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With so much subsoil moisture available after the summer rains this year, many growers have taken the opportunity to start seeding, with some canola going in the ground in late March. Many of these growers are now seeding in earnest and some of the early seeding research work initiated through Regional Cropping Solutions Networks (RCSN), coupled with Flower Power and other tools, can provide some interesting information on potential yields and risks.

Some RCSN-initiated early see ding work in the western region in 2015 and 2016 shows canola in particular can benefit by being seeded early - though not too early! Department of Agriculture and Food (DAFWA) research officer Martin Harries, who is working in GRDC's Tactical Break Crop Agronomy project, addresses the question of 'how early is too early' in this newsletter. RCSN work led by ConsultAg's Geoff Fosbery showed that if end-of-season drought is not an issue in your area, create at least 20 days difference in maturity per variety by spreading out seeding time. Some more information about Geoff's work can be found on the RCSN website.

The RCSN initiative is again running open meetings in July and August, with three meetings being held in each WA port zone. It's your chance to meet up with Western Regional Panel members and GRDC staff to talk with us about issues impacting on your farming business, and it's our chance to say hello and let you know where GRDC is investing levy payers' money. So make sure you come along to one of these meetings and enjoy GRDC's hospitality. Dates will be available soon.

Good luck with seeding this year!

I hope you find this edition of the RCSN newsletter interesting. I'd love it if you forwarded this newsletter to friends, or you can contact me for news and information about the western RCSNs - Julianne Hill: 0447 261 607, email, or Twitter.

Outcomes and results from RCSN-initiated RD&E projects, final reports and information about RCSN activities can also be found on the group's dedicated RCSN website and through the GRDC's Online Farm Trials (OFT) website.

Around the RCSN Port Zones

Albany port zone RCSN - Delivering a crushing blow to snails

Small conical snails (Prietocella barbara) can cause significant damage to germinating crops, especially canola, and research is underway in the Albany port zone to find the best control tactics for this pest.

Past research has found a mix of cultural and on-farm practices, such as windrow burning and weed control, coupled with well-timed baiting programs can provide effective snail management.

To improve the efficacy of baiting programs in the region, the Albany port zone RCSN group has initiated a project by the Stirlings to Coast Farmers (SCF) group and DAFWA to compare rainfast and non-rainfast metaldehyde bait products versus no baiting.

Small conical snails are the primary target and the trials are being carried out on three soil types using four bait application times.

Baiting before egg laying, while snails are mobile and seeking food, is critical to stop their lifecycle and - at a potential cost of between $15 and $85/ha - it is important to get the timing and application right.

Past research indicates baiting can be economical if pre-seeding snail numbers are more than 40/m2 in paddocks to be sown to cereals and 20/m2 in paddocks to be sown to oilseeds.

More information about snail control strategies can be found in the *GRDC Snail Management Fact* Sheet.

To hear more about a range of Albany RCSN port zone priority issues and activities, see a video of group member Scott Smith.

CAPTION: Grading snails out of canola grain at harvest is a frustration for growers in the Albany port zone, but necessary to meet receival standards and a priority RD&E issue for the local RCSN group. PHOTO: Julianne Hill

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Kwinana East port zone RCSN - Showcasing strategies to save soil moisture

RCSN Kwinana East port zone group members have consistently identified soil water conservation, crop water use efficiency and managing variable rainfall as high priorities in this region.

To investigate a range of tactics being trialled and adopted on-farm by local growers to address these issues, the group initiated a case study booklet called *Managing Soil Moisture* that has recently been released.

Available on the RCSN website it profiles 10 growers and advisers.

The case studies explore practical ways to optimise the use of available soil moisture and reduce risks in an environment of increasingly fluctuating rainfall and highly variable soil types.

Tactics include: summer weed control; methods and models to measure soil water holding capacity; use of real-time data to quantify change and help with decision-making during the growing season; paddock preparation and crop management to increase the soil water ‘bucket’; and use of fallow periods.

Across the Kwinana East region, there has also been increasing interest in trialling new soil technologies, such as soil moisture probes (SMPs), crop modelling and prediction tools such as Yield Prophet® and alternative summer weed control options. The booklet explores some of these developments.

To find out more about other Kwinana East RCSN port zone priority issues and activities, see a video of group member Darren Kilminster.

CAPTION: Mick Caughey, of Merredin, is featured in an RCSN Kwinana East-initiated case study booklet called Managing Soil Water. It outlines strategies being used to conserve stored soil moisture for increased crop production. PHOTO: GRDC

Kwinana West port zone RCSN - Rolling out machinery survey results

Crop machinery investments vary according to a combination of strategy, attitude and economics.

