

GRDC's Kwinana East port zone Grower Network held their member meeting on 13th and 14th August, 2020 at Southern Cross CRC. As part of their meeting, the Grower Network members visited local growers and FEAR President Callum Wesley (long coleoptile work; seeding systems) and Clint Dellabosca (mustard, rhizoctonia, barley). 11 of the Kwinana East port zone Grower Network members attended their meeting including: Clint Della Bosca, Darren Kilminster, Nick Gillett, Ty Henning, Cathy Cooke, Glen Brayshaw, Alex Leake, Floyd Sullivan, Callum Wesley, Nic McGregor, Luke Yates. Jules Alvaro (Western Panel); Jo Wheeler via Zoom (GRDC Grower relations – West); Julianne Hill, Grower Network coordinator and Grower Network support Cindy Power, as well as Ashleigh Donnison and Grace Williams (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](http://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 Kwinana East 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 Nick Gillett and Ty Henning.

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

- Three Deep Dive issues & associated MAKATs: Capitalising on summer rainfall events in low rainfall farming environments; Oats for the eastern wheatbelt; and Strip and disc systems
- Two Issues Captures: Sub-soil amelioration by mechanical means; and Rhizoctonia

A Zoom update on “Ways to manage late and patchy starts to the season while capitalising on summer rainfall” was held. Josh Johnson (GRDC) put together some ideas for the group to think about, and speakers included Andrew Fletcher, CSIRO; Bertus Jacobs, LongReach Plant breeders; Greg Rebetzke, CSIRO; and James Hunt, LaTrobe. This formed the basis of discussion and input for one of the Deep Dive/MAKATs 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) | Idea Description   | GRDC Action Taken  | Any Further Action Required & Comments  |
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| Promoting farming systems without glyphosate to preserve this chemistry                     | Growers in the Kwinana East port zone as well as Kwinana East port zone RCSN members noted that glyphosate use has been a bone of contention for some time.<br>There are some actions that this zone has identified to help with this issue: <ul style="list-style-type: none"> <li>• Development of information for government and grain marketers on the safety, rates, uses etc of glyphosate.</li> <li>• Glyphosate alternatives, if it is banned from use. What can be used? Identify the cost of production if glyphosate can't be used. More extension on alternative chemicals and systems that don't rely on glyphosate.</li> </ul> | Grains Weed Advisory Committee, lead Rural Directions (RDP00015) - working to provide integrated weed management strategies for major crop-weed threats to grain production Will also provide recommendation to GRDC. GRDC currently has over \$20 million invested in non-chemical weed control and integrated weed management. | With growers considering the reduction in glyphosate, is there pressure growing on the use of Imi's for the amount being used in barley rotations, including Clearfield canola and wheat? This also relates to market acceptance from buyers. Alison Walsh (DPIRD) is researching the environmental and economic impacts on Western Australian farmers' if the social licence to operate for Glyphosate were removed and this is very pertinent to this issue. Grower Network members wanted further work to occur in this space. |

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| <p>Extension of current work on heat and drought tolerance of cereals</p>  | <p>RCSN members from this zone have noted that a great deal of work has gone into heat and moisture stress work in the past. They are interested in getting an update or further extension to the broader public about varietal tolerance in wheat and barley for heat and moisture stress. Some great scientific work being done on heat stress at flowering reported in GroundCover in recent months.</p>                | <p>The GRDC analysis for Key Investment Target (KIT) 1.1 will be undertaken as soon as the frost KIT analysis has been completed. It is the next big piece of work to be completed. There has been a lot of research in the pre-breeding space which will be included in the analysis. The analysis will also look at research that has been conducted internationally, and look for gaps in the current knowledge.</p> | <p>Can we involve the wheat breeders in the research journey so that they are informed of what growers' needs are? Lots of research sits on the shelf once developed. Grower Network members wanted further work to occur in this space.</p>  |
