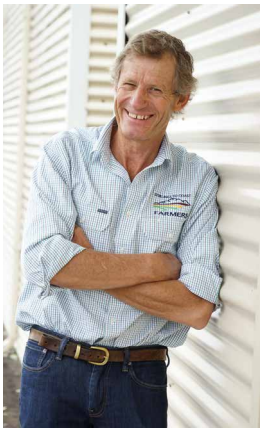
SCF Focus

STIRLINGS TO COAST FARMERS

SPRING 2020 NEWSLETTER

In this issue

STIRLINGS TO COAST FARMERS



JOTTINGS FROM THE CHAIR

Ken Drummond, SCF Chair

Welcome to Spring, SCF members, what a ride 2020 has been so far! I wonder what else is coming? One thing for sure is to expect the unexpected, just when you think you have seen it all something new pops up. Making the right decisions has been a challenge, who would have thought we would be saved by a rain system coming up from the SE, they normally come at Harvest time.

Operation Care was perfect timing with a perfect result, Nathan has given you a summary on a fantastic initiative by SCF, the party was a blast. I would like to thank my family - Karen, Harriet, and Tara - for doing the food. We had an informative Friday morning looking at confinement feeding, thanks to the WAP Co-op and SCF for organising the event. Big thank you to Jason and Mandy Griffith for hosting, they are lifting the bar on sheep production. Lambing down under confinement really opens another level of production. Also thank you to Aaron Davis and family for showing us over their impressive desalinisation system. This event was very pleasing to me as SCF was founded on members looking after each other. It is not enough to ask if you are ok, following up and doing what is appropriate is important.

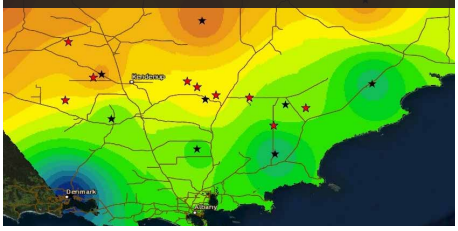
As you can see in this newsletter Nathan and the team at SCF are leading the way in digital technology. There is so much on offer it is difficult to keep up with, having SCF sort the chaff from the wheat is going to make our farming easier. On behalf of our membership I would like to thank our staff for making SCF so progressive.

I would like to welcome our new member, Hanna Iffla, I hope the ride is fun.

As you can see there is excellent participation by SCF members on our Committees, thank you, your input is appreciated. The SCF board are looking for new board members also, preferably from the East side of our membership.

SCF is losing our very valuable independent Board member Ian Even's under circumstances no family should have to bear. Thank you, Ian, for your experience, patience, and guidance, you have put SCF on a firm footing. We wish you and your family closure and peace.

Yours faithfully



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CEO REPORT

Nathan Dovey, SCF CEO

Welcome to the Spring edition of SCF Focus for 2020. Although Covid-19 is still with us, it was pleasing to receive widespread rainfall across the region in early August. At least one major worry is off our minds for the time being. Who knows, maybe by the time our summer newsletter comes out there will be some good news regarding Coronavirus too? We can only hope.

In early July, our chairman Ken Drummond acted on member recommendations to investigate how we could acknowledge farmers east of Albany, who were experiencing another very challenging season. The very next day, Ken met with Rick Chadwick (Wellstead Store) and other community leaders discuss the options.

It was decided that a morale-boosting party would be the best thing for the community, where whole families could get together to have some fun. 'Operation Care' was hatched, and the party at Boxwood Hills Sporting Club on the 24th of July was a roaring success. People came from far and wide to socialise with farmers and agricultural stakeholders from across the industry. Thank you to Rick and Dawn Chadwick plus Ken & Karen Drummond for their monstrous effort in pulling this off. SCF would like to thank the local businesses that contributed cash donations to the event; the response was swift and seamless.

The best news came a week or two later when the storms bought widespread rainfall across the region, which has transformed the season for many and put much-needed water in dams. Here's hoping the rain keeps coming until harvest time!

September is a hectic time of the year for any grower group in WA. Spring means field day season, and we have four significant SCF events coming up.

- Annual Spring Field Day- the 24th of September at Kendenup Golf Club
- David Gray's Fungicide and disease field walk on the 30th September at South Stirlings (Morning)
- Hyper Yielding Crops- the 30th of September at Green Range (Afternoon)
- Livestock 2020- October 22-23rd at West Kendenup and the Albany Entertainment Centre

Please lock in the above dates if you have not already. 'Livestock 2020', co-hosted with the WA Producers Cooperative, looks like it will be a cracking event over the two days. The half-day event on the 22nd will be hosted by the Slade family, which will demonstrate a heap of ag technology and equipment. We will have sheep handlers, pasture & forage crop demonstrations, eID equipment and plenty more. The following day will be at the Albany Entertainment centre with presentations on containment feeding, use of satellite technology to measure FOO, farm water security and improving lamb meat eating quality. Keep an eye out for the program in the coming days.

Do not forget the spring field day on the 24th of September based at the Kendenup Golf Club. We will spend the morning inside before heading to the field in the afternoon. We are very excited to secure Dylan Hirsch, a farmer from the northern Wheatbelt who completed a Nuffield Scholarship in 2018 on "Managing Seasonal Weather Risk Using Financial Instruments" as a guest speaker. Dylan will tell us what he learned during his Nuffield, as well as his experiences with soil amelioration on his farm farm.

The Hyper Yielding Crops field walk will be an afternoon event on the Smith's property at Green Range. The season has not been favourable for hyper yielding crops, but there are still many valuable lessons to be learned.

The SCF team look forward to catching up with you at some of the events mentioned above. Please help us out by RSVP'ing to events when you plan to come along. It helps us manage the catering and other aspects of the days. Until then, please stay safe and I hope the season finishes as favourably as possible.

Nathan Dovey

SCF CEO

Follow SCF online!

Search Stirlings to Coast on these platforms and visit us @ scfarmers.org.au:

YouTube

SCF Podcast is here!

The latest SCF podcast is out now!

SCF Smart Farms coordinator Philip Honey discusses Smart Farms technology applications with Craig White, Market Development Agronomist at Bayer.

Phil and Craig talk about the practical application of Soil moisture probes, rain-tank sensors, Multi-Year Standardized Analysis of yield data, nitrogen management and sub-surface drainage.

Head to soundcloud.com **& search Stirlings to Coast to listen now!**

Its that time again - SCF Spring Field Day!

9:30am Kendenup Golf Club – Beverly Rd, Kendenup

Join key Speaker Dylan Hirsch, Nuffield Scholar and Latham grain grower.

Demonstration visit to the SCF Hyper yielding Cranbrook site and sub soil drainage project. Plus see the latest Wheat and Barley varieties releases at the Kendenup NVT site.

Sundowner bbq and drinks from 5pm

Register online now at eventbrite.com.au **and search SCF Spring Field Day.**

EVENTS NOTICEBOARD

WA CROP TECHNOLOGY CENTRE (ALBANY)

You are invited to attend the 2020 WA Crop Technology Centre (Albany) Field Day featuring Hyper Yielding Cereals and the WA HRZ Farming Systems project

Wednesday 30th September 2020
631 Kojaneerup West Road, Green Range, WA 6328
(courtesy of our host farmer Scott Smith).

Led by FAR Australia, the GRDC's new Hyper Yielding Crops (HYC) initiative is a four-year investment spanning five states – Western Australia, Victoria, South Australia, Tasmania and New South Wales. Now underway, this project aims to push the economically attainable yield boundaries of wheat, barley and canola.

The HYC initiative involves five research centres, and attached to each of these are five focus farm paddock trials and an innovative grower network charged with taking research and development learnings from small plot to paddock scale.

Through this new investment, high yield potential cultivars suited to local environments will be identified and the most appropriate agronomic management tactics – including paddock selection and preparation, canopy management, disease, weed and pest control, and crop nutrition strategies – will be explored to assist grower and adviser decision making.

SO WHY COME ALONG?

This not to be missed event will provide you with an opportunity to view the in-paddock trial work where this season the main focus of the HYC project is on barley:

- Demonstration of new European winter barley varieties alongside our traditional spring varieties.
- How hard should we push our management practices given this season is a decile one?

You will also have the opportunity to see how winter and spring wheat varieties are performing on both clayed and un-clayed soil as well as screening of new wheat germplasm in the region as part of the GRDC funded HRZ Farming Systems project.