That has been a key finding from an RCSN-initiated project exploring how Kwinana West port zone growers make machinery investment and replacement decisions and divide-up capital expenditure budgets.

Carried out by agricultural engineer and Kondinin Group research manager Ben White and Chris Warrick, also of the Kondinin Group, it involved interviewing more than 55 growers across the central grainbelt.

Preliminary results show the growers surveyed had on average $1.37 million invested in farm machinery, or about $362 per hectare.

Ben says this represents about 66 per cent of average gross farm income (based on an assumed wheat price of $250 per tonne).

He says, on average, the growers surveyed in the Kwinana West port zone allocated:

- 31 per cent of total machinery investment on seeding equipment
- 26 per cent on spraying equipment
- 25 per cent on harvesting equipment
- 9 per cent on trucks and 9 per cent on ‘other’.

Triggers for machinery replacement were highly variable but commonly included maintenance costs and number of machine hours.

Ownership models included: leasing versus owning; running machinery for longer periods; and having two or more pieces of similar equipment.

Case studies will be prepared to illustrate in-depth examples of the range of machinery replacement strategies being used in the Kwinana West region.

Go here to see a short video of Ben explaining more about this project.

GRDC also has a new Farm Business Fact Sheet called *Cost effective investment in machinery*.

And to find out more about other Kwinana West RCSN port zone priority issues and activities, see a video of group member Ty Fulwood.

CAPTION: Ben White, of the Kondinin Group, is investigating machinery investment decision making as part of an RCSN Kwinana West initiative. PHOTO: GRDC

Esperance port zone RCSN - Seeking VRT solutions

West River grain grower Peter Kuiper farms 250 kilometres out of Esperance and 250km from Albany, so finds it difficult to get technical support for technology implementation and ongoing use.

He and wife Tamara made substantial investments into electromagnetic (EM) mapping of paddocks a decade ago, but then felt they were not optimising the value of this data because of a run of lean years and a lack of machinery that could work with VRT at the time.

In recent years, with better seasonal conditions and the purchase of another farm, the Kuipers have revisited VRT and are now varying rates of gypsum application based on three soil type ‘zones’ that receive either four, two or 0.5 tonnes per hectare.

In 2016, they bought a drone and believe this type of technology may have big potential in future for varying herbicide and other input rates based on aerial imagery.

The Kuipers are also looking at satellite-based tools, such as Google Earth maps, which may indicate differences in soil types that can allow them to easily and quickly draw rough zone maps.

Peter and Tamara's operation features in a new booklet of case studies initiated by the Esperance and Geraldton port zone RCSN groups called '*Variable Rate Technology: Maximising returns for Western Australian grain producers*'.

The case studies explore a range of VRT systems that are being adopted in each region, at a range of complexity levels, and highlight the benefits of keeping things simple. The booklet also includes practical advice from a range of VRT advisers and specialists.

To find out more about a range of Esperance RCSN port zone priority issues and activities, see a video of group member Peter Daw.

CAPTION: West River grower Peter Kuiper is considering VRT to boost crop productivity and is featured in a new Esperance and Geraldton port zone RCSN-initiated case study booklet. PHOTO: SEPWA

Geraldton port zone RCSN - Breaking down the profits of crop sequences

RCSN Geraldton port zone member and Chapman Valley grower Jason Stokes says having diversity in crop sequences and farm enterprises reduces risks, improves potential profit rewards - especially in very low rainfall years - and helps justify the expense of full-time labour.

He and his family feature in a new GRDC publication called Break Crops and Rotations of Western Australia that focuses on what, if any, break crop or pasture is working best on-farm and how competitive gross margins can be with wheat. The booklet was initiated by the Geraldton and Kwinana East RCSN port zone groups and contains 19 grower case studies.

GRDC has had a significant investment in break crops and rotations across WA. But many growers are still seeking to find the optimal agronomic and economic sequences, especially as canola has not been performing as well as it should be - or providing the disease break it once did - in recent years.

Through this project, there is on-farm analysis of the costs and benefits of a range of relevant break crop options, including fallow versus pasture, versus lupins, versus canola and other options.

Depending on soil type and landscape, the Stokes use typical rotations of: biserrula-wheat-canola-wheat; wheat-canola-wheat-lupins; and wheat-wheat-lupins.