| <p>Machinery investment costs seem to be growing and becoming hard to manage</p>   | <p>Bigger programs wear out machines more quickly. Need to understand the unit costs? Revisit own versus contract hire. Multiple units or own + contract; as well as the economics around running multiples or one unit.</p>   | <p>GRDC currently have a national investment with Kondinin Group, managed by Ben White. This will be updating the information from the previous project that was developed for Kwinana West port zone. There will be a calculator and case studies developed for different farming systems</p>  | <p>Grower Network members wanted further work to occur in this space, including development of a 5 to 7 year calculator on ROI on low hour second hand gear that can be used as a cheat sheet before buying equipment.</p>  |
| <p>Low rainfall environment and low input farming</p>  | <p>Growers in the Kwinana East port zone have noted that they believe GRDC are forgetting low rainfall environment farming. Of interest to them are things such as: managing sodic soils; stubble management research; new or existing fodder crops/varieties/species suited to LRF zone which can be grazed then potentially produce hay or grain.</p>  | <p>DAW1902-001RTX Increased grower profitability on soils with sodicity and transient salinity in the eastern grain belt of the Western Region. Lead Researcher: David Hall. WAN2004-001SAX - Maintaining Profitable Farming Systems with Retained Stubble – WANTFA. WMG2004-002SAX - Review of biological (plant based) options to alleviate soil compaction - West Midlands Group</p>                                 | <p>Grower Network members wanted further work to occur in this space.</p>   |
| <p>Growers have access to information to manage soil acidity including variety choice (through NVT), &amp; soil amelioration economics</p> | <p>Growers in the Kwinana East port zone still consider acidity and aluminium toxicity an issue. There are three main areas they want to see extended: acid tolerant crops, including barley, wheat, canola, legumes and ryzobia; Further economics of soil amelioration in the LRF zone and lime incorporation options; varietal differences for things like Al tolerance, N usage, frost tolerance etc in all crops.</p> | <p>Soil Constraints Extension Project, lead Wayne Pluske (PLT1909-001SAX) - Workshops and field days to extend the information obtained from the previous soil constraints - West investments. ROSA model available to look at economics of soil amelioration. Your feedback regarding NVT has been passed on to the NVT team.</p>  | <p>2020 had a lot of erosion damage to young crops attributed to tillage of any kind, which makes future amelioration plans challenging. Stubble incorporation in these scenarios are a must, and structure of soil also to be looked at. Crop risk profile should also be considered given some amelioration has gone pear shaped this year.</p> |

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| <p>Increased incidence of dry starts and lack of effective knockdowns sees an increased reliance on integrated weed management</p> | <p>Kwinana East RCSN members identified this issue further defining it as particularly relating to dry starts. They want to know more about IWM including mapping, green on green, ryegrass and radish management, with more analysis of IWM methods and technology specifically related to their port zone (low cost base). They also believe that some of the IWM options available need to be looked over multiple seasons. When does it become economic (different technology) and the thresholds for numbers of weeds for different technologies?</p>   | <p>AHRI - 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. Work is being done/is planned in the following locations: York; Dalwallinu; Katanning; Mingenew; Dowerin; Grass Patch; Geraldton; Wyalkatchem; Munglinup</p>  | <p>Jaguar Lve (and other similar variants) has failed in many areas in 2020 possibly due to resistance, conditions, rate creep or all of the above. Combine this with rip/tillage and you get a flush of hard to deal with weeds such as ryegrass, especially where next gen chemicals aren't used. Sakura etc. Struggle to manage barley grass with IWM, especially with the use of HSD etc. Barley grass is a bigger issue than ryegrass</p> |
