

GRDC Regional Cropping Solutions Network – South

Issues (opportunities and constraints) which have the greatest impact on the profitability of growers in the high rainfall zone of the Southern Region

February 2020

Rank No.	Title
1	Reliable supply of canola seed - is F2 canola an option?
2	Identify and develop high value grain crops to complement existing common crops
3	Emerging potassium (K) deficiencies in crops and interactions with other elements - what is the best practice approach (4Rs)?
4	Opportunity to capitalise on the synergies for livestock and cropping enterprises and increase whole farm profit
5	Spatially specific (real-time) assessment data to better inform in-season nitrogen (N) decisions in high rainfall environments
5	Enhanced accuracy of nitrogen (N) management decisions
7	Poor harvester efficiency (including grain loss) is impacting on profitability
8	Risk with limited stock of canola (no seed supplies)
9	Improved management packages for multi-herbicide resistant annual ryegrass
10	Understanding the potential for using straw either off farm (e.g. biofuels, biochar) or within paddock (e.g. stubble bio-digestion)
11	Develop new markets for broad and faba beans
12	Determine practices (rotations) to reduce the high input costs required to grow high yield wheat
12	Enhancing knowledge and skills of HRZ growers to characterise local soils (including at depth) and adopt appropriate management techniques
14	Technologies and tools e.g. probes for rapid real time in paddock measurement of the status of nitrogen and other nutrients
14	Ensuring long term cost-effective management of important HRZ foliar diseases by prolonging the life of fungicide and varietal resistance
16	Identification and control of soil borne diseases in faba, broad beans and pulse crops
17	Disease management package for sclerotinia, blackleg and powdery mildew in canola
18	Develop harvest and weed seed management techniques to deal with late germinating annual ryegrass
19	Need to use higher rates of clethodim to control ryegrass in canola
20	Develop new non-genetically (non-GM) modified canola varieties
21	Encourage soil testing and how to interpret results (growers and advisors)
22	More accurate weather forecasts
23	Accelerated development of waterlogging tolerant barley
24	Improved establishment of canola
25	Improved genetic resistance for Septoria tritici blotch in wheat and Scald in barley
26	Quantify the optimum yield and inputs to maximise the profit margin (for each grower)
26	Determine how optical sensors can be used profitably to inform decision-making
26	Extracting greater 'value' from spatially referenced data which is already being collected

- 26 Take the learnings and gaps from optimising canola profitability project and make them more specific to the high rainfall zone
- 30 Delay in growers gaining access to long season, Northern Hemisphere varieties is hampering productivity gains
- 31 Increasing labour demands with cropping systems
- 32 Increasing herbicide resistance in Wild Radish populations
- 33 Understanding the phenology and diseases of faba beans and extend to growers and advisors (to help explain the poor results in 2019)
- 33 Improved grain marketing through expanded or differentiated markets (faba beans and cereals) and greater grower marketing skills and advice to get a better price
- 33 Implications of variable rate lime applications
- 33 Limited choice of linseed varieties, including winter varieties
- 37 Improving phone/internet services/speeds in rural areas to enable access to services
- 38 Is the increasing use of neonicotinoid insecticides building up residues in the soil?
- 39 Growers not understanding and acting to minimise any unintended impacts on the environment through their use of N and P fertiliser
- 40 Maintain and enhance research and advisory capacity so growers can access independent advice
- 40 Managing farmer health
- 42 Identify the reasons for inconsistent nodulation (and subsequent yield loss) in faba and broad beans
- 42 Determine if cover crops have a profitable impact on soil health
- 44 Screen potential milling oat varieties which are adapted to the HRZ and available internationally
- 45 Determine sustainable and profitable management strategies of high volume stubbles
- 46 Extension on the use of precision agriculture (PA) tools - which tools are most appropriate for a particular situation (evaluate to remove confusion)
- 46 Insufficient information on the grazing value of faba beans
- 48 Commercialise effective pulse rhizobia for acid soils and identify and assess winter activity of rhizobia strains to improve nodulation and nitrogen fixation
- 49 Determine practices to alleviate chronic and acute waterlogging
- 49 Improving soil water holding capacity (WHC)
- 51 Yield stability of canola could be improved by selecting and developing varieties which have greater waterlogging tolerance
- 52 Develop a faba bean and broad bean agronomy package
- 52 Develop appropriate recovery strategies (mainly nitrogen application) for waterlogged crops
- 52 Identify the species, varieties and agronomy to grow a profitable summer crop
- 55 A more integrated pest management strategy needed to reduce the use of fipronil in canola and on a broadacre scale to effectively manage hard to kill pests
- 56 Gaining faster access to pesticides used in Europe and the United States
- 56 Agronomy and varieties to increase energy in grain (for domestic feed markets)
- 56 Herbicide package (what works and what's safe) to support the increasing adoption of disc seeders
- 59 Extend (to agronomists) the parameters around when or when not to spray for blackleg
- 60 No effective SPRING control tactics for slugs and snails to reduce harvest contamination and damage to following crops

