do we need to add blue-metal to the slotted pipe?	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time. There is current GRDC investment occurring in this space
Hybrid canola.	Need a guide to look at reducing seeding rates of Hybrid Canola seed in HRZ related to time of sowing. Anecdotal evidence of rates down to 1.0kg/Ha not getting any yield penalty when seedling emergence in early April (under half the 2-2.5kg currently recommended by seed companies). Standardised seed sizing with hybrids v's open pollinated varieties in NVT trial sites.	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time but provided advice to GRDC on further extension in this space
Flax/Linseed; is this an option?	Southern Dirt trials 2019 yielded approx 0.6t/ha (despite accidental herbicide damage) at an estimated market value of 800/t. Market demand in WA untested. Sounds like a good clean up crop, tolerant to many herbicides	Identified by the RCSN members as not urgent but important, however GRDC have some small investments currently in this space
Machinery	Warranty resolution, lemons, parts access, aggregation of data re issues, outside scope of State Fair trading provisions. Extension on what are a farm businesses rights when there is an issue that is not resolved satisfactorily. Not under same rules as general consumer.	Outside GRDC scope (we have little impact) but GRDC will keep abreast of this issue and provide input. However, Kondinin Group are working in this space as are GPA
Snail and earwig management and options for control.	Lack of sustainable earwig and snail control options. Continue exploring techniques for further reduction of snails as they are continuing to spread GEOGRAPHICALLY and tolerance ie delivery standards are getting tighter.	Noted as a high ranking issue by RCSN members at their member meeting, however the RCSN did not further develop this issue at this time as there is current large GRDC investment occurring in this space
Water use and security.	Lack of water for spray and livestock in dry seasons. How can growers maximise water use efficiency on farm in general? Drought proofing - Water catchment/storage design - many parts of the southern part off scheme are now close to 3 years without runoff rainfall - quality/quantity spray water issue. Defined declining rainfall in SW WA - modelling in relation to future availability? Are we growing the correct species for our water availability, or should we be investigating alternate species or varieties?	Outside GRDC scope (we have little impact) but GRDC will keep abreast of this issue and provide input if/when needed
Glyphosate resistant ryegrass outside of paddocks	Glyphosate resistant rye grass coming into paddocks from roadside spraying and fire breaks due to repetitive use of glyphosate as primary mode of control	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time as there has been past work conducted in this space (AHRI; DPIRD)

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Successful integration of livestock into the farming system	While preserving cover that does not jeopardise grain production.	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time as there has been past work conducted in this space (Grain and Graze)
Facilitation of autonomous farm equipment adoption	Tech suitability, legal framework, economics etc	Identified by the RCSN members as not urgent but important, however will ensure GRDC are aware of it
Revisit lime calculator.	There seems to be some pits pushing the NSW lime calculator over the W.A. Which one is correct? Wet sieve analysis and particle size are important factors in lime quality but are largely ignored in the WA Lime Calculator.	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time but provided advice to GRDC on further extension in this space
Waterlogging.	Further investigations into summer cropping/cover cropping for weed competition, waterlogging, rotating chemicals. Nitrogen efficiency in waterlogged crops. Transient waterlogging - should we be trying to 'pump' as much in as possible or should we just stop spending money?	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time. There is current GRDC investment occurring in this space
Purchased seed company canola seed vs grower retained seed.	Big differences in establishment, weed competition and eventual yield result. Seed is expensive. Has work been done on a return on investment for seed purchase cost? Mark Seymour work summarised in DPIRD publication a year or two ago. Could this be extended?	Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time but provided advice to GRDC on further extension in this space
Red clover disease	More prominent in wet years.	The RCSN identified this as an issue but did not further develop this issue at this time. MLA are looking at this issue
Local comparison of disc seeding systems		Noted as an issue by RCSN members at their closed member meeting, however the RCSN did not further develop this issue at this time but provided advice to GRDC on further extension in this space including promotion of the Seeding Systems case study booklet
Costs/benefits and differing management approaches of nursery paddocks (for seed) for optimising seed quality.		Identified by the RCSN members as not urgent but important, however will ensure GRDC are aware of it
Better feed grain for feedlots in WA	Understanding what the feed-lotters need in terms of feed grain quality - high energy, low screenings. If they understand they need to pay for quality	Identified by the RCSN members as not urgent but important, however will ensure GRDC are aware of it
Desalination.	Neutralising salt in soils and water, decrease or remove salts with a chemical process rather than desalination. Desalinating ground water. Economic analysis of the cost of doing this for sheep/mixed system/suitability for spray application etc.	Identified by the RCSN members as not urgent but important, however will ensure GRDC are aware of it

NB: ALL issues raised at the Summer Sesh events and RCSN member meetings will continue to have presence at the RCSN discussion table and will be forwarded to the GRDC Western Panel and GRDC for continued visibility that may feed into existing or future initiatives.

Thanks and Further Details.

Thank you to everyone who attended the Summer Sesh events and RCSN member meetings and contributed to these detailed discussions.

For further details, contact the RCSN Facilitator Julianne Hill on 0447 261 607 or email regionalcroppingsolutions@gmail.com. You are also welcome to visit the RCSN website – www.rcsn.net.au; and to follow us on Twitter @Julianne_Hill, or visit GRDC - www.grdc.com.au.

A number of RCSN initiated projects have been put on the ground in the Albany port zone since 2011 and can be found on the RCSN website.

The winter round of Open Forums will be held during early July within the Albany port zone, followed by an RCSN member meeting (depending on Covid-19) which will be held in Wagin on 2 July 2020. Further details will be available soon.