| <p>Crop breeding work and development</p>  | <p>Growers and RCSN members at Open Forums and RCSN meeting identified that they wanted further crop breeding work to continue in: Salinity. It's still a big issue and it's still and expanding issue. Would like to see a long season long season wheat and spreading frost risk that we can sow in April. Barley... too many varieties - what do consumers/buyers really want? Management of acid soils. Improving pH cost effectively. Varieties (acid tolerate) or crop types. mitigating low pH. Lack of heat and frost tolerance in canola (long and short season)</p>  | <p>KIT 1.7 addresses the issue of soil sodicity and salinity. Transient salinity, rather than primary salinity will be addressed as part of the KIT. A major review and analysis of all previous frost and heat investments is currently being undertaken, new investments will be identified as part of this process.</p>  | <p>Grower Network members wanted further work to occur in this space. Marginal saline areas expressed heavily in 2020 season showing the problem is still getting worse. Illabo as an alternative.</p>   |
| <p>Annual herbicide and fungicide resistance testing of known populations to watch genetic change over time</p>                    | <p>Using more relevant and recent testing based on what Mechelle Owen started with ARHI. Concern about herbicide resistance in barley grass brome grass and ryegrass. Early spot form net blotch already present. Concerns over treatment costs. Fungicide rotation to avoid resistance and new actives in market making space confusing. Crown rot increasing as an issue. Old generic chemistry vs new proprietary chemistry, cost and effectiveness in low rainfall low yielding environment. le propiconazole multiple applications vs strobi mixes. Resistance management an issue, but is it our responsibility for low rainfall to worry about this 'social problem?'</p> | <p>AFREN (Australian Fungicide Resistance Extension Network). IWM strategies to control barley grass in the low rainfall zone. 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. AHRI (Roberto Busi) 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. DAW00245 - Yield loss response curves for host resistance to leaf, crown and root diseases. DAN00175 - National Crown rot epidemiology and management program</p> | <p>Grower Network members believed that the current work in this space could address much of this. Fungicide is a different issue to herbicide</p>   |

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| <p>Grass weed management is often difficult in the eastern wheatbelt</p>  | <p>Staggered germination of barley grass leading to huge pressures in crop. Early seeding with no knockdowns for 3 years, high rates of pre-em herbicides have been used to extend residual control on grass weeds which have consequently resulted in germination issues such as silly seed. We need cost effective grass weed control options for barley and brome grass for low rainfall eastern wheatbelt areas.<br/>New chemistry for late germinating ryegrass in cereals with a focus of MRLs and our end market.</p>        | <p>IWM strategies to control barley grass in the low rainfall zone. The New uses for Existing Chemistry project is also still active and is looking at Brome grass and barley grass. 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.</p> | <p>Grower Network members believed that the current work in this space could address much of this.</p>   |
| <p>There are a lack of early sowing opportunities currently with the risk of frost and heat in spring considered too high</p> | <p>Growers and RCSN members in the Kwinana East port zone want to have access to early sowing agronomy packages and one of the things that they believe will help with this is herbicide package research and extension (products, rates, and applications in sometimes dry, warm autumn conditions) for early sown crops (canola, winter wheat etc). They have also identified that there is a lack of early sowing opportunities as many growers are not willing to accept the risk of frost and heat at the end of the year.</p> | <p>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. Whole swag of frost investments still underway. Heat is the next biggest issue that will be looked at.</p>   | <p>Grower Network members believed that the current work in this space could address much of this, though spring heat is an issue of high importance. They believe this work is out there but would like to see further extension of it to help them make better, more informed decisions.</p>   |
