

SCF Focus

STIRLINGS TO COAST FARMERS

WINTER 2022 NEWSLETTER

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STIRLINGS TO COAST



PHOTO: PASTURE MIXTURE GROWING AT THE DAIRY AUSTRALIA FUNDED DENMARK CLAYING TRIAL



JOTTINGS FROM THE CHAIR

Sandy Forbes, SCF Chairman

Hello to all Stirlings to Coast members, sponsors, and staff!

I hope that everyone has had a good start to the season and that seeding went well for you all. Let's hope the season continues to be a good one and the rain falls where and when it is needed, and not too much! Lambing percentages in the area look good, and pastures are growing well so far this year.

The war in Ukraine continues to affect the markets, and the change in government has thrown a bit of a curveball at the agriculture industry, with things like a potential live export ban in the offing. We must keep an eye on these issues and advocate for the farming community when we can.

I want to take this opportunity to commend Amy Sims of Smith Thornton for her work with the SCF finances and financial processes since coming onto the Board. She has continued the work of Rebecca Willis in streamlining our finances and processes and improving our financial accounting. I'd also like to thank our hard-working SCF staff for their work in the past few months; they have kept SCFs high standards in project work and communications.

Please note social events are coming up in July and August where the staff have organised some afternoon field visits followed by a social BBQ and drink. The details will be on social media and emailed to members and sponsors. We look forward to catching up again after a couple of Covid-19-affected years.

Wishing everyone a productive season ahead for 2022.

Sandy Forbes

SCF Chairman

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CEO REPORT

Nathan Dovey, SCF CEO

Welcome to the 2022 winter newsletter. As I write this column, the season is progressing nicely with some excellent looking early-sown canola crops and plenty of feed available with sheep and cattle. When you throw in canola prices of over \$1200/t and APW1 wheat multi-grade prices hitting \$500/t, there is plenty of reason for cautious optimism. Although, the cost of diesel, fertiliser and herbicides is not going down any time soon.

At SCF, we have been busy finalising articles for the trials review booklet and implementing the 2022 trials program. We have a couple of new projects on the economies and efficiencies of clay spreading from two separate funding sources. The first project is hosted by a Denmark dairy farmer who is looking at spreading clay on his pastures to increase production but also to increase the nutrient holding capacity of the soil to reduce nitrogen and phosphorus losses.

We will have a field walk this year which will be an excellent opportunity to hear a little about the dairy industry and how they go about it. I have been out to Andrew and Claire Jenkins dairy (farmer-hosts) a couple of times already and have enjoyed learning about another agricultural system.

Our second claying trial is a GRDC investment looking at improving the efficiency of spreading and incorporating claying in our cropping country. It is not about convincing members that claying sandy soils are a good idea; that is already well established! It is about determining the exact amount of clay to spread to achieve the grower's objectives. Please have a look at the article in this newsletter to learn more.

Thank you to everyone who has recently paid their membership for the following year. Our membership numbers have remained steady over the last few years and currently sit at 87. However, we could always use more members because it helps to reach more farmers with the research we do. Feel free to bring a neighbour or colleague along to the next SCF event to give them a taste of what we have to offer.

Finally, I want to put an early plug in for the SCF spring field days this year! Yes, that is correct; we will hold two spring field days in September with a focus on the eastern members (September 22) and the western members (September 29).

By having two separate days, we can focus the content on the local growers and reduce the travel time between trial sites etc. In addition, we hope to reduce the length of the field day to increase the amount of social time. Please lock away the dates in your calendar now. The western field day will likely be located on Preston's property at West Cranbrook, where we have several trials in 2022. The eastern spring field day will be in the South Stirlings/Green Range region.

Enjoy the winter newsletter and I look forward to catching up with you all very soon.



A members canola crop from Wellstead seeded on April 5th. The photo was taken on May 23rd



John Blake (GRDC Western Panel) recently took this picture of a booming canola crop on the Chillinup Road. Date: 25th May 2022



Livestock Officer Kelly Gorter recently shared this image of a deferred pasture at Green Range. The paddock had 1973 kg/DM/ Ha of pasture available in mid-May



meet the member

Michael Webster

Region: Great southern, Tenterden

Farm name: Beechbanks Farms

Size of farm: 2500ha productive land, 2210 owned

290 leased, Sandy/loamy gravels, Small amount of loamy clay

Year joined SCF: 2012

What sort of enterprises do you run?