A full programme outlining speakers and timings will be announced mid-September. To be kept up-to-date follow us at:

@far_australia @faraustralia

To underpin the "whole community of interest" concept, a HYC awards program is being established. It is hoped that the HYC awards will encourage everyone with an interest in increasing productivity to get involved. Farming group Project Officers across the country are seeking nominations of 10 wheat paddocks per region for the HYC awards – 50 in total – to enable growers to benchmark the agronomic performance of their crops.

The HYC awards, Focus Farm paddock strips and the innovative grower network involves TechCrop working with the Centre for eResearch and Digital Innovation (CeRDI) at Federation University Australia and farming groups across the country. **WA Project Officer for Stirling to Coast Farmers are seeking nominations of 10 wheat paddocks for the HYC awards in the Albany Port Zone, please contact Phillip Mackie on 0437 120 891 or email phillip.mackie@scfarmers.org.au to find out how you can get involved.**

Please contact event coordinator Rachel Hamilton for further information
Ph: 04 2884 3456 | Email: rachel.hamilton@faraustralia.com.au

@far_australia @faraustralia

The GRDC HRZ Farming Systems Project is led by DPIRD in collaboration with:

The GRDC Hyper Yielding Crops project is led by FAR Australia in collaboration with:

meet the members

Gary Walter

Region: Gairdner

Size of farm: 3000 hectares

Soil type: 4800ha. Range of soils with gravel over clay and duplex soils-

Year joined SCF: 2020

Type of enterprise: We are an all cropping enterprise

What are some of your biggest passions and why?

As an all cropping business I absolutely love harvest. Getting the end result in the bin, and being able to learn what did/didn't work that we tried that year. Also really enjoy getting involved in the community.

What are some of the most significant constraints to achieve higher productivity on your farm?

Non-wetting in the gravel soils has been a major issue in the last few years with dry Autumns. Salinity and snails are other big ones that we are trying to learn as much about as we can.

Is there anything that you do on-farm that is slightly different to the so called 'norm' that is interesting?

Not really. We are variable rating as many of our inputs as we can. Have just started a drainage plan to assist with containing salinity.

What technologies are you using on-farm? If so what is it and how has it shaped your farm?

We are variable rating potash pre sowing, and will be vr spreading lime and gypsum. Have also vr some nitrogen using ndvi this year to counter the mixed germination. Also use yield maps, aerial gamma and em surveying along with satellite imagery. Section control.

I believe using the tools can give us the best bang for our buck by getting our inputs where they are most effective and not wasting them in unproductive areas. It also gives us some good information so we can quickly learn the different characteristics and responses of the soil types of a new area.

Are you currently trialling anything yourself?

We have put in some ripper strips, we kept things simple for the farm move.

Is there anything that you would like to test or trial in the next 2 years?

We will be doing a lot more work next year on wetters, different input rates and responses and soil amelioration.

What do you think the next big thing in agriculture will be in 5 to 10 years?

I see Automation will increase in that period, as well as some great genetic gains with varieties and different cropping systems.

Do you attend any agriculture field days other than SCF?

We attend as many learning days as we can fit in with whoever puts on the ones relevant to our enterprise.

SCF Smart Farms Initiative Update

Philip Honey, Smart Farms Co-ordinator, SCF

Since our last update in the Winter Newsletter, the Smart Farms team have been busy installing some additional weather-stations and remote rain gauges throughout the membership base. These additional stations are placed at some of our key trial sites and strategic locations, in a broader aim to:

- Increase the value of data captured at trial sites
- Increase our operational efficiencies by removing the need to manually visit trial sites to collect climatic information
- In-fill some of the missing rain data points within our membership zone not covered by existing weather stations, and
- Help our members access weather data from a station typically closer to their farm.

SCF is committed to strengthening our weather network by adding an ag-tech component in all future trial proposals with our funding bodies, and we welcome our grower members adding stations to the network to help build more significant levels of forecasting accuracy and improve levels of on-farm productivity. Stay tuned to learn more about our rainfall variation mapping work and how you can get involved!

Recent Equipment Installations

SATELLITE REMOTE RAIN GAUGES

SCF has recently installed 3x GoannaAg satellite rain gauges in strategic locations in Woogenellup, Takalarup & South Stirlings. These quick and easy to install rain gauges clip over a star-picket, and report rainfall each time a satellite passes over the station. Being satellite-based, these units work where there is no mobile phone coverage at all. However, there is a trade-off, and this is the upload frequency. Currently, there are three satellites that pass over our rain-gauges each day, leading to 4 uploads per day. However, over the next couple of years, South Australian satellite company Myriota will be expanding their satellite fleet to 22, which will result in more frequent uploads for "real-time" rainfall tracking.

WEATHER STATIONS

Recently we've also installed 2x Metos 3.3 weather stations at the GRDC Sub Surface Drainage Demonstration (Cranbrook) and FAR Hyper Yielding (South Stirlings) Demonstration sites. These high accuracy weather stations consistently log and record climatic conditions such as temperature & humidity and rainfall, as well as log wind speed & direction and solar radiation. Leaf wetness sensors will be installed in the next growing season, which can be implemented into disease modelling services.

The Cranbrook Metos station will also be connected to two-soil moisture probes to measure "drained" & "undrained" soil water content in our GRDC supported Sub-Surface Drainage Project.

The importance of more weather data – A practical, local example!

Philip Honey, Smart Farms Co-ordinator, SCF

Each month, the WA Department of Primary Industries & Regional Development (DPIRD) & Bureau of Meteorology (BoM) typically produces a state or national rainfall map utilising more than 180 government weather stations across Western Australia. Whilst these maps are great to show general trends across the state's 25+ million-hectare grain growing area; unfortunately they do not show the actual rainfall variation across the state, with each station representing 142,000 hectares of agricultural land on average.

As we start to collect more rainfall data from more and more data points across the region over time, it opens the opportunity to map rainfall variation at a greater level and accuracy. These higher accuracy maps can later be utilised to measure the accuracy of rainfall predictions, soil moisture modelling, developing crop potential yield maps, or used in water use efficiency mapping when combined with yield data from a harvester.

STEP 1: MAKING A RAINFALL MAP

To make a rainfall map, we need to download the coordinates of the weather-stations involved, and the rainfall value for each station, over a selected time period.

In this case, we utilised the WA DPIRD Weatherstation network and the August 2020 rainfall values. We imported this into a mapping program and used an interpolation method to 'infill' the missing data between the DPIRD stations (the black stars) to create an effective rainfall map shown in figure 1. This map is most accurate right next to the black stars, with the values in-between estimated by statistical methods. Note: the way this data is generated to infill the missing places between the stars is based on the same principles as how to make a yield map!

Independent of this map, we can also show the location of all the SCF monitoring sites on the same map with red-stars, even though they weren't used in this map this time around, and look at a specific subset of our membership region for the next steps (the red square).

STEP 2: RAINFALL VARIATION - THE MORE DATA, THE BETTER!

Figure 2 on the right, is a zoomed-in section of the map we've just produced in step 1.... *But how exactly do we exactly know if this map is accurate?* The best way to statistically find out is to add in more data points into the analysis and test the accuracy.

To do this, we utilise the DPIRD August data, add in our SCF weather monitoring points, and create an in-filled map once more. By having more data included in the analysis, we increase the statistical accuracy of the map and have the ability to see the rainfall variation more effectively. A comparison of this is shown to the right where figure 2 is utilising the DPIRD only stations, and figure 3 is using both DPIRD and the SCF weather stations. *Note the drastic differences between the two images along Woogenellup, Chillinup, Pfeiffer & Kojaneerup-West Roads!*

As we have a known amount of rainfall at each of the SCF weather monitoring sites, we can use this to test the accuracy of the map we had produced utilising DPIRD only weather-station data.

For each of the red stars (SCF monitoring points), we can then measure the predicted rainfall amount directly from the map and compare it against what was physically recorded at the automatic rain gauge or weather station. On average across the ten SCF monitoring sites sampled, the rain gauges recorded 15.7mm less rain than what was predicted from the map, with a range of +12.4 mm to -44.7mm observed from predicted values at the 10 SCF sites.