| <p>Staffing issues, sourcing good quality staff and retaining them.</p>   | <p>This is the third most limiting factor in our businesses after land purchasing and rainfall. Labour is the elephant in the room as we can't go forward with backpacker labour alone. GRDC to play a role in developing staff training and education courses for staff Training. Impacts on timing of management, seeding and spraying. It is constraining farm business profitability and expansion.</p>   | <p>GRDC is writing a submission to the National Agricultural Workforce Strategy. GRDC also invests in 'People in Ag', a cross RDC initiative led by Dairy Australia DAL00001. Provides HR templates, inductions etc. GRDC supports 'Careers in Grain'. Farm business Updates - can be included as a topic in 2021.</p>  | <p>Covid-19 almost caught us for seeding, will have impact at harvest. directly or indirectly. Look at re-training and promotion of ag to take advantage of unemployment numbers. Ag is going to need some exemptions from Government to bring in International labour during Covid-19. Don't know where or how we will get staff for this harvest and seeding 2021 otherwise. The Covid situation is a forced opportunity to employ local or from Perth, could open up some other avenues long term? Grower Network members wanted further work to occur in this space.</p> |
| <p>Pulses, rotations, profitable legumes/breaks</p>   | <p>Kwinana East port zone RCSN members have identified that they would like access to better break crops and legumes for their low rainfall farming systems. This has been an issue for some time. Have seen growers attempt break crops and achieve great results by first setting up the system. Motivates others to have a</p>   | <p>Liebe Group Legume demonstrations (LIE1802-003SAX). Field peas and chickpeas have showed promise. Southern Dirt Linseed project (SDI1906-005RTX), three sites this year with Southern Dirt (Wagin, Darkan, Kojonup). 2019 sites</p>  | <p>When will the new low pH rhizobia be released for the eastern wheatbelt? These legumes also need to be harvestable. Belief that there is still no profitable legume options or agronomy and that further extension is needed, particularly for low rainfall areas. Pasture</p>  |

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|   | <p>proper try, but needs that system set up. Desorption is common because there is typically no consideration of the agronomics/systems firstly. Provide long-term whole farm benefits. Gives agronomic benefits in canola/cereals, provides risk management options, disease/weed control break. Sheep gross margins are healthy. Pulses help manage the autumn feed gap while providing agronomic benefits in the following year's cash crop. However, RCSN members also identified that they don't know how to grow them and there is a great deal of lost knowledge on how to grow them – pH, acidity levels, seeding, row spacing, nutrition, chemicals, harvestability. They are also not aware of when they are profitable to be grown.</p> | <p>did well given the season, average yields were between 0.5 and 1 t/ha – promising break crop for the region. High value pulse project, lead Mark Seymour DPIRD DAW1903-004RTX, started last year. Best-bet legume packages for different areas. Particular focus on new faba bean, chickpea and lentil varieties and agronomy packages. Also includes and inoculant component. Dryland pasture legumes systems with Ron Yates (Murdoch Uni) and CFGI, CSIRO, MIG (UMU1805-001RMX ). Resilient low cost pasture systems for medium to low rainfall areas over range of soil types. Increasing the effectiveness of nitrogen fixation in pulses through improved rhizobium strains with Ron Yates (Murdoch Uni) and Curtin Uni ( UMU1805-001RTX ). Double break with a high value pulse WMG (WMG2003-001SAX) - lentil or chickpea after a canola, against a cereal. Sites in Dandaragan, Latham, Narembeen and Cuballing.</p>   | <p>related - observed some good stands of Vetch, have achieved a graze off these for 2020, side by side next to serradella, and visually as at the end of July, Vetch had more biomass. Rhizoctonia has expressed quite badly in 2020 across different farming systems and rainfall belts in the Eastern Wheatbelt. It is a lot worse than 2018 or 2019, was this due to summer rain, lack of rotation with cereals or some other reason? Lupins that germinated at the main break lack vigour and will struggle to be profitable compared to early germinated lupins and field peas that were planted in the first week of June. Dry June and July highlight the importance of acid tolerant rhizobia and subsoil amelioration as Lupin and serradella roots in acid subsoil don't nodulate. Just a comment - Hope that seasons like 2019 are respected by researchers. These are the conditions that we farm in. Need to be using the data and insights gained for long-term perspective on comparison of rotations, systems, etc. Grower Network members wanted further work to occur in this space.</p> |