Crop – canola, lupins, barley, wheat and oats.

Self replacing merino flock as well as some ewes mated to white Suffolk's for prime lambs.

What are some of your biggest passions and why?

As the cropping manager harvest time is particularly enjoyable as it's the time of the season to see what your hard work for the year has provided and to be thankful for that.

But I do really enjoy seeding. I enjoy the busyness and challenges it throws your way but mainly because it's the start of the cropping season and a lot of the decisions made at this time can have a big impact on the season you may have.

What are some of the most significant constraints to achieve higher productivity on your farm? – NOT including rainfall!!

Our soils do seem to hold us back as their holding capacity of water and fertiliser is limiting. Although technology is letting us improve this .

Another constraint that we have discovered this year is volatility in markets and input costs. Although we do a lot of budgeting and gross margins with inputs vs return. With everything changing with world markets its hard to be able to push productivity consistently across the farm enterprises.

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

Cross farm security cameras

Yield mapping

RTK

EID

Agriwebb

Semi automatic coffee machine keeping staff happy

Technology is starting to change the shape of the farm with the aim to increase efficiency and productivity. Also allowing us to achieve management operation we couldn't before particularly in getting crop out of the ground in drier seeding conditions.

Are you currently trialling anything yourself?

Really can't think of them. Most paddocks have some sort of trial in them and paddocks next door to each other have also been compared for something.

Wetter trials

Different rates of N on pasture

Ommi boost on pasture

Stocking rates and pasture composition

Our latest one is an on-row-off row trial with the removal of wetter to see if that a cost saving we can achieve without compromising seed establishment. Hoping to run that for 10 years.

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

The sky is the limit. Really everything on the farm is a test or trial. Always striving to improve productivity/ profitability while maintaining a sustainable farming system.

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

Improving productivity of every ha that is farmed

Integrating technology into every part of farming

Reducing the labour required on the farm

Do you attend any agriculture field days other than SCF?

Yes, when there is something I'm interested in.

CURRENT PROJECTS

PROJECT TITLE	GROWER HOST	INVESTMENT PARTNER	FINISH DATE
Ripper Gauge	Clint Williss	GRDC	Mar-23
High Rainfall Zone - Yield Constraints	Mal Thomson, Andrew Slade, Gary Walters & Simon Hilder	GRDC	Mar-23
Subsoil Drainage	Preston & Allison Families	GRDC	May-24
Alternative Forage Crops	Metcalf, Pyle, Smith	MLA	Apr-23
On-The-Go pH testing	Martin & Tammy Wiehl	NLP	Nov-22
Soils Extension	Mackie, Tomlinson, Wood	NLP	Nov-22
Hyper Yielding Crops	Beasley, Preston, Hood & others	FAR Australia/GRDC	Jun-24
Soil Pathogens	Hunt family	GGA/GRDC	Jun-23
Subsoil Manuring	First Australian Farmland Peter Van Zeyl	NLP	Jun-23
Pasture Optimisation	TBA	NLP	Jun-23
Water Use Efficiency	Multiple	Agrifutures	May-22
Future Drought Fund	Multiple	DAWE	Jun-22
Summer Cropping Options	Walker, Curwen	GRDC	Mar-23
Stubble Height	Slade Family	GRDC	Feb-25
Harvest Losses	Various	GRDC	Nov-22
Sheep Confinement Feeding	Griffiths, Walker, Webster	MLA	Mar-24
Wheat Falling Numbers	Various	GRDC	Jun-22
Claying Pastures	Jenkins Family	Dairy Australia	Dec-24
Legume Profitability	Preston Family	GRDC/GGA	Mar-25
Frost Mitigation	Moir Family	GRDC/GGA	Apr-23
Claying Efficiency	Goad Family	GRDC	May-24
Drought Hub Node Leaders	Various	Future Drought Fund /GGA	June- 24

The impact of stubble architecture on fallow efficiency and plant establishment.

