

GRDC's Geraldton port zone Grower Network held their member meeting on 23rd and 24th July, 2020 at Dongara Recreation centre. As part of their meeting, the Grower Network members visited Dongara Marine; & Illegal Tender Rum Co. All 12 of the Geraldton port zone Grower Network members attended their meeting including: John Flanagan, Chad Eva, Jason Stokes, Geoff Fosbery, Raylene Burns, Murray Thomas, Jerome Critch, Andrew Cripps, Phil Smyth, Shaun Earl, Marcus Blake, Daniel Birch. Rohan Ford & Fiona Dempster (Day 2 only) (Western Panel); Jo Wheeler (GRDC Grower relations – West); Julianne Hill, Grower Network coordinator and Grower Network support Grace Barden (3rd Year Murdoch student), Joel Johnstone, Megan Abrahams & Andrew Blake (DPIRDs RRA team) were also in attendance.

All Grower Network members were asked to bring ideas from five farmers/advisors from their area, and to consider these ideas along with ideas raised from the online open feedback that was hosted at www.rcsn.net.au and open for the month of June. 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 rated 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?

From this, the following were developed:

- A full list of Issues, constraints and opportunities impacting on growers in the Geraldton port zone
- Area, impact and frequency of Issues that the Grower Network considered needed more work or that there was a gap still
- NVT ideas session along with an NVT update given by NVT representatives Geoff Fosbery and Raylene Burns

Grower Network members then further discussed and expanded on those top issues that they believe need further investment, and chose some areas to further explore for possible R, D or E by GRDC and/or partners as below:

- Three Deep Dive issues: Brome grass; Heat stress and long coleoptiles; Strip and Disc.
- Two MAKATs: Brome grass; Heat stress and long coleoptiles;
- Two Issues Captures (Brief): Weather forecasting; Heat stress and long coleoptiles

A Zoom update on Heat stress and long coleoptiles was held, with speakers including Josh Johnson (GRDC's agronomy, soils and farming systems west manager); Dion Bennett, AGT (Northam-based AGT wheat breeder with Australian Grain Technologies); Bertus Jacobs, LongReach Plant breeders (Senior Wheat Breeder); Greg Rebetzke, CSIRO (Chief Research Scientist -genetic and physiological factors affecting water productivity in rainfed winter cereals); James Hunt, LaTrobe (agronomist and crop physiologist specialising in water limited productivity of dry-land cropping and mixed farming systems). This formed the basis of discussion and input for the Deep Dive/MAKAT above.

Table 1: Summary of areas of interest raised via Online Open feedback or by Grower Network members

Top issues, opportunities or constraints raised at previous meetings (Feb 2020 & July 2019)	GRDC Action Taken	Any Further Action Required & Comments
Managing cropping systems with consideration to late breaks to the season and earlier heat stress at the other end, includes heat stress after germination. Deep Dive & MAKAT conducted on this issue. Issues capture also conducted on this issue	Currently there is a large amount of analysis happening in the frost space to understand the gaps in the knowledge from the information that has been created as part of the NFI. Heat is the next biggest issue that will be looked at.	Canola and wetters? Soil wetters and seed coatings. Agree - more work here with the number of new products to hit the market. Low soil moisture and getting the crop up on less rain with soil wetters aiding this is worth discussion.
Investigating farming systems without glyphosate to preserve this chemistry	GRDC is cognisant of this issue and is taking a strategic approach to examining this at a high and broad level. In addition, GRDC has over \$20M invested in non-chemical weed control and integrated weed management.	Non chemical weed control. Think this year's wind proved this will be a challenge in most years if stubble loads are already low.