Table 1 below displays some of the variation seen from recorded (actual) and the predicted (estimated) values. Generally speaking, we saw substantial shifts from the predicted values around the Pfeiffer Road, Chillinup Road, & the Woogenellup road areas, as lower-rainfall values against the predicted headed in a south-easterly direction. Interestingly, both the Mobrup station and our SCF/GRDC/FAR Hyper-Yielding Demonstration monitoring site in Kojaneerup South recorded above the predicted rainfall values, obtaining approximately 8-13mm above the expected values.

Table 1: Rainfall Variation levels (in mm) between predicted and actual readings at SCF WeatherNet monitored locations.

	August 2020 Total Rainfall (mm)		
	Estimated Rainfall	Actual Rainfall	Difference
Woogenellup - SCF Soil Probe Station 1	113.5	86.2	-27.3
Woogenellup - SCF Soil Probe Station 2	113.5	83.8	-29.7
Woogenellup - Woogenellup Rd (North)	114.0	101.6	-12.4
Kendenup DTN Station	90.7	72.0	-18.7
Cranbrook - Yeriminup Rd	92.8	67.6	-25.2
Mobrup Station	60.6	73.0	12.4
Kojaneerup South - Kojaneerup West Rd	136.6	145.0	8.4
Takalarup - Chillinup Rd	128.3	83.6	-44.7
South Stirlings - Pfeiffer Rd	145.0	126.5	-18.5
Perilup - Kwornicup Rd	112.2	111.0	-1.2

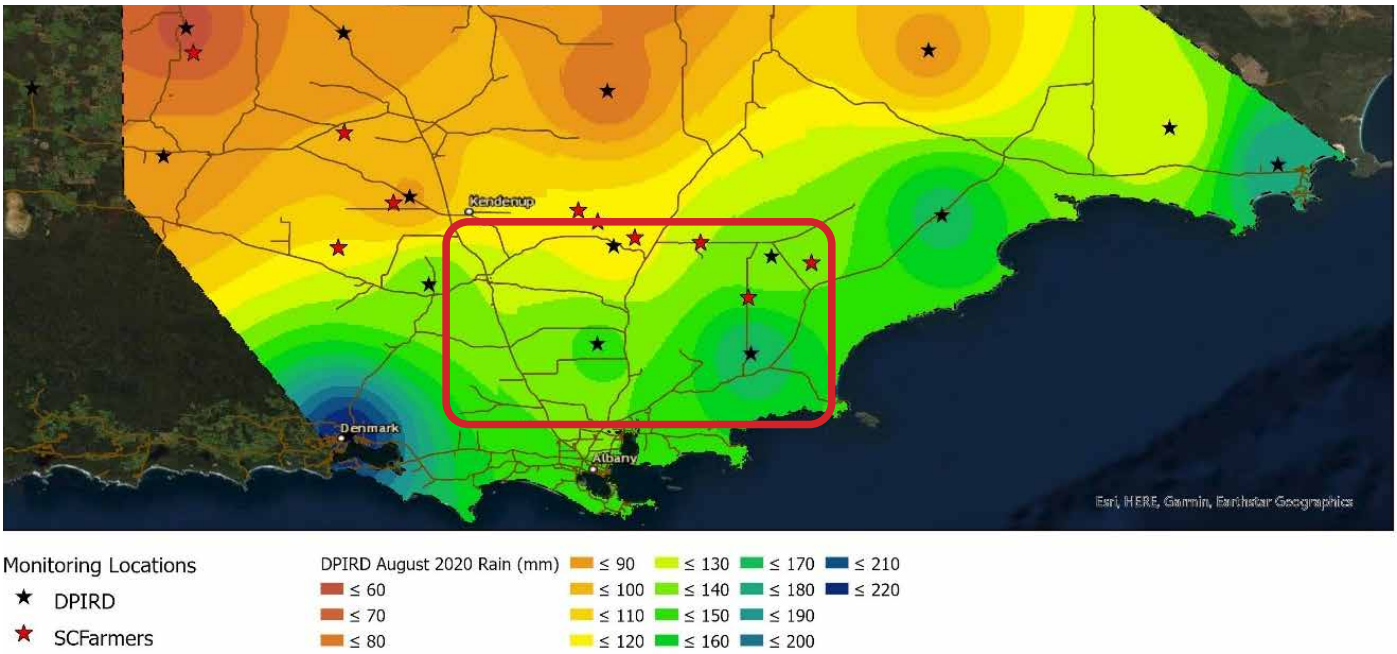

Figure 1: Total August Rainfall interpolated across the SCF membership zone utilising DPIRD weather station data, with an example region of interest which is later discussed.

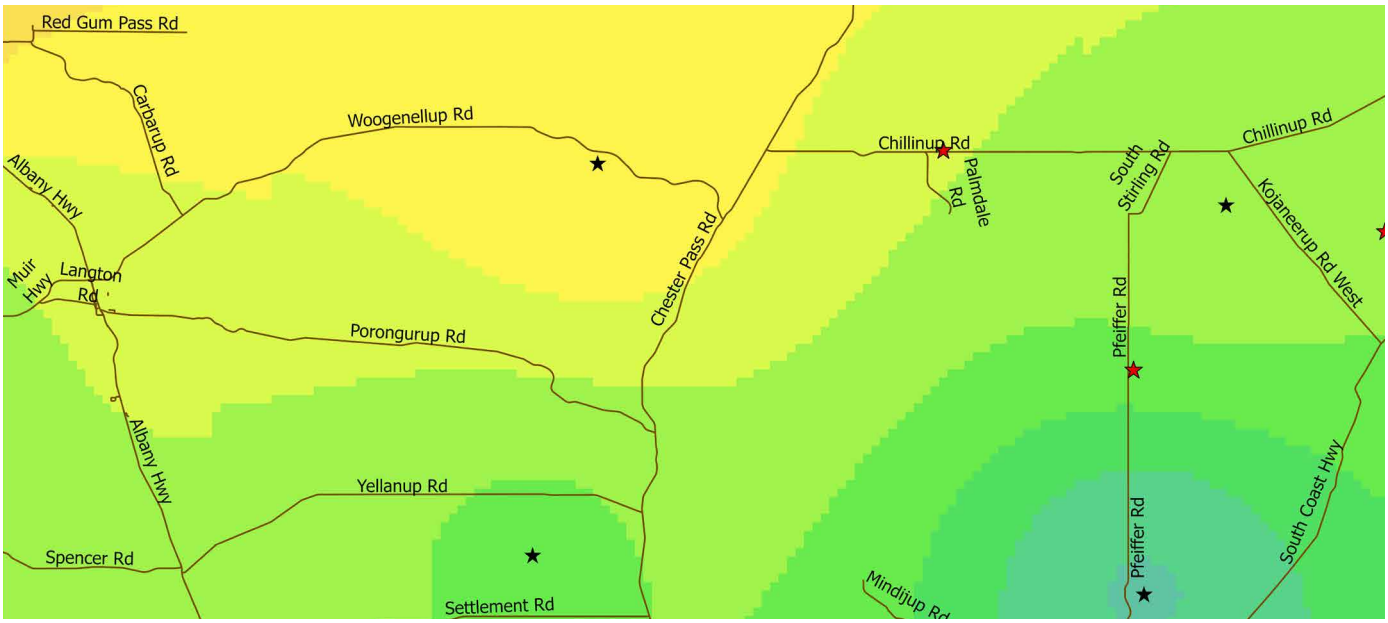

Figure 2: Red Square Inset – A rainfall variation map utilising DPIRD weather stations only.