Dan Fay, Project Officer, SCF

Stirlings to Coast Farmers are participating in a GRDC funded state-wide project investigating strip and disc seeding systems. The aim is to determine if there are benefits to strip and disc systems in the high rainfall zone (HRZ), where sowing rates, plant density, crop biomass and stubbles are routinely higher than wheatbelt cropping systems. The project will look beyond simply increasing fallow efficiency to measure and analyse several variables that arise from changes to stubble management and architecture over four years.

In this project, we will examine the impact of different stubble architecture across soil water dynamics, plant establishment and nutrient efficiency. Each treatment has been replicated twice at a paddock scale to provide observations and data that can be translated to real farming systems in the high rainfall zone (HRZ) of WA.

The project includes four stubble management x seeding implement treatments:

1. Draper front (standard cut height) + tyne seeder, (D(s)/T)
2. Stripper front + disc seeder, (S/D)
3. Stripper front + speed tillage + disc seeder, (S/st/D)
4. Draper front (high cut) + disc seeder. (D(h)/D)

BACKGROUND

The manipulation of stubble architecture through harvester setup, strategic tillage, and seeder type is a key driver of fallow efficiency. In the wheatbelt, as well as in the more marginal cropping areas on the east coast, stripper fronts have become increasingly popular as growers seek to preserve more stubble residue and increase their fallow efficiency whilst increasing harvest productivity.

The basic philosophy of strip and disc cropping systems is that they will provide more stubble cover reducing soil moisture losses compared to the conventional draper and tyne practices of most WA growers. However, there is a lack of research on strip and disc systems in the HRZ, where stubble residues are much higher than the low-medium rainfall WA wheatbelt. The trial has been running for six months, and whilst this is a long-term

project, there have been some notable results from the 2021/2 fallow period and this season so far.

FALLOW EFFICIENCY

Fallow efficiency is the measurement of the water stored in the soil at the end of the fallow period. This is a measurement of your starting balance plus the summer rainfall, minus all losses through transpiration, evaporation, runoff, lateral flows and losses through deep drainage. This is obviously a win for the WA wheatbelt, where dry summers are the standard. However, very little research has been conducted into increasing fallow efficiency and the impact of preserving high stubble loads in the HRZ. There can be consequences from keeping large volumes of stubble, such as increased disease burden and trash flow when seeding. Additionally, HRZ growers could be penalised rather than benefit from drastically increasing fallow efficiency because of waterlogging. Although penalties may not eventuate this season, this is something that will be monitored throughout the lifespan of the project.

Table 1: Average stubble height (cm) at the end of the 2021/2 fallow period.

Treatment	Stubble height
Draper front (standard cut height) + tyne seeder	16.5
Stripper front + disc seeder	64.1
Stripper front + speed tillage + disc seeder	0.0
Draper front (high cut) + disc seeder	26.6

2022 SOIL MOISTURE

Volumetric water content percentage (VWC%) was taken at the end of the fallow period in each plot. Soil cores were taken 12th of April, three days after the speed tilling was applied to the strip + speed till/disc plots. The results found that the stubble treatments with a greater stubble load had a higher soil VWC% at each depth interval (Figure 1). The site had 11.6mm of rainfall between the time of speed tilling and the soil coring. The rain event explains the relatively high and uniform VWC% at the shallowest depth interval of 0-10cm. However, once you measure deeper into the soil profile, you can see the different treatments changing the VWC%.



The stripper front/disc plots had the greatest VWC% at 10-30cm, with an average of 12.2%, while the draper (high cut) had a VWC% of 10.9. Interestingly the stripper front/speed tillage treatment had 3.3% less plant available water than the plots where the stubble remained intact. This is most likely due to the stubble increasing the infiltration rate and reducing the surface evaporation to allow the strip & disc plots to capture a greater percentage of the 11.6mm of rain that fell between the speed tilling and the soil coring. The standard draper front stubble treatment resulted in a significantly lower VWC% at 10-30cm and 30-50cm.