Further work and ground-truthing of green on green technology in the northern agricultural region	University of Sydney investment looking at open source weed image library to make weed recognition data freely available to the weed control industry. This will provide a path to market for weed recognition technologies that can make use of the database. The project will determine best database structure for facilitating weed recognition algorithm development. A machine learning approach will be identified and implemented to demonstrate the utility of the database. Open access to the database will then allow developers to develop weed recognition software for growers.	This is a game changer and must be the future of broadacre chemical application. Blanket spraying for specific post-em weed targets has so many disadvantages including cost, crop and soil health impact, social license concerns. What can GRDC do to speed up technology advancement and utilisation in Australia? Does the reduction in cost from lower chemical use get used up in higher cost of capital equipment?
Soil acidity (including lime and gypsum) incorporation	The new co-investments with DPIRD will look at some of these issues. There is a current investment with Equii to extend the information from previous soil investment. This investment has just produced a factsheet in regards to sodic/dispersive soils. More articles, factsheets and workshops are expected from this investment	No further action required at this time
Weed control during dry seeding opportunities with a focus on pre-emergents	There was a need to investigate the effect of weed emergence timing, dry seeding and crop competitiveness (as driven by seeding rate) on annual ryegrass competitiveness and seed production. This variation was specifically to address this topic and the research aims to investigate the effect of wheat time of sowing and seeding rate, on the effectiveness and degradation of pre-emergent herbicides commonly used to control annual ryegrass in no tillage farming systems. Some current work also in the same investment has studied the interaction between seeding rate and row spacing of hybrid and open pollinated canola varieties on wild radish growth and seed production. Results have shown the combination of hybrid canola (HyTec Trophy) with higher crop density was more suppressive of wild radish (and ryegrass) seed production than the open pollinated Bonito.	This is very topical after so many years without a knockdown. Also spreading risk against catastrophic events like wind, frost, disease, heat etc. If all crop comes up on the same rain then a lot of eggs in one basket. It also increases spray timing pressure.
Compaction and Ripping	The new co-investments with DPIRD have included heavier soil types. There are also the ripper gauge sites that will be completed shortly that also targeted heavier soil types. West Midlands Group is collating all the projects data from the state trials. The Soil extension project with Equii is also working in this space with articles looking at rippers, rollers, mapping of paddocks to create variable ripping zones. Bindi Isbister video from the soil amelioration bloopers Updates paper will be released shortly which highlights the do's and don'ts of ripping.	No further action required at this time
Soil amelioration options suitable for a range of soil types in the Geraldton port zone	The new co-investments with DPIRD have included heavier soil types. There are also the ripper gauge sites that will be completed shortly that also targeted heavier soil types. West Midlands Group is collating all the projects data from the state trials	No further action required at this time

Management and selection of winter crops to manage crop development better and take advantage of March/April germination opportunities and survive dry periods until winter rains arrive.	Winter wheat project with Southern Dirt and CFIG, looking at grazing opportunities and agronomic package. The project has a group of growers linked with a local Agronomist at each site to follow what's happening. The sites are broadscale, sown with grower machinery. While in the HRZ, there are projects looking at early sowing opportunities of cereals and canola.	Collect data from farmers who have trialled winter wheats in 2020. Check out GRDC booklet "Ten tips to early sowing". Perhaps modify for WA? Weed control running out from pre-emergents when ryegrass is trying to germinate? Is crop competition enough in this situation?
Carbon capture in grain farming	The Western Office has forwarded this issue on to the investment manager looking after the CSIRO investment which is just starting. The project is looking to reduce the greenhouse gas intensity of producing grain while maintaining grower profitability	This CSIRO/GRDC project must include measurement of greenhouse gases from a grain farm (production and sequestering to achieve a net gain or loss position) prior to looking at reduction of greenhouse 'intensity'. Profitability won't be properly understood if we don't understand current status of net emissions.
Better agronomy and packages to manage brome grass, capeweed, wild oats and barley grass in the Geraldton port zone.	There is an analysis being undertaken to understand the data for better management. The Crop Protection team is running several projects looking at Barley Grass, The emerging weeds project is contracted with Uni of Adelaide but is running within WA. There is also a project looking to demonstrate and validate IWM strategies to control barley grass in the low rainfall zone. Also contracted to Uni of Adelaide but also running in WA. Working with grower groups. The New uses for Existing Chemistry project is also still active and is looking at Brome grass and barley grass. This is also a National project contracted with Uni of Qld. There is also an investment with AHRI (Roberto Busi) to undertake herbicide resistance testing of 40 growers with their advisers, looking at up to 4 problem weed species on farm (to be directed by the growers) including ryegrass, radish, capeweed, brome and barley grasses.	I don't think QPE or any group A is the answer for brome and barley grass. Since brome grass is so soft seeded, it should be one of our easiest weeds to deplete a seed bank??? South Australia has lots of info on how to control brome grass
Machinery investment costs seem to be growing and becoming hard to manage	GRDC currently have a national investment covering this issue with the Kondinin Group, managed by Ben White. This will be updating the information from the previous project just in Kwinana West port zone. There will be a calculator and case studies developed for different farming systems	No further action required at this time
Promoting a positive image about agriculture by upskilling growers in how to talk the language	The suggestions from this group have been forwarded on to the group working to produce the GRDC capacity and ability framework. This framework is still under construction.	No further action required at this time
Managing farming systems to better manage MRLs	This issue has been raised with the Crop Protection and Biosecurity and Regulations teams	No further action required at this time
Rotation options in marginal areas including re-evaluating current rotations and inclusion of livestock in these more marginal areas	CSIRO low rainfall project is currently in its last year. The main site is in Merredin and there are a couple small satellite sites as well. UWA project - Long term study to increase WUE, grain yield and the profit of growers in the Western Region in a no-till system. Long term WANTFA site in Cunderdin. Field work has been completed	No further action required at this time