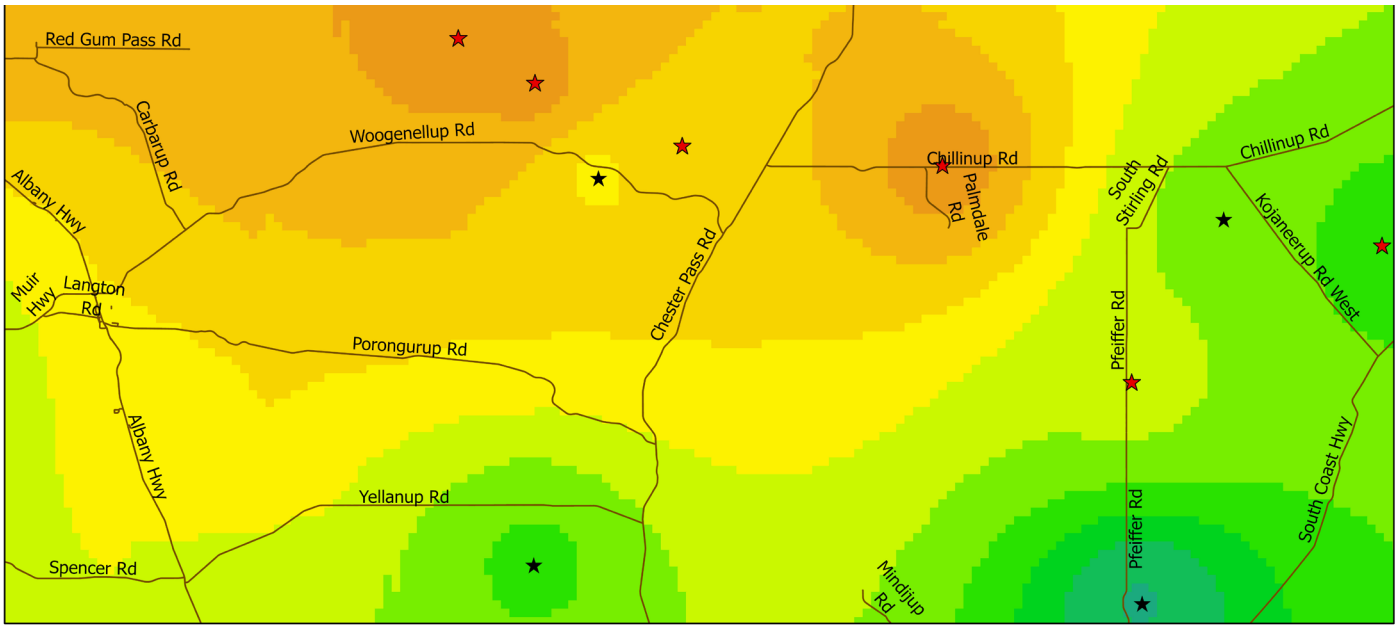

Figure 3: Red Square Inset - An updated rainfall variation map utilising both the DPIRD & SCF WeatherNet stations.

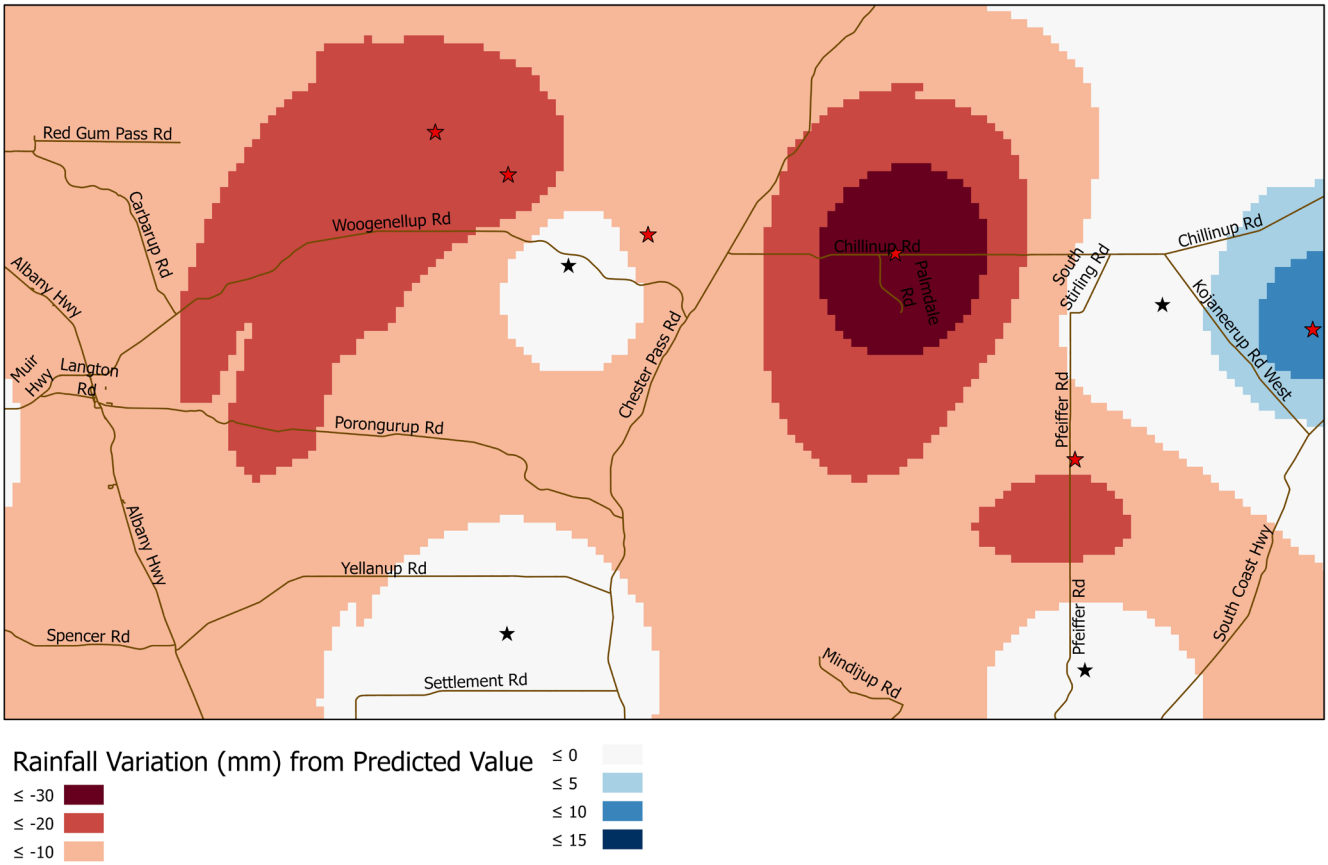

Figure 4: Actual recorded rainfall variation against the predicted rainfall model in mm for August 2020. Note: Areas coloured blue recorded above DPIRD predicted values, whilst red-coloured regions had less than DPIRD predicted rainfall.

STEP 3: RAINFALL ACCURACY MAPPING – THE DIFFERENCE IN HAVING MORE DATA!

Previously in figures 2 & 3 where we had a combination of DPIRD only & SCF/DPIRD only rainfall maps, we can take these layers another step further, and create a rainfall accuracy map (Fig 4.).

This map represents the difference between the two layers, to show regions which had more/less rain than previously estimated in the DPIRD rainfall only map. Simply put, the areas coloured white was accurate in this modelling, red coloured regions received less than predicted rain, and those coloured blue received more rainfall than previously predicted.

To do this calculation, we utilise a mapping calculator in our software to perform the basic analysis as follows:

Rainfall Variation (figure 4)=(DPIRD & SCF Rainfall Map)-(DPIRD Rainfall Map).

STEP 4: MAKING PRODUCTION SENSE FROM RECORDED RAINFALL... WHY IS THIS SO IMPORTANT?

With so few weather monitoring points effectively being extrapolated to assume weather conditions in-between stations generally, it is no wonder why some members don't have faith in current weather forecasting services. Accurate, localised weather maps help growers understand true rainfall variation, which can then be utilised for nutrient management decisions to improve on-farm yields and quality.

Example - Improving the accuracy of predicted yield maps

The more data points that we have, the higher accuracy we can have when it comes time to producing predicted yield maps for a region. Performing basic map calculations utilising average water use efficiency levels, we could easily create potential yield maps for varying crop-types across the membership zone. However, to do this accurately & effectively, SCF and our members must have access to high-quality rainfall data that is relevant to our membership base. Without this extra data across the membership, we cannot utilise the current weather-station networks to predict yields accurately.

One example of the variation we could see is in the map created on the next page (figure 5). This map is generated from the predicted rainfall accuracy map that we had made in figure 4 and assuming a potential yield generated per mm of rainfall, to outline the effect on potential yield from inaccurate forecasting maps.