There is a potential for a yield penalty from the tilled plots given they will not receive an in-season water infiltration and ground cover benefit from the additional stubble cover. However, the rapid growth of the canola canopy and root system should minimise any differential that arises from stubble cover increasing water infiltration, as there are additional benefits such as improved plant establishment and less weed burden resulting from the tilling of the plots.

The three heavier stubble treatments improved the fallow efficiency, resulting in a greater percentage of plant-available water at seeding time, particularly at depth, compared to the standard draper cut. This could be a great benefit if the seasonal outlook were for below-average rainfall or if there is a prolonged period of dry weather. The early results show why some growers have utilised the strip and disc system in lower rainfall environments.

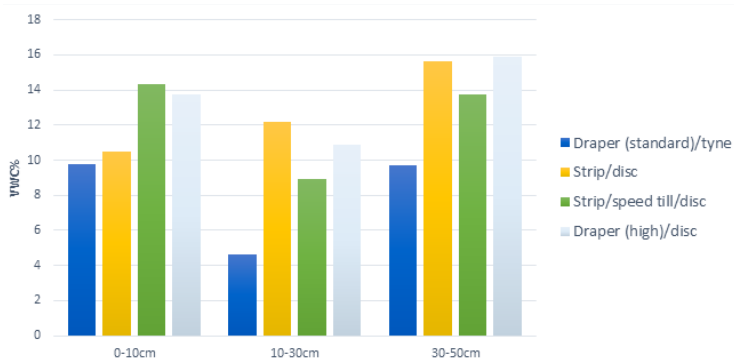


Figure 1: Average volumetric water content percentage for each stubble treatment recorded at the end of the 2021/2 fallow period, across three depth intervals.

Additionally, VWC% was recorded post-seeding by a TDR soil moisture probe on the 9th of May, 16 days after seeding. The

TDR probe measures soil VWC% to a depth of 12cm. Like the 0-10cm soil cores, there was very little difference in the measured VMC% resulting from each stubble treatment. The VWC% are lower across all treatments, which is expected given there was little rainfall for May up to that point. This probe will be used throughout the year to measure the long-term impact of the stubble treatments on the plant available water in the topsoil.

Table 2: Soil volumetric water content recorded by a TDR probe on the 9th of May.

Treatment	TDR Volumetric SWC (VMC%)
Draper front (standard cut height) + tyne seeder	6.47
Stripper front + disc seeder	6.36
Stripper front + speed tillage + disc seeder	8.82
Draper front (high cut) + disc seeder	7.89

PLANT ESTABLISHMENT

The impact of the stubble management by seeding treatments on plant establishment was relatively minor (Table 3). No statistically significant relationships existed between the stubble management treatments and plant establishment.

Table 3: Average canola plants per m², measured on the 9th of May 2022.

Treatment	Average plants/m ²
Draper front (standard cut height) + tyne seeder	26.1
Stripper front + disc seeder	25.8
Stripper front + speed tillage + disc seeder	28.4
Draper front (high cut) + disc seeder	28.9

WEEDS

As with plant establishment, there was no significant difference between the ryegrass densities and the seeding treatments (Table 4). However, the speed tilling treatment had reduced weeds (not significant) which is likely an effect of the soil disturbance or the greater spray efficiency from the incorporated stubble.



Table 4: Ryegrass numbers per m² for each stubble treatment.

Treatment	Average Weeds/m ²
Draper front (standard cut height) + tyne seeder	22.7
Stripper front + disc seeder	21.9
Stripper front + speed tillage + disc seeder	18.4
Draper front (high cut) + disc seeder	20.6

The high stubble loads had a negative impact on spray efficacy, with the two highest stubble loads having a significantly lower spray coverage than the tilled and standard stubble treatment (Table 5). Although the predominant weed was ryegrass, which is easily controlled in canola, the year-on-year effect of high stubble loads without tillage could increase the weed burden over time. The impact of stubble treatment on the weed burden will be continuously monitored over the 4-year project lifespan.

Table 5: Spray coverage percentage at ground level recorded during the second knock down spray prior to seeding.

