

<b>HIGH IMPACT ON PROFITABILITY - WESTERN REGION ISSUES - Summer 2020</b>											
<b>Ideas/Issues that impact on growers bottom line. What is the area, frequency and impact on profit of the issue or idea?</b>											
Top 10 Issues and Rankings across zones in January/February 2020 from 3 Summer Sesh events and 5 RCSN member meetings											
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Economic and profitable break crops/legumes and agronomy suitable for particular regions in each port zone (including alternative options, and not just break crops). An example of this is: highly profitable legume options for heavy loam soils. Lupins yields plateauing whilst canola yields continue to improve leading to greater % canola as break crop in rotations (in Geraldton port zone). higher yielding, reliable and lower break-even break crop/pasture options for the LRZ (KE)	X	X	X	X	X	5	4	4	4	4	2
New farming systems or management that allows effective weed control without relying on glyphosate			X	X	X	3	1		1		6
Soil amelioration options for a range of issues - knowing where to start with high variability	X	X				2	2	2	2	3	
Yield gaps particularly for wheat and canola: More effective in season nutrition management, on the go. Ensuring yield gains over the years of cereals/canola are coupled with nutrition increases.	X	X				2	2	1	1		
Understanding background weed resistance in profitable rotations including capeweed, wild oats, brome grass and barley grass. Developing a package to control these weeds and manage them long term in the face of developing herbicide resistance and no HWSC options will be a great investment.			X		X	2	2				
IWM - New technology for weed management for resistance and saving out of season rainfall; Long term results/comparison of harvest weed seed management/IWM methods and machines				X	X	2	1	5	3	5	

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Lupin agronomy, revisiting chemistry and alternative weed control strategies particularly blue lupins. Lupin agronomy for yield needs to massively improve. This is resulting in a drop in the area of white lupins growing for canola with more diseases. What are the major causes of low % lupin germination and low vigour			X		X	2	1	2	1		
Purchase and maintenance of machinery. Is machinery heading more towards constant updating technology at the cost of reliability?			7		X	2	1		3	2	
Soil testing and characterisation. Soils with high PBI - can we unlock nutrients; Correlating this with DGT. Potassium: Understanding testing and responses.		X			X	2	1				
Frost agronomy and genetics - Better knowledge on being able to determine whether a crop as been frosted (much earlier than previously). Is there any correlation to the amount of potash applied and frost damage? Potash in plants and stem thickness in resisting frost. Frost - better varieties, and better prediction models. Frost! Breeding frost tolerant genetics. Do wheat and barley varieties differ in their response to frost? Give us ratings in the variety guide. Also further work needed on frost in canola	X	X				2	3	5	1	7	5
Heat and drought tolerant cereals. Focus seems to have been on frost but equally costly at the other end of the season. Some great scientific work being done on heat stress at flowering reported in GroundCover the other month. Can we get some sort of rating in the Wheat Variety Guide?			X	X		2	0	2			
Fungicide use: Late season fungicides on wheat (first sign of grain formation in the head) and the effect on both yield and quality. Yield and quality response curves for different timings of new generation fungicides in a high yielding situation (+5t/ha). Also issues with aerial application of fungicides		X			X	2	0				

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Soil acidity - measuring the economic response to liming as well as looking at other options for neutralizing soil pH (eg further testing and identification of products). Deep placement of lime. Addressing pH in subsoil. Seeing pH 6 plus in top 10cm then plummeting to 3.8-4.5 at 20cm. Economics are undefined: We've got the same issue. Need to incorporate lime efficiently at depth (20-30cm). Morrell lime sand testing. Further economics of soil amelioration in the LRF zone and lime incorporation options in windy environments. Investigate varietal differences for things like Al tolerance, N useage, frost tolerance etc in all crops.				X		1	2	3	2		
Crop breeding work and development; short season barley; early season wheat; OP canola; break crop option for heavy soil; Long season milling wheat; barley varieties for northern ag region			X			1	2	2	3		9
Staffing issues, sourcing good quality staff and retaining them. Impacts on timing of management, seeding and spraying. It is constraining farm business profitability and expansion. Farm managers very over-worked. Do a cost analysis on autonomous units, the use of drones, do case studies on people using new technology.					X	1	2	1	1		
Improved strategies and agronomy to assist with dry seeding and early establishment of canola in non-wetting sands and some other soil types. Profitability and resilience					X	1	2	1			
Era of dry seeding - but we somehow need to beat the weeds. Weed control with a focus on pre-emergents. Early sowing agronomy packages: Herbicide package research and extension (products, rates, and applications in sometimes dry, warm autumn conditions) for early sown crops (canola, winter wheat etc). Lack of early sowing opportunities through the risk of frost and heat at the end of the year				X		1	2				

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Social licence: Protecting our markets and keeping our image positive. What is GRDC doing in the 'social licence' area? Are there plans to build awareness of agriculture in the metro areas? Media training for farmers, grower group staff so we have people in the field to turn to			X			1	1	2	2		
New technology and data: using it in paddock better - including on-farm connectivity. Revisiting new technologies of today on connectivity eg wifi. Crisp wireless.				X		1	1		2		
Seeding gear set-up including strip and disc systems			X			1	1				
Oat agronomy especially oat weed management including IWM packages; and breeding for what the consumer wants - shorter season varieties.	X					1	1	1			
Management of shallow sodic duplex clay to increase WUE. 9 Are there other more efficient ways to displace sodium on sodic soils than Gypsum?		X				1	0		1		
Business management: Determining the most limiting factor and risk associated with it. Build resilience in farming businesses to allow them to withstand retirement/education commitments etc in low income years					X	1	0		1	10	1
NVT trials - better clarity. Canola trials further east than already done. 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?	X					1	0		1		
Low rainfall agronomy trials to explore more suitable agronomy for this area. We are not chasing big yields, just margin. Identify new or existing fodder crops/varieties/species suited to LRF zone which can be grazed then potentially produce hay or grain				X		1	0		1		
Image analysis with integrated harvesting equipment - Weeds (in paddock spectrum - resistance ), snails, grain quality - staining etc.	X					1	0				