In assuming a very simplistic water use efficiency for a Barley crop at 20kg of production per mm of rainfall for August and utilising the DPIRD estimated rainfall only data map, we could potentially

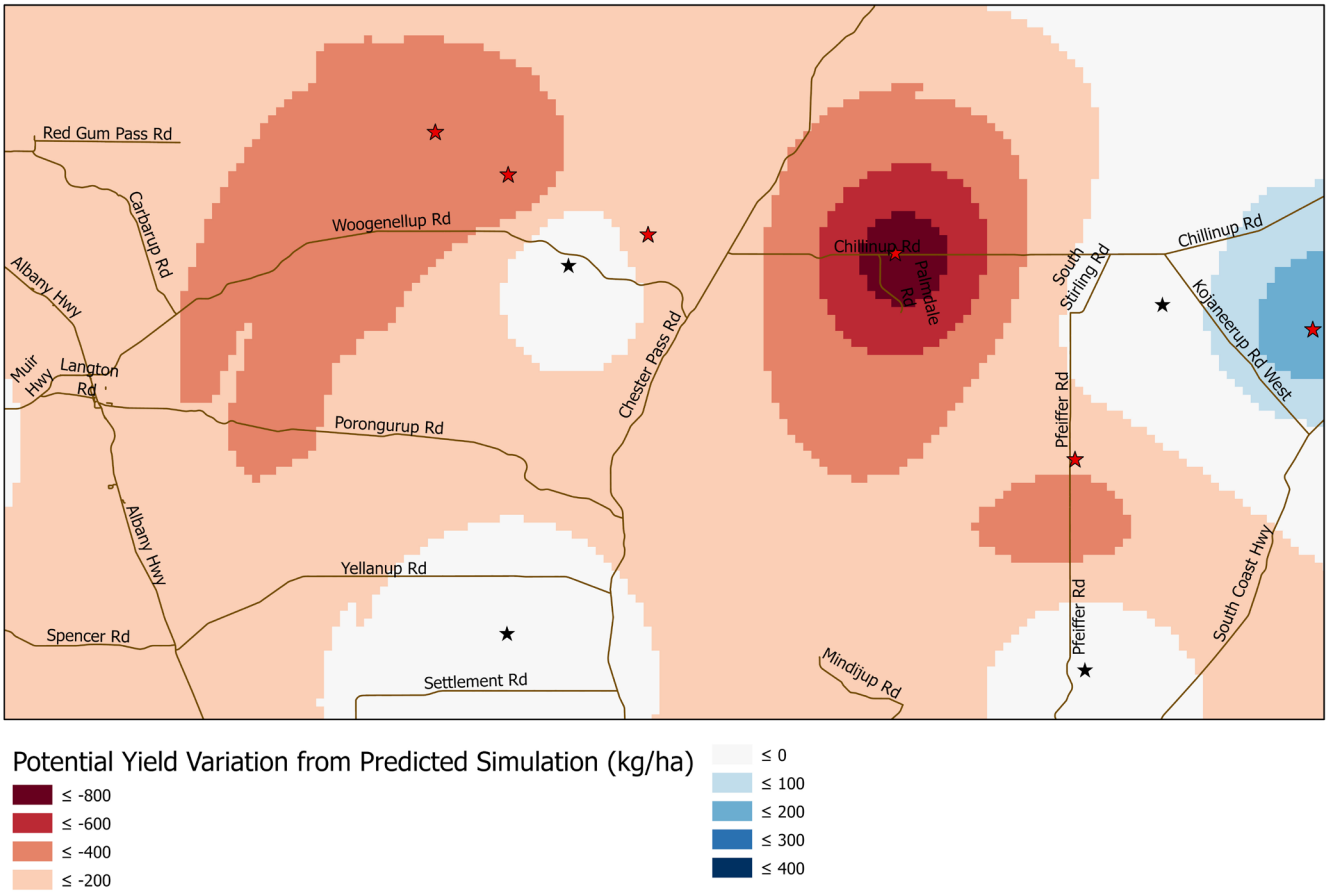

Figure 5 is a practical example of what the yield variation could potentially be seen from estimated crop production maps if we hadn't accounted for the additional monitoring points in the August DPIRD rainfall variation map. Assuming a water use efficiency of 20kg/mm of rainfall in August and all other rainfall/evaporation is previously accounted for.

see a change in the potential yields from -903kg/ha to 265kg/ha on a sub-regional predicted yield map based purely of DPIRD data only. This ultimately helps highlight the requirement of more data points being fed into these models, to help increase the accuracy of predicted yield maps, and ensure farmers can maximise production & quality.

Conclusion:

As previously mentioned, having additional weather monitoring points helps add an extra level of information to our maps, and could be utilised to help improve the accuracy of measuring rainfall events. Whilst there is still quite a few "black-spots" to infill, SCF is committed to helping our members make the most from their data and welcomes discussions about collaborating to improve the accuracy of these maps generated. Installing weather monitoring equipment on your farm effectively means that members can achieve the highest levels of accuracy for rainfall mapping, water-use mapping or even potential-yield maps, helping lead to better production and quality outcomes for our members relevant to their specific location.

ARE YOU INTERESTED IN ON-FARM WEATHER MONITORING?

Stirlings to Coast Farmers can assist members with the procurement and installation of on-farm AgTech from a wide range of vendors, as well as advanced data processing services.

To find out more about the wide range of equipment available to members, station/sensor pricing, software trials or advanced mapping, please contact Philip on 0428 768 589 or philip.honey@scfarmers.org.au

WANT TO VIEW THE LATEST RAINFALL & WEATHER READINGS?

SCF members can access weather station & rain-gauge data from within the "members area" on the SCF Website. Visit www.scfarmers.org.au and click on the "Members Only" button on the top menu.

To find your closest rain-gauge or weather-station, please visit http://bit.ly/SCFweathernet

Australian Government | National Landcare Program

Department of Primary Industries and Regional Development
GOVERNMENT OF WESTERN AUSTRALIA

Acknowledgements
The development of the Smart Farm Demonstration Sites was made possible through funding support from the Australian Government's National Landcare Program and the WA Government Department of Primary Industries & Regional Development Decision Ag grant programmes.

October 22-23

Head to bit.ly/greatsouthernlivestock20
or search Livestock'20 on eventbrite.com.au
to register now as numbers are limited!

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PROGRAM

Day 1 - Field Demonstration Afternoon

12:30 - 5:30pm at Slade's Farm, West Kendenup

Welcome and Introduction by WAPC and SCF Chairman, Ken Drummond
Pivotel farm telecommunications, DTN weather network and smart farm case study
Show me the $ Money! - WA Producers' Co-op 2020 case study
MLA Update by David Beatty

Field Demonstrations - Six demonstration stations operating on a rotational basis.
Demonstration sites include:

- Case study presentations
- SCF 'Smart Farm' Farm Command Centre consoles and precision farming
- Large equipment demonstrations
- Mobile towers for unlimited fast internet systems for the farm – Pivotel
- Small hand-held equipment demos
- Pasture and soil management demonstrations

BBQ, bonfire, and drinks

Day 2 - Farmer Forum

8:00am - 5:00pm at the Albany Entertainment Centre

8:00am Registration and coffee with an 8:30am start

Introduce program for the day – Esther Jones WALRC (MC)

Welcome by WAPC and SCF Chair

Keynote 1: Official opening by Hon Alannah MacTiernan

Keynote 2: Opportunities in export markets and COVID-19 impacts

Keynote 3: NZ Alliance Group – 70 years of farmer co-operation drives benefits on the farm

MORNING TEA

Room 1: Pastures	Room 2: Climate Adaptation	Room 3: Livestock
History of pastures from Space and where the technology sits today? Accurate determination of FOO > Precise Feed budgeting > Matching FOO to Livestock numbers > Maximising Livestock Profit	Containment and lot feeding: Optimising preparation and adaptation of lambs and calves in confinement or feedlots to increase feed conversion and growth rate.	Improving lamb meat quality and improve productivity through ASBVs and genetics. ASBVS and Indexes explained.

Room 1: Pastures	Room 2: Climate Adaptation	Room 3: Livestock
Improved feed quality and nutrient efficiency using soil microbes, deep rooted perennials, and organic residues.	Weather forecasting – 2021 weather outlook and use of hyper-localised weather station data networks on farms	Want more lambs? Big hitters and simple tips for lamb survival.

LUNCH - Lamb cooking demonstration where MLA Chef Rafael Ramriz will cook lunch for Livestock '20 ambassadors

Room 1: Farm Security	Room 2: Digital Technology	Room 3: Family
Farm water budgeting and security – what are the options for WA producers to secure water on farm for livestock?	Digital disruption of WA meat supply chains creating better outcomes for WA meat industry and enabling better decision making on farm.	Practical ways to improve farm profitability and financial planning for livestock enterprises.

AFTERNOON TEA

How can we help young people get into farming?