	Draper Standard / Tyne	Stripper/ Disc	Stripper/ Till / Disc	Draper/High
Ground	12.27	7.32	13.72	8.62

CONCLUSION

The initial results show the wide and varying impact of stubble architecture on agronomic productivity and soil/water dynamics. Both positive and potentially negative flow-on effects have been recorded for each stubble management regime so far. It will be critical to observe how the differing stubble treatments impact crop development and, ultimately, any impact on grain yield. Given there has been little research into strip and disc systems in the HRZ, the continued monitoring of all the parameters will be necessary to form a complete picture of the suitability of strip and disc systems in the HRZ.



Figure 2: Demonstration of the Strip+Disc and Speed till (left) and Strip+Disc (right) treatments.



Figure 3: Demonstration of the Draper (standard) front + disc seeder (left) Strip+Disc and Speed till (right) treatments.



Figure 4: Demonstration of the Strip+Disc and Speed till (left) and Draper High Cut + Disc (right) treatments.

Understanding trends in falling numbers in the medium to high rainfall zones of Western Australia

Nathan Dovey, CEO, SCF

Background

The Grains Research and Development Corporation (GRDC), in conjunction with Stirlings to Coast Farmers (SCF) and South East Premium Wheat Growers Association (SEPWA), Southern Dirt, Facey Group, Fitzgerald Biosphere Group (FBG) and Ravensthorpe Agricultural Initiative Network (RAIN) are undertaking a project titled "Understanding trends in falling numbers in the medium to high rainfall zones of WA."

We want to know what your experience with wheat falling numbers is and how it affects your wheat production decisions? The GRDC is looking to address the issues associated with wheat falling numbers in medium and high rainfall areas of WA by collecting baseline data that will direct future research. Many SCF, FBG and Southern Dirt members have already been contacted to fill in a survey.

The project is still collecting data from other grower groups in different regions of southern WA. If you are an SCF member and would like to contribute to this data set, please call or text Sammy Cullen on 0417 605 784, and she will arrange a time to collect your responses verbally, or she can send you a survey to fill out. Thank you to everyone who has already spoken to Sammy or filled in the survey. Please find a summary of the survey results found so far.

Did you have any loads tested for falling numbers at the receival point in 2021? If so, what was observed?

YES - 50%

NO - 50%

Did you have sprouted grains detected at the receival point?

YES - 56%

NO - 44%

Did you have grain loads downgraded at receival points during the 2021 harvest due to the falling number result?

YES - 14%

NO - 76%

Did you have frost distorted grains detected at the receival point?

YES - 26%

NO - 74%

How would you rate the amount of harvest rainfall you had in 2021?

BELOW AVERAGE - 70%

AVERAGE - 23%

ABOVE AVERAGE - 7%

Are falling numbers/sprouted grain/black point generally an issue for your farm business?

YES - 61%

NO - 39%



How would you rate the following factors on their influence on wheat falling number results on your property? Please rate from 1-5, with 1 being minimal influence and five being highly influential.

		The average response from 34 growers
1	Variety	3.9
2	Time of Sowing	2.9
3	Timeliness of harvest	3.7
4	Harvest rainfall events	4.5
5	Frost events	2.5
6	Soil type	2.2

Have you utilised the following management techniques in recent seasons to mitigate the effects of falling numbers on your property? Yes/No

1	High moisture harvesting	YES	38%	NO	62%
2	Swathing the crop	YES	12%	NO	88%
3	Increasing harvest capacity e.g. new purchase	YES	65%	NO	35%
4	On-farm storage and mixing to optimize load quality	YES	80%	NO	20%
5	Prioritise harvest of susceptible varieties	YES	76%	NO	24%

Do you grow less wheat because of the risk of falling number problems downgrading your harvest price?



Have you discarded an otherwise suitable variety due to your experience or perception of its falling number risk?



Do you prioritise wheat harvest over other grains due to the downgrading risk from falling numbers?



Do you seed later than the optimum sowing window (for yield) to reduce the risk of falling numbers?



Are you confident that you know enough about the falling numbers issue to manage it adequately in the future?





Summary of the initial responses:

The survey will collect data from at least 60 growers in southern WA. The data presented in this article is based on the responses from 34 growers in the Stirlings to Coast Farmers, Southern Dirt (Kojonup/Katanning) and Fitzgerald Biosphere groups (Jerrermungup/Gairdner).