60	Improved disease (chocolate spot and ascochyta) resistance in faba beans
62	Manage subsoil (5-15cm) acidity on land with good surface lime application history
62	Technologies and tools to detect and quantify frost damage and variation across a paddock to enable earlier and better informed decisions
64	Conflicting information on the quality and response of natural versus recycled gypsum
65	Approaches to improve poor water use efficiency (WUE) e.g. hyper-yields and 3 crops in 2 years
66	Waterlogging tolerant canola varieties which are adapted to high rainfall environments and early maturing than Hyola 970CL are developed and available to growers
67	Early prediction of disease outbreaks in pulse to inform fungicide management decisions
67	Homogenisation (clustering) of land, rainfall and environmental influences in the high rainfall zone is missing (masking) the diversity across the region (when undertaking analysis)
69	Understand the opportunities for delving or ripping on sandy soils
69	Quality control over data entered into On-line Farm Trials
71	Develop practices to reduce electricity costs in irrigation
72	Freight costs to deliver grain and supply crop inputs limits the profitability of growers on Kangaroo Island
73	Lack of grower attendance at local events
74	No (accessible) local source of gypsum to ameliorate sodic soils on Kangaroo Island
75	Quantify the impact of powdery mildew on canola yields in the Lower SE of SA, Tasmania and Gippsland
76	Identify a 'pillar crop' to build a sustainable and profitable farming rotation
77	Renewable or alternative nitrogen (N) fertilisers
77	Managing animal health issues of livestock grazing annual clovers
79	The pros and cons of disc seeders versus tyne seeders
80	Corellas or white cockatoos are a damaging pest which affect crop establishment and can cause up to 70% yield losses in windrowed canola
81	Scattered paddock trees limit the application and efficiency of tools and technologies e.g. controlled traffic, chaff-lining
82	Opportunity to use aerial seeding for relay cropping. e.g. aerial sowing millet and/or rape into wheat crops
82	Carbendazim for snail control - does it work, maximum residue limit (MRL) issues and registration of use patterns
84	Enhanced spray application to increase efficacy in wet and/or bulky crops
85	Understanding the causes of low tillering of soft wheats to help bridge the yield gap
86	Feasibility of alternative sources of nutrients e.g. waste water and bio-solids from cities
87	Potential to use plant growth regulators (PGR) for crop canopy management and grain quality
88	Development of non-genetically modified (non-GM) crops for yield and enhanced management options
89	Register existing chemicals for use with shielded sprayers
90	Method to calculate nitrogen (N) loss when soils are above field capacity
91	Understanding how climate change will affect the incidence of waterlogging
92	Opportunity for alternative and greater range of crops to be grown under irrigation and/or as summer crops in the Port Campbell to Heywood area which might include options similar to those grown in the SE of SA and Tasmania e.g. seed production and seed bulk-up for the Northern Hemisphere, poppies etc.
93	Improved management of water and including nutrients and chemicals - conserve moisture and limit runoff
93	Value and response of phosphites (bio-stimulant) which is being used in Europe

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| 95 | To build upon the clean and green image of Kangaroo Island by introducing tracking and recording systems for niche or speciality markets |
| 96 | Managing drainage beyond the farm gate |
| 96 | Opportunity to develop local livestock feed and additional niche markets to increase the profitability of growing grain on Kangaroo Island |
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