WSD AGRIBUSINESS DRINKS RECEPTION

Livestock'20 pasture demonstration site

Phillip Mackie, Project Officer, SCF

In preparation for the Livestock'20 event, SCF in collaboration with Tim O'Dea from Barenbrug (formerly Heritage Seeds) and Stew McTaggart from Direct Seeding and Harvest, have planted a pasture demonstration for the first day of field demonstrations. This site will showcase to producers and industry the forage options available to them to maximise the total food on offer in seasons experiencing a late break. The site was sown on the 17th of June at the Slade's property in west Kendenup.

Tim O'Dea recommended and provided eight different forage blends that he thought would be of interest to demonstrate at the event. The blends include:

Blend 1: 10 kg/ha of Sardi 10 Series 2 and 3 kg/ha of Commander Chicory,
Blend 2: 25 kg/ha of a WA perennial mix
Blend 3: 10 kg/ha of Hogan annual rye and 3 kg/ha of Leafmore forage brassica
Blend 4: 10 kg/ha of Vortex annual rye and 3 kg/ha of Falcon turnip
Blend 5: 10 kg/ha of Fuze Annual Rye and 2 kg/ha of Dynamo turnip
Blend 6: 75 kg/ha of Kaspa peas and 50 kg/ha of Express oats
Blend 7: 100 kg/ha Dictator 2 barley and 4 kg/ha of Zulu II Arrowleaf
Blend 8: 20 kg/ha RM4 vetch and 50 kg/ha of express oats.

The blends were planted into some nice moisture with the Dictator 2 barley and Zulu II Arrowleaf being the first out of the ground. The trial was sown with Direct Seeding and Harvest's Darryl Drill. The disc drill is a 2.4m wide machine on 150mm spacing and did a nice job of placing the seed evenly into optimal moisture.

We are looking forward to seeing how this demonstration will look for the Livestock'20 event on the 22nd and 23rd of October. If you are interested in seeing it yourself be sure to register for the event on Eventbrite.

R&D update – mid row banding project

Phillip Mackie, Project Officer, SCF

At seeding time SCF with Direct Seeding and Harvest put in two trial sites to test whether mid-row banding nitrogen is more efficient than top dressing. Research indicates only 42% (on average) of nitrogen applied is utilised by the crop, with the remaining leached, volatilised or washed away. It is hoped that mid-row banding nitrogen at seeding and at the end of tillering will increase fertiliser use by the plant and decrease environmental losses. Benefits from
mid-row banding include the same or higher yields from 20-30% less nitrogen being applied, improved nitrogen use efficiency and reduced acidification rates, with the main aim of improving profitability.

The two sites in 2020 include one at South Stirlings as a small plot trial, and another at Kendenup at a broadscale level. The trial at Kendenup compares mid-row banded against top dressed nitrogen at seeding time, while the plot trial in South Stirlings has six different treatments of nitrogen applications including:

- Urea MRB at seeding + Flexi-N MRB at tillering
- Urea MRB at seeding + Top dressed Flexi-N at tillering
- Top dressed urea at seeding + MRB Flexi-N at tillering
- Top dressed urea at seeding + Top dressed Flexi-N at tillering
- Nil urea at seeding + MRB Flexi-N at tillering
- Nil urea at seeding + Top Dressed Flexi-n at tillering

The seeder was used to band the urea at seeding before moving the machine six inches one way to then seed the plots. The in-season banding was done courtesy of the CSBP trial team, using their trial mid-row bander and flexi-N. The CSBP application went surprisingly well considering the spacings of machines were mismatched. Even when the disc was running directly over a row it was hard to determine any damage to the plants. Some loss did occur when the disc ran through the plants, with the most damage seen when one disc was just off the plant row cutting the outside leaves off. We look forward to seeing the results at the end of the year for this project.

Figure 1: Damage that is inflicted by running the mid-row banding disc next to the plant row.

Figure 2: Damage that is inflicted by running the mid-row banding disc directly over the plant row

Figure 3: Close up of CSBP's trial mid-row banding machine.

Figure 4: CSBP's trial mid-row banding machine

Figure 5: South Stirling's MRB trial site.

Australian Government | National Landcare Program

MLA PDS: Alternate forage crops for Southern WA

Background:

Over the Summer-Autumn period feed availability often becomes a critical factor influencing carrying capacity. SCF has received funding from MLA to investigate alternative livestock feed sources for this period. There is an enormous potential for new crops to be planted in the spring and survive over summer to provide valuable early-season feed. Especially when our climate is becoming increasingly variable with more rainfall events occurring typically outside of the (May-October) growing season. SCF will measure biomass production and livestock weight gain as part of the project.

Field Walk:

A great field walk was held on Friday, July 31. Over 50 people attended the afternoon at Brad and Tracy Wooldridge's Kalgan River property. Brad has planted a canola-970 and oat forage blend that averaged 3.5t/ha of biomass over the 8ha paddock. Since the field walk, Brad has grazed the crop for ~14days with 380 ewes and 550 XB lambs at foot. Not long after the sheep entered the paddock, southern WA experienced wide-spread storms and the Kalgan property received over 145mm of rain in seven days. Brad reported zero lamb or ewe losses during this time. The crop will now be fertilised to address the macro-nutrient (N, P and K) and micro-nutrient (Mn) deficiencies which were determined from CSBP plant tissue tests. The paddock will also be sprayed for Red-Legged earth mites which were in great abundance. Brad and Tracy hope to get more than one future grazing event off this paddock.

Pasture FOO estimate auction:

Field day participants had a go at estimating FOO by eye. Earlier in the week, Brad had completed quadrat biomass cuts which were dried in the DPIRD ovens. The samples were weighed, and biomass in tonnes/ha were calculated. The purpose of the exercise was to show growers how difficult FOO estimates can be, which has critical ramifications for feed budgeting.

Table 1: Summary of the pasture Food-on-offer (FOO) estimations (t/ha) from 34 producers at the recent field day hosted by Brad & Tracey Wooldridge.

Biomass (t/ha)	**Ave. Group Estimate**	**Actual Biomass**	**% accuracy**
Clover Site 1- higher	1.2 t/ha	2.7t/ha	44.4
Clover Site 2- lower	1.4 t/ha	1.8t/ha	77.8
Biomass (t/ha)	**Ave. Group Estimate**	**Actual Biomass**	**% accuracy**
Oats & Canola paddock	3.9 t/ha	5.1t/ha	76.5

How did the growers fare?

Clover site one was the first auction of the day and producers under-estimated the FOO by a whopping 1.5t/ha or 44.4% of the actual measured biomass. Producers were told the total biomass after the first auction to help calibrate them for the next estimation. The second clover pasture site looked to have less biomass than the first site, so producers were able to improve there accuracy to 77.8% of measured biomass. The final auction of the day was the canola & oats crop which was about to be grazed by Brad and Tracey's ewes & lambs. Producers were asked to estimate the highest biomass area of the paddock, which was clearly higher than either of the clover pastures. The producers accuracy was similar at 76.5% of the measured biomass.
It was interesting to note that the average producer estimations were lower than actual biomass for all three auctions. In fact, out of the 102 individual producer estimates, only four were equal or above the measured biomass for the three auctions in total.

Figure 1: The 8ha canola and oat forage crop 14 days (August 15, 2020) after 380 ewes and 550 XB lambs had finished grazing the paddock. See picture on page 16 for ungrazed comparison.

There was also a machinery display from Direct Seeding & Harvest Equipment showing their box drill. Attendees were able to witness how well the box drill could seed oats and ALOSCA granules directly into the clover-based pasture. Matt Skeet from Castle Drilling also showed his water drilling rig, which he is going to use to contract dig water bores. If anyone is interested in knowing more about either of the machines and buying, hiring or contract options, feel free to contact Stewart MacTaggart (Direct Seeding) or Matt Skeet (Castle Drilling).

The afternoon finished with SCF member Kent Rochester doing a live display of the RocksGone Reefinator. Kent has previously completed some contract work for Brad & Tracey in the summer to renovate the rough and rocky paddocks. The Reefinator crushes and breaks up rock to improve trafficability and also create a greater seedbed for pasture growth. Many members were seeing the machine for the first time. If you would like to contact Kent about Reefinator contract rates and availability, please contact SCF, and we will pass his number on.

The day was completed with a sundowner drink and BBQ for all to enjoy. Many thanks to Elders for the loan of their BBQ trailer and CSBP Fertilisers Albany for supplying refreshments. Huge thanks to Brad & Tracy Wooldridge, plus Matt Skeet for hosting the event.