Despite the wet growing season, harvest was relatively dry, with 70% of the survey participants rating harvest rain 'lower than average'. Although 64% of growers had loads tested for falling numbers, only 25% had downgraded loads. Only 26% of growers reported frost distorted grains.

We asked growers to rate six factors affecting falling number results in wheat on a 1-5 scale, where 1 was a minimal influence, and 5 was highly influential. It was no surprise to see harvest rain (4.5) scoring the highest, followed by variety choice (3.9) and harvest timeliness (3.7). Based on these ratings, it makes sense that the top three tactics for mitigating the risk of falling numbers were:

1. On-farm grain storage and mixing
2. Prioritising harvest of susceptible varieties
3. Increasing harvest capacity. E.g. a new machine or utilising a contractor

Growers have multiple reasons to store and mix grain other than the falling numbers parameter, and similarly, increased harvest capacity would be motivated by many factors. Separating the reasons for increased harvest capacity and mixing grain was not covered in this survey.

Only 29% of growers said they grow less wheat because of the risk of sprouting downgrading grain quality. This number might reflect the perceived low risk of falling numbers, or it could be that less wheat is grown for other reasons. For example, lower wheat yield and profitability in relation to barley. This question will be interesting to monitor as more growers are surveyed.

Only 30% of growers said they prioritised harvesting wheat in relation to other crops, which is counter-intuitive based on the recognised threat from harvest rain. However, we suspect this may be because canola and barley are often finished when wheat reaches maturity. This is another data point that will be interesting to monitor as more surveys are completed from other regions.

Fifty nine percent of growers have had to discard an otherwise desirable wheat variety because it was a sucker for sprouting tolerance. This is valuable information for researchers and breeders to show how crucial sprouting tolerance is for southern growers. The results of the question asking if growers seeded later than the ideal window to counter falling numbers risk was surprisingly low at 15%. From personal experience, local growers tend to sow wheat at the end of their seeding programs, but we suspect the reasons for doing so are more than just the risk of sprouting. Southern growers seed wheat later to reduce the risk of frost and to diversify the flowering times of their cropping programs.



Claying efficiency in the Albany Region

Nathan Dovey, CEO, SCF & Dan Fay, Project Officer, SCF

BACKGROUND

Claying has become a vital amelioration tool in the Great Southern region of WA. It is the process of adding clay enriched (20-50%) subsoil into clay deficient and water repellent topsoils. Local soils are typically sandy, low in organic matter, non-wetting and at risk from wind erosion. Claying has consistently increased grain yields on sandy duplex soils, where the clay is incorporated to at least 30cm, lifting the overall clay content in this crucial area of the soil profile.

Claying topsoils reduces water repellence, increases water & nutrient holding capacity, and has the potential to increase organic matter over time. On sandy soils the economic outlay can be overcome within a couple of seasons due to the significant increase in yields. This, coupled with the long-lasting efficacy (30+ years), has made claying a widespread activity irrespective of the economic outlay.

The cost of claying has traditionally dictated the rate at which clay is spread. The general rule that local growers follow is that 'more is better', up until a point where too much clay can be problematic to incorporate. DPIRD researcher David Hall & colleagues have previously determined that growers should aim for 5% clay content in the soil to alleviate non-wetting and improve water and nutrient holding capacity. Clay spreading costs anywhere between \$500-\$1500/Ha, making it logical to calculate the exact amount needed on each paddock. Given the sizeable economic outlay of claying, it is surprising how much guesswork is involved in the decision-making process.

CALCULATING CLAYING RATES

The best practice for alleviating non-wetting and repellence issues is to target a clay fraction of 5% clay in the topsoil. However, there are quite a few variables that impact the ability of a grower to achieve this benchmark. Firstly, it is unlikely that a paddock has a consistent soil type, let alone a consistent soil texture. To establish how much clay a grower should spread, you need to know three key details:

1. What is the current clay percentage in the soil?
2. What is the clay percentage in the product you plan to spread?
3. What depth will you incorporate the clay in the soil?