| <p>Access to local work and information on short season wheat and barley agronomy</p> | <p>Even though Kwinana East port zone RCSN want to see variety choices for early sowing, they are also keen to see short season wheat and barley agronomy trials similar to a late sown NVT, to allow for options around a late start. As well as a late start, it could also address the issue of an early break but with a drying profile and waiting for a germination at the end of the seeding program. To address this, they would like to see an expansion or growth of the area best practice trials (eg MADFIGs MDF00001) to replace some NVT sites. NVT can be strategically placed for most value but the removal of other NVT sites can be replaced with the best practice trials.</p>   | <p>CSIRO - Low rainfall project. GRDC media release (<a href="https://grdc.com.au/news-and-media/news-and-media-releases/west/2020/2/variety-selection-and-sowing-date-important-considerations-under-future-climate-scenarios">https://grdc.com.au/news-and-media/news-and-media-releases/west/2020/2/variety-selection-and-sowing-date-important-considerations-under-future-climate-scenarios</a>). Online publication (<a href="https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2020/03/what-are-the-optimal-flowering-periods-for-wheat-across-western-australia-and-how-will-they-change-with-potential-climate-change">https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2020/03/what-are-the-optimal-flowering-periods-for-wheat-across-western-australia-and-how-will-they-change-with-potential-climate-change</a>) and a subsequent Ground Cover article. <a href="https://groundcover.grdc.com.au/story/6650210/western-growers-get-pre-seeding-variety-and-agronomy-advice-at-updates/">https://groundcover.grdc.com.au/story/6650210/western-growers-get-pre-seeding-variety-and-agronomy-advice-at-updates/</a></p> | <p>Grower Network members wanted further work to occur in this space.</p>   |

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|  |  | Update paper from Adelaide Research Updates 2020<br><a href="https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2020/02/developing-a-nationally-validated-model-to-predict-flowering-time-of-wheat-and-barley">https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2020/02/developing-a-nationally-validated-model-to-predict-flowering-time-of-wheat-and-barley</a>  |  |
| Access and ability to use lime and on-farm sources             | Growers are looking for more research on finding on-farm lime sources. This includes quality of on farm lime in the wheatbelt; cost/benefit; and more knowledge on what is best. With all the attention the different lime NV tests have had, which is the correct one and going forward, what will be industry standard considering new on farm lime sources? Various lime sources (Morrell, liquid, crushed sands) combined with dolomite/gypsum etc - cost on farm; cost/benefit analysis & yield response.   | GHD2003-001SAX - Rapid Analysis of on-farm lime sources<br>Project to look at different technologies currently available to assess applicability to finding on-farm lime sources.  | Grower Network members believed that the current work in this space could address much of this.  |
| Quantifying the value of CTF in the eastern wheatbelt          | Kwinana East port zone RCSN members were keen to develop a MAKAT on this subject, and were keen to see long term system management trials to compare these systems. RCSN members identified that growers 5+ years down CTF continuous cropping with nil livestock and full stubble retention are achieving incredible results. They want to quantify this benefit against typical wheat sheep matches and non CTF system. Currently continuous cropping feels more risky - there is a lack of long term data and information that LRZ growers are making the correct, best practice, profitable decisions. | ACT0004 - Application of CTF in the LRZ (Southern). New publication (ebook) at the link below. Research results and grower case studies, including growers with livestock.<br><a href="https://grdc.com.au/resources-and-publications/all-publications/publications/2020/on-the-right-track-controlled-traffic-in-the-low-rainfall-zone-of-south-eastern-australia">https://grdc.com.au/resources-and-publications/all-publications/publications/2020/on-the-right-track-controlled-traffic-in-the-low-rainfall-zone-of-south-eastern-australia</a><br>WANTFA long term project has been completed and we are waiting on the final report. | More extension needed. Compaction is still discounted too much. Since our last meeting the short and medium term outlook for wool is not so positive, and that will change things around. Grower Network members wanted further work to occur in this space. |