Big tracts of land that are not efficient to crop annually are typically used to run sheep and then cropped every four to five years, often with oats or barley.

The over-arching aim is to plant wheat on to non-cereal stubbles for disease and nutrition management. This means the cereal follows either canola, lupins or a legume pasture.

As a result, the family has invested heavily in trying a range of new pasture species to find those that will self-regenerate and cover any stock feed gaps.

Read more about the Stokes and other case studies by following the link here.

To find out more about a range of other Geraldton RCSN port zone priority issues and activities, see a video of Jason Stokes.

CAPTION: Jason Stokes, of Chapman Valley, features in the Geraldton and Kwinana East port zone RCSN-initiated case study booklet '*Break Crops and Rotations of Western Australia'*. PHOTO: GRDC

Hot topics for April

RCSN member perspective on GRDC Grains Research Update, Perth

Grass Patch grower and Esperance RCSN member Leon Bowman provides an insight into topical issues relevant to his port zone presented at the recent GRDC Grains Research Update, Perth:

Watch the video here.

Watch that weed - RCSN prompts silver grass study

An RCSN-initiated project carried out by ConsultAg agronomist Trent Butcher has found WA growers will need to be vigilant in preventing the development of triazine (Group C) resistance in silver grass.

Trent recommends growers explore the use of herbicides with alternative modes of action, consider carefully the timing of spray-top operations in crops and pastures and test suspicious weed populations for resistance.

He says extensive use of simazine to manipulate clover-based pastures and the popularity of triazine tolerant canola crops means silver grass is under high selection pressure from Group C herbicides.

His study aimed to identify the extent of triazine resistance in silver grass in the medium-to-high rainfall, mixed cropping zone, and identify any obvious trends in the weed's resistance status and triazine use patterns.

More information about his project can be found on the RCSN website.

Make a plan to manage frost in 2017

Pre-seeding planning is an important part of frost risk management and agronomist Garren Knell's advice to growers is to make assessments paddock-by-paddock. This should be based on historical records, experience, position in the landscape and soil types - and, once identified high-risk areas should be mapped and managed differently from other areas.

He told the GRDC Grains Research Update, Merredin, that when choosing crop types and varieties for high risk areas, it is worth considering longer season barley and wheats, and mixing wheat varieties within and between paddocks.

Spreading out the sowing program is also important - Garren says it is important not to miss an early sowing opportunity, but this doesn't necessarily mean the whole seeding program needs to be finished by May 15.

Diversity in the farming system - whether that's sheep, canola, hay or oats - will ensure all the eggs are not in the one basket and help mitigate the risk.

Information about tactics to manage spring frosts and links to useful resources are available in the GRDC Tips and Tactics publication *Managing Frost Risk*.

Agronomy guidelines for early sown canola

Through the GRDC's Tactical Break Crop Agronomy project, DAFWA research officer Martin Harries has been investigating agronomic management for canola that is sown very early.

His trials in 2015 and 2016 (at Binnu and Wongan Hills) found there was a significant yield benefit of about 40kg/ha/day from establishing canola in mid versus late April. But the extra benefit of sowing in late March versus mid-April was less - at about 10kg/ha/day.

Martin says there are also climatic and agronomic risks to weigh up when thinking about very early sowing of canola.

Key points from his research are outlined in a short video and his Grains Research Update Paper can be found here.

Managing agronomy for recently-released oat varieties

DAFWA research officer Georgie Troup provided updated oat agronomy advice to the 2017 GRDC Grains Research Update, Perth - specifically focusing on Durack, Bannister, and Williams.

Bannister was the best performing in her GRDC-funded 2016 trials, out-yielding other varieties by up to 1.1t/ha on average and meeting Oat1 grain quality standards across six sites set up in high and lower rainfall zones.

But she says, in higher rainfall areas, there is a need to plan for management of diseases - such as septoria - which leads growers to other varieties like Williams that have improved septoria resistance.

Georgie's Update paper can be found here and click here to view a a short video of her key messages.

Legume break-crop options explored

DAFWA research officer Mark Seymour has been exploring options for lentils, field peas and beans in parts of WA. This comes on the back of increasing interest by growers in pulse break crop options to complement canola and lupins.

Mark provides some key findings from the 52 field trials conducted across the State in 2016 in a short video here.

He says that in the Esperance area in particular, lentil and faba bean crops performed well - producing excellent biomass and seed yield.

Keep an eye out for...

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For the latest Western region **Fact Sheets** click here.

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