To determine the target soil's clay percentage, soil samples from a representative area in the paddock are required and should be taken to the planned depth of clay incorporation. Ideally, growers would take multiple soil samples within the paddock at different depths to the target incorporation depth.

The depth to which clay is incorporated will be dependent on the implement being used to spread and incorporate. A deep ripper with inclusion plates can incorporate clay to 60cm, while a speed tiller will incorporate clay to 15cm. Picking an implement that will suit the target depth and clay rate is essential, as this will affect how much clay needs to be applied to reach the target percentage. It will take a significantly lower application rate to bring a topsoil clay percentage of 2% to 5% when incorporating to 15cm compared to 50cm. There is no standard amount of clay needed to shift a soil from 2% to 5% clay content because not all clays are created equal.



The clay pit which the subsoil clay is taken from is usually selected for logistical reasons, such as proximity to the targeted area in the paddock. The quality of the clay is not known until the topsoil and gravel has been removed and the clay exposed. Given the cost of doing this, the grower is usually obligated to use the clay on offer. Clay fractions can vary from 10-50%, and this has a significant influence on how much clay needs to be applied. Testing the clay before spreading is critical if 5% clay content is to be achieved because it is difficult to determine the quality of clay by sight and feel. The clay fraction can easily be determined via the soil testing services provided by Summit and CSBP. This project aims to help SCF members determine how much clay they should be spreading on their paddocks to suit their goals.



$$\text{Clay (t/ha) to reach 5\% topsoil clay} = \frac{-(10,000 \times 1.5 \times 1.4 \times ID \times (TC - CC))}{((20 - 100) \times (100 \times CP \times 1.5 - ID \times (TC - CC) \times 1.5 - 1.4))}$$

EXAMPLE: A SANDY Paddock WITH SEVERE NON-WETTING ISSUE

Topsoil (0-10cm) clay percentage is 1.2%

10-30cm horizon clay percentage is 1.8%

The average clay % on the top 30cm of this soil is 1.6%

The soil is a shallow sandy duplex, with a clay layer between 40-50cm. The grower plans to use a Plozza plough to incorporate the clay because that is what they have access too.

The next thing we need to know is the clay fraction (that is the amount of clay in the "clay", you wish to spread). The clay pit location has been chosen by the contractor based on their assessment of the most efficient strategy to spread clay in this paddock.

After the pit has been 'opened up', the grower will need to take some representative clay samples, this will require digging deeper into the pit, as the clay quality will change with depth. If there are major differences in clay percentage within the pit, this will affect the amount required to achieve a 5% clay percentage in the target soil.

Once this is done, samples of the clay need to be sent to CSBP or Summit laboratories for testing. Testing the product will provide information on any potential nutrient toxicity issues, or how the clay may change soil interaction with applied nutrients (e.g. changing the phosphorus buffering index (PBI). The clay analysis will show how much "clay" is in the sample, along with the silt and sand content.

In this example the clay has a 'clay' percentage of 28% and a silt percentage of 5% with no nutrient toxicity issues to worry about. Now for the million-dollar question, how much of this stuff should we be putting on?

The soil has an average of 1.6% clay in the top 30cm, and the soil test showed a 2% silt content, leaving a sand content of 96.4%.

Assume that the bulk density of the topsoil is 1.4%, the bulk

density of the clay/silt is 1.5%, and the moisture content of the clay is 20%.

In which case, 100t/ha of "clay" will equal 8kg/m² of soil added, and of this soil 2.24kg/m² (8x 0.28) of clay and 0.48kg/m² (8x 0.05) of silt will be added.

Using the below formula, the amount of clay that is needing to be applied to lift the top soil from 1.6 to 5% clay can now be calculated.

Clay (t/ha) to reach 5% topsoil clay = $\frac{-(10,000 \times 1.5 \times 1.4 \times ID \times (TC - CC))}{((20 - 100) \times (100 \times CP \times 1.5 - ID \times (TC - CC) \times 1.5 - 1.4))}$

Where:

ID = incorporation depth (mm)

TC = Target topsoil clay percentage

CC = Current topsoil clay percentage

CP = Clay percentage of "clay"

650t/ha is required and this would be considered a heavy application rate.