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Root lesion nematodes. How to manage if you have more than one species in a paddock.	X					1	0				
Tracking herbicides: 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?	X					1	0				
Root disease: With cereal on cereal rotations increasing in popularity cereal root disease is also increasing. We need to understand the best way to address this constraint. How much of an effect does cultivation have, does it outweigh the loss in soil structure and moisture.		X				1	0				
Climate change debate. Can GRDC provide figures on actual emissions? Are farmers carbon neutral because grain farming is capturing carbon?			X			1	0				
Developing leadership and capacity in the farming community. Increasing scrutiny on ag, highly developed technical skills, need development of 'soft' skills both from a in the farm/industry business perspective and a whole industry perspective					X	1	0				
Long term system management trials. Farmers 5+ years down CTF continuous cropping Nil livestock and full stubble retention are achieving incredible results. We need to quantify this benefit against typical wheat sheep matches and non CTF system. This is inclusive but not limited to strip and disc. Feedback that there is a 20 yr trial site at Cunderdin conducted by WANTFA which will provide info on this.				X		1					
Short season wheat and barley agronomy trials similar to a late sown NVT, to allow for options around late start, or waiting for a germination at the end of the seeding program. Expansion or growth of the area best practice variety trials to replace some NVT sites				X		1					

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Crown rot is a big problem in the eastern wheatbelt with the heavy soil types - perhaps more work/extension on the varietal tolerance of wheat and barley				X		1					
Surface and sub soil water management. Sub-surface draining? Tile drainage systems?						0	1	1	2		
Snails contaminating grain, particularly canola. Cleaning technology? Snail rollers? Why are CBH standards twice as tight at eastern states?						0	1	1			
Engagement of young people in agriculture in schools, especially in the city. Huge need for better general education and to attract young people into careers in grains industry. We need to engage with the education dept so that the barriers that have been put in place are reduced or eliminated to allow this to happen.						0	1	1			
Best practice N strategies particularly around protein. Nitrogen timing, type and balancing the return in difficult years, not only dry but waterlogging. More N x K work as N on its' own can be a waste. Are the response curves still right?						0	3	1	3	1	
MRLs, managing our farming systems better, and overuse of chemicals						0	3				
Net blotch of barley, resistance management. Also, revisit low rainfall zone net blotch control costs and options. Suggestions it is not always economic						0	2	2			
Sprayer calibrations and workshop/audit to provide most effective and sustainable use of chemicals						0	2	1			
Chemical control options for late germinating ryegrass (and radish for Geraldton) in all crop types.						0	2		3		
Variable rate technology - particularly weed seeker, green on green and fertiliser and RO						0	2				
Soil constraints and effect on nutrient uptake. High yielding package for cereals after soil constraints have been addressed. The ability to test crops in real time for added nutrient application to maximise yield gain						0	1	4	1		

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Weather forecasting and seasonal outlooks. Seasonal rainfall has a major impact on profitability. Better weather forecast that allows to play the season would improve profitability						0	1	2	2		
Non-mechanical solutions to soil constraints such as deep rooted plants etc						0	1				
Improving crop germination and establishment of all crop types						0	1				
Management and selection of winter crops to manage crop development better and take advantage of March April germination opportunities						0	1				
Stored grain management and phosphine resistance issues						0	1				
Biological integrity of soil. Chemical accumulation ie imi chemicals etc						0	1				
Harvest loss in canola must look at more than loss out the back of header ie losses from swathing and or draper fronts vs tin fronts						0	1				
Increase availability of OP/TT canola. Too much emphasis in the hybrids and RR segment which can be too risky in marginal areas.						0	0	1	2		
Stubble management that maintains soil cover. High stubble load management with particular reference to what happens to nutrition; ground cover impact; spray efficacy; and seeding operations						0	0	1	1		
Autonomous vehicles - legislation, telecoms and employee/HR training and skill sets						0	0	1	1		
Weed issues after deep ripping. How does cultivation and deep ripping move weed seeds in the profile and does it reduce efficacy of pre emergent weed control?						0	0	1	1		
Weed competitiveness of new cereal varieties. Include this info in variety guides						0	0	1			
Management of Green Peach aphid going forward to preserve our chemistries while achieving good control						0	0	1			

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Harvest loss measurement in cereals and lupins? This has been done in canola with Pete Newmans RCSN 'Canola harvest loss project'						0	0	1			
Implications of the new uses for 2,4-D. How is this going affect weed control option both for summer spraying and in crop situations						0	0	1			
Summer weed management						0	0		2	6	
Reaching our top water use efficiency						0	0		1		
Most effective option to invert/mix soils for non wetting?						0	0		1	8	
Improving diversity - Revisiting previously grown crops in the northern regions						0	0		1		
Sclerotinia in lupins						0	0		1		
Reduction in overheads - better use of inputs through genetics/varieties						0	0		1		
Amelioration on heavy soils (range of heavy soils, grey clays, shallow sodic sub duplex).						0	0		1		
Stubble management - reduction of burning, frost management, weed control.						0	0		1		