| Improve on farm connectivity to facilitate communication needs | What's the opportunity cost of missing out on cutting edge technology by not having proper coverage across the farm? Expand the 'Crisp' network for more affordable high speed internet on farm.   | Outside of GRDC scope. GRDC are governed by the PIRD Act. However, this issue has been noted.  | State Government has Digital Farm grants in this space. Yilgarn are engaging Crisp Wireless to develop a plan. Grower Network members wanted further work to occur in this space.  |

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| <p>Biological integrity of soil with consideration given to chemical accumulation and the effect on nutrition and soil health</p> | <p>RCSN members felt strongly about this issue and developed a MAKAT to reflect this. Key issues raised include: We do not know of a longer-term build-up of chemical usage on biology in continuous crop vs other management such as pasture or fallow. We know soil biology is important, we do not know what the chemical usage is doing to the balance of existing populations. Growers need to have the information and tools available to know the range of outcomes from a particular decision and to be able to quickly assess the incremental cost of a post-emergent application and what the break-even points are, range of yield outcomes.</p>   | <p>Investments in this area have been undertaken as part of the soil biology initiative II. ICAN are also running Herbicide Behaviour workshops and there is a range of publications at this link<br/>       - <a href="https://grdc.com.au/resources-and-publications/resources/herbicide-behaviour">https://grdc.com.au/resources-and-publications/resources/herbicide-behaviour</a></p>  | <p>New chemicals and effects on soil biota. Having a better understanding of these interactions is a must. Used group Bs pre-em for first time in 10 years and saw definite crop effect. Carryover effect on legumes by different chemistry, such as SU's, Lontrel, new chemistry such as Ultro, Overwatch, Luximax, Sakura has been noted by growers.</p>   |
| <p>Improving spray indicator guidelines for the Eastern wheatbelt</p>   | <p>Spraying weather conditions with focus on drift inversions improvement to spray indicators (DELTA T) for the Eastern Wheatbelt of W.A. This will help to provide most effective and sustainable use of chemicals</p>   | <p>Your issue has been raised with the Crop Protection team who are currently under taking a review into Delta T.</p>   | <p>Grower Network members believed that the current work in this space could address much of this.</p>   |
| <p>Crown rot is becoming more prevalent</p>   | <p>RCSN members at their last meeting noted that crown rot is a big problem in the eastern wheat belt on heavy soil types, and appears to be increasing. Growers expect Crown Rot In 7 out 10 seasons but want the cost to yield quantified. ie how much does it impact during those years?</p>   | <p>We are working through a broad analysis for crown rot across all the business groups (farming systems, crop protection and genetics) including DAN00175 and the current soilborne disease project DJP1907-002RMX</p>   | <p>Growers advise that there is no feedback as to the test results from CCDM after agronomists send in samples. However, some Grower Network members noted that crown rot is not that much of an issue in their area (though for others it is).</p>  |
| <p>Seeding gear set-up with particular interest in strip and disc - <b>Deep Dive and MAKAT conducted on this issue</b></p>        | <p>This issue was further expanded using a MAKAT. Some key issues include: There is great deal of interest and reports of successful systems using disc machinery. There are opportunities to change machinery to improve water use efficiency etc. Tyne systems are trusted and very common. Growers typically understand the management/farming system requirement. There is interest and curiosity on whether the disc system will take production to the next level. However, there are gaps in knowledge by growers in the Kwinana East port zone including a lack of knowledge of weed control in disc systems and how well do chemicals work in high stubble loads; response on different soil types; and which crops can the discs be used for.