More work needs to occur to deliver better adapted barley varieties in northern agricultural region with agronomy to match	Current investment with Kalyx looking at 6 barley varieties x 2 TOS x 2 N regimes. Sites are at West Casuarinas, Eradu, Ajana, Canna, Mullewa, and Northampton. First year of trials	No further action required at this time
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New ideas from this meeting	Issue Expansion	Any Further Action Required & Comments
Lupins (issues raised at last meeting, by online forum and again this meeting)	Lupin agronomy/breeding - can we reduce pod shatter/losses on predominately the primary? Is this being bred for improvement?? Lupins – Inoculation. Lupin research and possible projects – need to see involvement by local groups. Access to herbicide tolerant pulses, particularly lupins	Sowing depth to tap in to stored summer moisture. How deep can we go successfully? Do we need to inoculate lupins after soil amelioration? Every year? 1 and 2x the recommended rate? Does peat inoculant give any benefit in dry seeding conditions. Growers moving away from canola to lupins in northern ag region because of lupin v canola pricing and better wheat crops following lupins. Also is the benefit from lupins purely N or are there soil diseases like rhizo that are also a part of the equation?
Blue Lupins (raised last meeting, and via online forum)	Blue lupin control in white lupins.	Blue lupin control by different seeding rates, or delayed sowing to get knockdown x seeding rate. New radish pre-em Reflex looks very promising for radish control in lupins. A lot of new chemicals have come out in the last couple of years. Need trial work to see if they can control blues and not damage whites. Basta Lupins?
Strip and Disc (issue from last meeting and this meeting combined). Deep Dive conducted on this issue	Stripper front and disc seeding systems. Seeding gear set-up with particular interest in strip and disc. Zero till benefits/issues for our port zone	Effective agronomic packages to match. Chemical registrations mainly refer to IBS with knife points. No mention of disc seeding. Massive interest in disc seeding this year but they have a bad reputation as high maintenance and a slower growing crop compared to a Tyne seeder with under seed cultivation
The "Big Blow". What have we learnt? How do we fix it?		What are the risks with soil amelioration? Are recommended ground coverage recommendations adequate? How easy is it to get trials up and running after events like this? For the Big blow - collating info from this and having a reference guide for when it happens again. Should we be ripping more vulnerable paddocks PSPE after rain? Work to support this. East-west v north-south seeding. Chemical damage. Reseeding decisions, plant density requirements, plants ability to rebound from an event? Tramline renovation (rough in the paddock after blow).
Managing post-emergent spray timing vs weed health in dry conditions	Is it better to spray weeds ASAP when dry and stressed? Or better to spray advanced weeds that are fresh from recent moisture.	Many factors but it is an issue that has been raised a lot recently with some level of confusion, perhaps just timely extension required.
Yield impact of poorly timed post-emergent broadleaf sprays in LRZ cereals	Broadleaf sprays in cereals are sometimes applied outside of preferred growth stage due to other spraying program priorities, particularly in late breaks. What is impact of early or late application compared to ideal window. Focus in particular on bleaching effect of Group F's when dry finishes are experienced. E.g. Prosulfocarb/Jag at 2 leaf	This is worth looking at. We had some issues this year, too. Include plus and minus Zn for crop recovery. Stacks of frost info relevant to this topic available from NSW

	(early) vs Flight at 5-6 leaf (late) vs control when applied at 4 leaf.	
Brome grass management. Deep Dive & MAKAT conducted on this issue	Brome appears to be becoming more of an issue	
Insecticide use, where is the balance?		Also, Fall Army worm - need to make sure Agronomists and farmers are up to speed
Trials to test registered plant-backs for cereals into propyzamide	Widespread issues with canola and lupin establishment in 2020.	Where propyzamide has been used as pre-em, there are only a few that have tried to re-plant with cereals after minimal rainfall and time lapse. Crop type re-seeding decisions can significantly effect profitability in NAG due to dry and warm finishes.
Phosphate in soils - where is it going?	We are putting enough Phosphate on for 2.5t/ha, but only harvesting 1.4t/ha of grain. Where is the rest of the applied P? Tied up? Not showing in soil tests. We've limed, why isn't it showing up in soil tests?	Soil tests not as accurate as they need to be. ie not representative of what the plant can access.
Tramline renovation	Tramlines deepened by CTF and exacerbated this year by wind events. Growers are looking at ways to repair them.	
Harvest Fire safety	New technology for harvesters eg. fire retardant balls?? Something for Kondinin Group to assess?	Elders insurance offer a discount for headers fitted with flame retardant devices. "Elide Fire Ball", dry powder, mounted in engine bay, \$164, automatic in event of fire is what the grower was wondering about.
Seed singulation fit for our zone	Where is the world at with regards to this?	
New pastures for low rainfall areas		New variety Franno serradella which is 3 weeks shorter than Marguerita. Around 6 growers have bulk-up seed this year in WA

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

Further Details.

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

A number of Grower Network initiated projects have been put on the ground in the Geraldton port zone since 2011 and can be found on the Grower Network website. The summer round of Summer Sesh events will be held in January 2021, followed by a Grower Network member meeting (depending on Covid-19) which will be held in Jurien Bay in February. Further details will be available soon.