Good to be back – non-wetting field walk popular first event after COVID restrictions ease

Samantha Lubcke, Memberships Co-ordinator, SCF

First event back for the year since the COVID-19 restrictions have eased and everyone was obviously keen to get out and about with an enthusiastic group of over 50 people attending our Non-wetting soils field walk on Thursday July 16. Even the SCF office mascot, Maddie the dog, enjoyed the outing! There was plenty of discussion regarding wetter use and placement options amongst the growers and our R&D team and DPIRD's Glenn McDonald. The trial is part of the Grains Research and Development Corporation funded non-wetting soils project led by project partners Southern Dirt. Preliminary crop establishment results will be presented at our annual Spring Field Day on Wednesday September 24.

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

Southern Dirt

SCF are looking for a Spring Soil Amelioration Trial Site

SCF are currently looking for a site that will host a DPIRD spring soil amelioration plot trial. This site will compare ameliorating in later winter or early spring this year and immediately following this with a variety of cover crop options. This is a 2.5 year project with short term lease arrangements for the 150mx150m plot site. This is a DPIRD run trial with all amelioration, seeding and spraying being completed by DPIRD or subcontractors and no requirements from farmers.

The cover crops will be evaluated for suitability to protect the soil surface from erosion, and the capacity of the root system to enhance soil amelioration longevity. To ensure the soil surface is not left bare during the summer period, all plots will be sown to the cover crops at the same time as those sown following the Spring tillage operations, except for control treatments for the nil tillage and Autumn tillage to assess the effect of the cover crop under these conditions and enable comparison to existing management practices.

If you are interested in hosting the site please get in touch with Phill Mackie at the SCF Office, 0437 120 891, phillip.mackie@scfarmers.org.au

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1300 846 643

This an Australian Government initiative. Vinnies is assisting to distribute the funds. Round 2 funding of the DCSI has been open since 19 November 2019 and will continue until December 2020. You can only receive payment once during this round.

Australian Government

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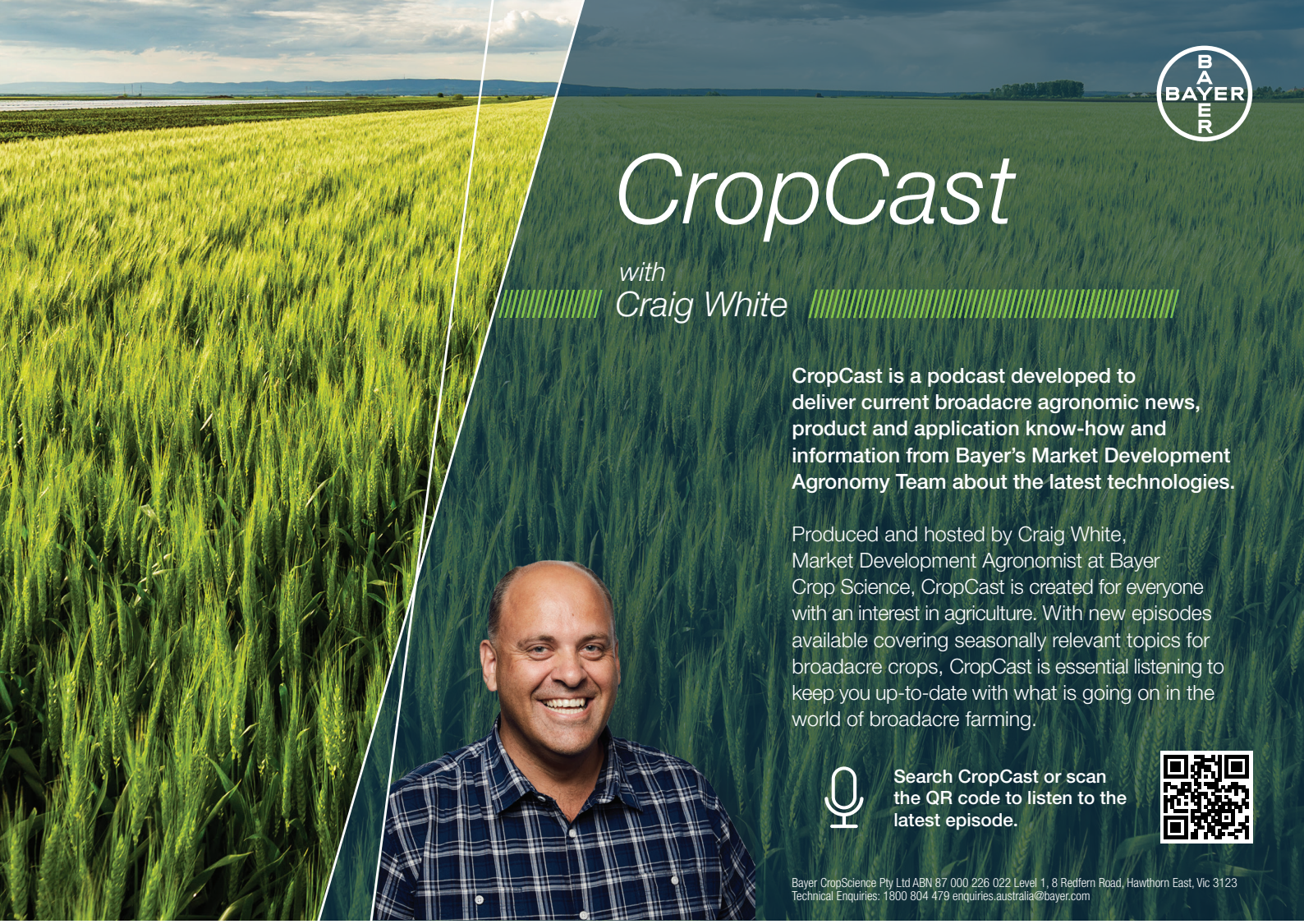


SUMMIT FERTILIZERS

Summit Fuel Gauges for better in-season nitrogen decisions

Nitrogen is one of the most important elements for plant growth and is usually taken up by crops and pastures in the largest quantities of any nutrient. During this time of the year, farmers will need to make important decisions on matching nitrogen inputs to the crop's yield potential, which may have changed with recent rains, but particularly since the nitrogen budget was formulated following soil testing in the summer/autumn.

Factors other than rainfall and available stored soil moisture that develop during the season that can influence yield potential include; diseases and pests, weed burdens, fertiliser already applied, nutrient deficiencies like potassium, temperature, and mineralisation of available soil organic matter.

How much nitrogen is required is determined by potential yield. In cereals, about 30 kg of N is required in the plant to grow each tonne of grain. About 20 kg of N moves to the grain and is removed at harvest and about 10 kg N remains behind in the straw. As a result of leaching and volatilisation, no nitrogen fertilizer application will be 100 percent efficient, all incur some losses, so typically 40 kg of N needs to be applied to grow each tonne of cereal grain and maintain soil fertility. In canola, about 70 – 80kg of N is needed to grow each tonne of canola seed. How much is supplied from the soil is determined by rotations and soil organic carbon levels, along with the amount of mineralisation in spring. The remaining requirement will need to be supplied through nitrogen fertilizer applications.

Later N applications in cereals are aimed at maximising tiller and spikelet survival or increasing grain weight and protein content. To increase the protein content of a 1t/ha cereal crop by about by 1% you generally need about 6 kg/ha of N. High N availability later in the season in canola increases protein but can decrease oil percentage. Summit Area Managers with knowledge of your local conditions are available to assist you with your nitrogen decision making.

Mark Ladny, Area Manager - Albany (West), 0498 223 421.
Andrew Wallace, Area Manager - Albany (East), 0427 083 820.

Australian food and agriculture may have just passed 'peak China' exposure – Rabobank

Australian exports of food and agricultural products to China rose by eight per cent in value terms in the 2019/20 season, reaching the highest level in the history of the China-Australia trading relationship. But that could well prove to be the peak of Australian agriculture's exposure to China.

However, while there was a surge in shipments to China, the total value of Australia's food and agri (F&A) exports "basically stood still in 2019/20" – with shipments down by just under two per cent. As a result, China's share of Australian F&A exports rose to 32 per cent for the 2019/20 period – up from 29 per cent in the prior year, and reaching the highest level in the history of the China-Australia trading relationship.