</p> | <p>GRDC have contracted WANTFA to conduct a literature review into stubble retention systems, nationally and internationally. Before we look at strip and disc systems, which require large investments by growers, we are looking at how the retention of large amounts of stubble will impact on the current systems the majority of growers use. ie. harvest weed seed management systems, stubble impacts on herbicide efficacy, disease implications etc. Case studies of growers are also included in this investment</p> | <p>Nutrition in the transition seems to be a large consideration with standing stubbles and weed herbicide consideration. Only consideration with this system are the handful of WA growers within the KE zone practicing this. Is it big enough for an investment? Possible field trip to SA or Victoria to study strip and disc set ups with farmers practising this, whenever is it safe to travel after COVID-19. There are a lot of questions regarding this. Huge benefits of soil cover and health no doubt, however what are the implications of this load with small rainfall events at germination etc. Impacts of machinery costs on stretched businesses. Positive or negative? Grower Network members wanted further work to occur in this space.</p> |

| New ideas from this meeting  | Issue Expansion  | Any Further Action Required & Comments  |
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| Capitalising on summer rainfall events in low rainfall farming environments including long coleoptile wheat varieties - <b>Deep Dive and MAKAT conducted on this issue</b> | Currently, there is no commercial availability of long coleoptile wheat varieties. 2 out of every 3 years we have sub soil moisture through summer rains and then we can often have a dry April, May and June, with a very late germination with no yield potential. We need to get the wheat companies interested in this game changer. Grower Network members estimate this is having an 30% yield reduction in those years at a minimum. Impact is certainly over the whole eastern wheatbelt, but could help sandplain in Geraldton zone that are experiencing high wind erosion that is burying the seed deep, and perhaps Salmon Gums in the Esperance zone could benefit and other sandplain areas. | Imi tolerant varieties that we can sow early would give great weed control options. Grower Network members wanted further work to occur in this space.  |
| New strategies and timing for sub-soil amelioration by mechanical means - <b>Issue Capture conducted on this issue</b>   | With the wind and the damage that everyone is experiencing, we need to know what the end result will be (ie wind erosion risk, etc) before we rip to reduce the risk.  | How to line up the opportunity to ameliorate? Winter, spring rip would suit. Grower Network members wanted further work to occur in this space.   |
| Rhizoctonia a lot worse in 2020 than in 2018 & 19 - <b>Issue Capture conducted on this issue</b>   | This issue was further discussed with a number of factors considered that could have an impact such as nutrition; depth of sowing; rotations; zinc; and 2 year breaks. GRDC has developed some extension in this space - <a href="https://grdc.com.au/news-and-media/podcasts/podcast/rhizoctonia-in-2020">https://grdc.com.au/news-and-media/podcasts/podcast/rhizoctonia-in-2020</a>   | Look at old research data. Nutrition to reduce effect? Old Ag Dept data around sowing depth and tillage. Rotations and host management. Interaction with zinc application and Rhizoctonia. Costing of the damage which will then reflect the amount we can afford to spend to control. Costing on manipulating high risk area with chemistry to control. 2 year break as an option. Is there measured reduction in soil disease? Grower Network members wanted further work to occur in this space. |
| Pre-emergent chemical carryover from 2019  | Farmers are often not reading the label for withholding or having knowledge on chemical residues due to lack of rainfall and mm required to dilute chemicals for following year. Also, growers identified that there is a need for independent data, advice & trial work, into adjuvants.  | A ready reckoner on chemical residues for farmers to use. End user markets are watching MRLs as closely as ever. Grower Network members wanted further work to occur in this space.   |
| Salinity a lot worse in 2020 than previous years   | Summer rain then lack of a 'flush' at the start of the season.   | Investigate a rip over it during summer. Use of tolerant plants to grow to increase soil OC. Previous 2 seasons have grown crop and have been highly productive areas, but this year crop has failed to germinate, possibly due to summer rain and lack of rain at the break? Have personally witnessed continuous barley row-on-row reduce salt scald areas, however we must keep livestock off and build residue layer.   |