But the recent trajectory of Australian agriculture's increasing exposure to China was not inexorable, and 2019/20 could well prove to be the peak of Australian agriculture's exposure to China. Market concentration risk Rabobank head of Food & Agribusiness Research Tim Hunt said that extracting one in three of our export dollars from one market brought considerable concentration risk for the Australian food and agricultural sector.

Mr Hunt said in a year in which political relations with China had soured, the share of almost all of Australia's agri exports destined for China rose. But trade was now starting to suffer.

"This shouldn't come as a complete surprise," he said. "China has often found reasons to reduce purchase of agri products from countries when tensions arise. And its most senior diplomat in Australia warned over two years ago that if political relations continue to deteriorate, trade could suffer."

Now almost eight months into 2020, this is exactly what we are seeing. "Australia has five F&A exports to China that can be worth over a billion dollars in any given year. In 2020, China has so far impeded or threatened to impede three of these – via the removal of accreditation to supply some beef product lines from certain abattoirs, the imposition of an anti-dumping duty of barley, and now a threat to impose anti-dumping duties on wine also" Mr Hunt said.

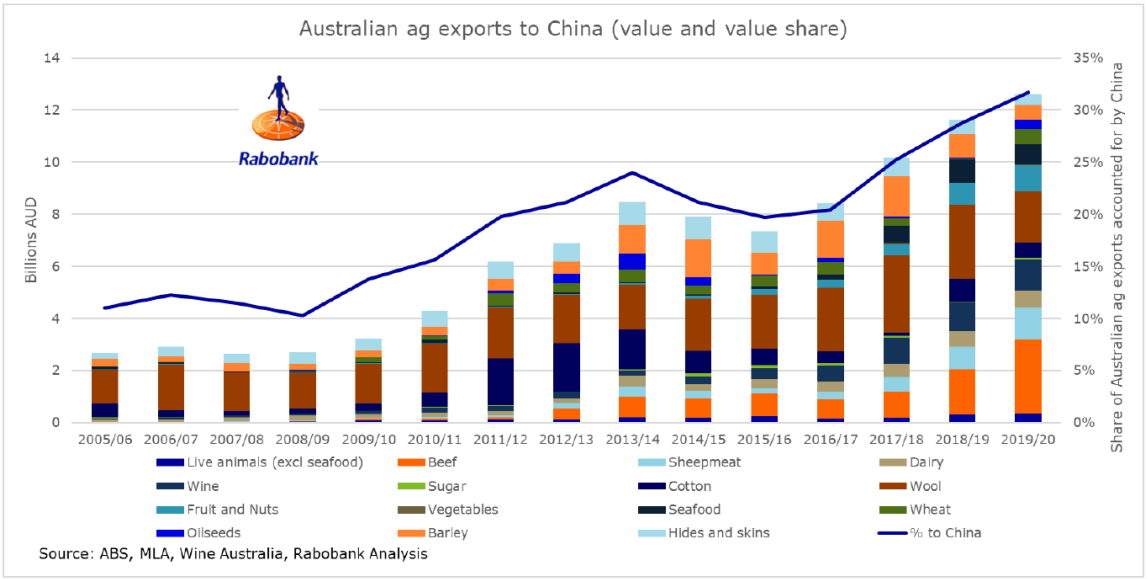
Mr Hunt said yesterday's announcement of a Chinese anti-dumping investigation into Australian wine was cause for significant concern in the sector. "The investigation may ultimately find that no such dumping has occurred. But these investigations can take more than a year, and the uncertainty it creates can impact trade in the interim and can undermine investment appetite in the sector."

Peak China

- 2019/20 may prove to be the peak of Australian agriculture's exposure to China for several reasons.
- Firstly, the likely rebound of wheat production this season will see a huge boost to shipments of a product that is typically sold to markets outside of China.
- Secondly, China's antidumping duty on barley will likely see most barley exports directed elsewhere for at least the next 12 months.
- Meanwhile, with some rebound in the Chinese pig herd underway, the share of Australia's beef and sheep meat destined for China may also have peaked.
- As we push into the longer term, regions like South-East Asia are also expected to play an increasing role in the textile milling industry, which will eventually see the share of Australian cotton sent to China drop off over the medium term.

But the size of the trade flow will be heavily influenced by the politics between the countries and the strategy of buyers and sellers. The extent of exposure to China and the risks this is bringing may see many industries look to diversify markets in coming years.

The Chinese market is hard to replicate in size, growth and value. But there are growth opportunities in other markets that Australian exporters can tap into in coming years, especially if progress is made in improving market access. The Australian F&A industry has been flexible and adept enough to navigate shifts in its customer base over many decades. This may prove to be the start of the next phase in that journey.



RockStar – in the spotlight this Spring

With the south-coast region looking promising after much needed rain our newest Australian Hard (AH) wheat, RockStar, now has every opportunity to show its form in its first season in the paddock.

Despite the drier start to the season RockStar is expected to perform very well, particularly when we consider the variety's NVT and internal trial performance across a range of environments over the last few years.

According to RockStar's Breeder Dan Mullan, the mid-slow variety will assist in diversifying wheat variety planting portfolios, providing opportunities to grasp earlier sowing windows as we've seen in many areas this year.

"RockStar is an exceptionally high yielding variety which has consistently performed across a wide range of environments and sowing dates within the InterGrain and NVT trial programs, highlighting very good yield stability."
"While RockStar has a medium coleoptile and effective tillering capacity and will hold its own in terms of weed competition, growers should carefully consider appropriate seeding rates to achieve desired plant densities," Dr Mullan said.
"The variety is later maturing than Scepter, whilst similar to LRPB Trojan and Catapult and offers an effective disease resistance package, including good yellow spot and stripe rust resistance and very good stem rust resistance".
"We acknowledge that sprouting tolerance is a critical trait for the south-coast and will be undertaking further germination index and falling number testing during the harvest period, with the intention of having a provisional rating available for RockStar early next year".

RockStar wheat is farmer to farmer trade approved and if you have any queries on the variety please feel free to contact Georgia Trainor (Territory Manager), gtrainor@intergrain.com or 0439 093 166.

Pacific Seeds set to release next generation of game-changing canola hybrids

One of Australia's largest seed providers, Pacific Seeds, has announced the commercial release of three new canola hybrids for 2021 which are exclusive to the company. Pacific Seeds National Canola Technical Manager Justin Kudnig said that these new hybrids have been developed to provide greater flexibility to farmers.
"Our three new canola hybrids have been adapted to grow across all states, and with high yields, top vigor ratings and an excellent quad-gene blackleg rating of R, these hybrids will be a strong addition to any farmer's rotations," Mr Kudnig said.
"We're thrilled to announce the release of two new dual herbicide stacked products - Hyola Enforcer CT and Hyola Garrison XC, which have been designed for integrated weed management and protection against chemical carryover from previous crops.
"As Aussie canola growers experience the full commercial value and agronomic protection provided by dual stacked technologies, they will be able to see the advantage firsthand of adding products like Enforcer CT and Garrison XC to their program.
Hyola Enforcer CT is a non-GM product and the first in a new generation of Clearfield and Triazine (CT) dual herbicide stacked hybrids.
"We're seeing a rise in popularity for CT hybrids and Enforcer CT is a great tool for IWM and managing Group B imidazolinone (IMI) residues in drier seasons. We have a big pipeline of CT products that we think will be very popular with Aussie farmers," Mr Kudnig said. Hyola Garrison XC is the first release from Pacific Seeds' next generation of canola hybrids featuring dual TruFlex and Clearfield (XC) herbicide tolerance.
"Garrison XC combines TruFlex's wider spray window and ability to apply higher, more effective chemical rates with the option to apply IMI herbicides in-crop or alternatively to plant into soils with IMI soil residue.
During 2019 trials, both Hyola Enforcer CT and Hyola Garrison XC showed impressive financial returns per hectare.
"The third new canola hybrid to be commercially available in 2021 is Hyola Blazer TT. This product is our latest triazine tolerant (TT) release with very high yield and blackleg resistance" Mr Kudnig said.
"In both extensive Pacific Seeds Research trials and NVT Trials to date, Hyola Blazer TT delivered considerable yield returns which were equal to or greater than popular competitor TT hybrids. "All three of these hybrids have been developed to make many growers seasonal cropping programs more flexible and profitable.

SCF BEHIND THE SCENES
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Stirlings to Coast could not thrive without the amazing work of our various board and committee members. From SCF members to expert advisors, each one plays a key part in the development and growth of the SCF community.

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