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| <p>Development and agronomy of better oat varieties for the Eastern Wheatbelt - <b>Deep Dive and MAKAT conducted on this issue</b></p> | <p>Achieving OAT1 is proving difficult. Work needed on management practices to assist getting a better sample apart from good seasonal conditions. GRDC has the following investments: Georgie Troup DPIRD 'investigating the phenology diversity in germplasm to optimise the profitability of April sown oats' (DAW1901-002RTX). Started last year, running till 2021. Variation also processed to look at Beta Glucan analysis through AEGIC to determine if different management strategies had any impact on beta glucan in oat grain. The National oat breeding program finishes at the end of 2020. Murdoch university (UMU2003-002RTX) looking at oat genomic resources for breeders and pre-breeders. Identification of novel sources of resistance to Septoria Leaf Blotch and understanding of evolution and virulence of the pathogen, led Uni of Adelaide (UOA2007-001RTX) - just commenced with aim to give growers access to oat varieties with increased resistance to Septoria Leaf Blotch. Integrated disease management in western region grain crops, lead Geoff Thomas DPIRD (DAW1907-001RTX) - ConsultAg coordinating trial sites focussing on oat yield and grain quality through disease management in high and low rainfall zones (Narrogin and Lake Grace).</p> | <p>Preferred varieties for hay, grain and graze, agronomy trials in the eastern wheatbelt rather than NVT. Dual use oat, graze, hay, grain. Current genetics don't lend towards an all-rounder oat, old Winjardi is still a good performer but is over 20 years old. Grower Network members wanted further work to occur in this space with focus on the eastern wheatbelt</p> |
| <p>Soil wetters to help in marginal rain events</p>  | <p>Appetite for more soil wetters with marginal events as small rain events affects seed vigour creating soft seeds in lupins. Canola losing plants numbers with marginal rain events. Soil type relevant. Shallow seeding? Should we wait for positive rainfall forecast to seed? Using biomass imagery from previous seasons to determine sowing rate. GRDC has the following investments in this space: TrialCo (TRC2004-001SAX) have a new project invested in by GRDC looking at improving germination and establishment (especially of canola) when dealing with non-wetting across different stubble loads and types. How different wetter types, placement and rates interact with stubble loads and types. Sites located in Cuballing, Nyabing, Newdegate, Lake King and Gibson. DPIRD 'expanding sowing window for canola and lupins' lead by Martin Harries (DAW1901-005RTX) - developing risk profiles for canola across sowing dates, varieties and environments. Kelly Cussons Media (CMP1903-001WCX) 'Golden Rules for Canola in the Kwinana East port zone' booklet' - pulling together NVT info, info from tactical break crop agronomy project, and learnings from growers successfully growing canola year in year out.</p>  | <p>Wetters can still fail when conditions are wrong. Perhaps work into whether they reduce risk for the cost?</p>  |
| <p>Grain storage on farm</p>   | <p>Revision of storing grain on farm, as barley will have potential to be stored if there is a low harvest price for either speculating price increase or livestock feed. GRDC has this resource: <a href="https://storedgrain.com.au/">https://storedgrain.com.au/</a></p>   | <p>Cost Vs CBH and selling direct to port. Kondinin group have a few publications. No research needed, extension opportunity pre harvest.</p>  |
| <p>Quick test for checking on-farm gypsum quality</p>  | <p>When searching for an on-farm source of lime, farmers have a 'fizz' test to help identify if further testing may be required. Is there a similar quick cheap test for on farm sources of Gypsum?</p>   | <p>Grower Network members wanted further work to occur in this space.</p>  |

**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](mailto:grdcgrowernetwork@gmail.com). You are also welcome to visit the Grower Network website – [www.rcsn.net.au](http://www.rcsn.net.au); and to follow us on Twitter @Julianne\_Hill, or visit GRDC - [www.grdc.com.au](http://www.grdc.com.au). A number of Grower Network initiated projects have been put on the ground in the Esperance 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 Fremantle as a combined meeting with Kwinana West port zone in February at a similar time to Perth Research Updates. Further details will be available soon.