It is the interaction of the three key factors; current clay fraction of the target soil, the clay content of the "clay" being applied, and the incorporation depth that will dictate how much material will need to be applied.

For example, if clay percentage of applied "clay" was 38% rather than the 28% used in the example above, 475t/ha would be required to reach the target clay percentage of 5% to a depth of 300mm. If a speed tiller is the implement available for incorporation and as a result an incorporation depth of 15cm is all that can be reached, then this would further reduce the targeted clay rate to achieve the 5% clay percentage to 235t/ha. This demonstrates the interlinked nature of these key variables, and how they should be considered in combination with each other.



SCF DEMONSTRATION

The SCF demonstration site at Kojaneerup South, had three distinct claying application rates of 350, 270 and 140t/ha, with incorporation by offset discs to approximately 15cm. Although this depth is relatively shallow, the target constraint within this paddock is non-wetting soils, and the vast majority of the repellent properties lie within the top 15cm of the soil profile.

Results

Clay samples were taken from the clay pit on site, and the applied clay had an average clay fraction of 40.4%. Soil samples from the topsoil of the target paddock revealed that the current clay percentage is 1.7%.

All three clay rates significantly shifted the topsoil clay percentage (Table 1), with only the lightest application rate failing to achieve the targeted clay rate of 5%. The other two rates exceeded the best practice percentage of 5%. These results highlight the ability to vastly shift the clay percentage in topsoils when using a highly enriched clay source and a relatively shallow incorporation depth. While the 270t/ha and the 350t/ha ameliorated soils are above the 5% target, it is unlikely that this over application will result in any adverse effects, given the best practice target rate is often as high as 7% for soils with a high level of organic matter.

The results highlight the potential efficiency and productivity savings that can be realised when clay content is known before spreading. Unlike a lot of other agronomic inputs that can be dialled in on a precision level, productivity in clay spreading is largely dictated by the carrying capacity of the machines, the speed in which they spread clay, and the width of the machine. The machine used at Kojaneerup South could spread clay anywhere between <100t/ha and 270 t/ha per pass, depending on the speed the machine was traveling. To spread at higher rates, more than one pass would be required.

Incorporation depths

Table 1: The predicted clay percentage in the top 15cm at the Kojaneerup South claying efficiency demonstration site in 2022.

Clay application rate	350t/ha	270t/ha	140t/ha
Ameliorated topsoil clay %, incorporated to 15cm	7.0%	5.8%	3.8%
Change in topsoil clay %	5.3%	4.1%	2.1%

The fixed nature of the variables involved in clay spreading (clay fraction, topsoil texture, available spreading rates) limit what a grower can control. The fixed variables as well as the target soil constraint need to be considered when choosing incorporation implements and depth. For example, to solve a water repellence issue like the trial site at Kojaneerup South, a shallower incorporation method such as an offset disc, or speed tiller can be used. However, if targeting non wetting, plus eliminating soil erosion and improving soil water holding capacity, then a different implement will be needed to incorporate the clay deeper. For example a Plozza plough or a deep ripper. The incorporation depth will dictate the amount of clay a grower needs to spread to reach a 5% topsoil clay content.

A Plozza plough can incorporate clay to approximately 30cm while a deep ripper can incorporate clay to approximately to 50cm with inclusion plates. Using the soil parameters and claying rates at Kojaneerup South as an example, there are enormous differences of clay required (t/ha) depending on the depth of incorporation (Table 2).

This emphasises the value in having a clear understanding of exactly what you are trying to achieve before taking on a large-scale claying project. The above results show that the application rates needed to achieve the 5% targeted clay rate varies greatly depending on the incorporation depth. The machine used at Kojaneerup South to spread the clay might not be the most efficient choice if you were targeting a deeper incorporation depth, so consideration must also be given to the type of machine suited to the constraints you are targeting.

APPLICATION METHODS

SCF have observed three different methods of applying clay to sandy soils. Each method has its specific positives and negatives. One of the critical project findings has been that the current estimation of clay spreading rates is highly variable and based mainly on guesswork by growers and contractors.



Table 2: Changes in the soil clay percentage at different clay spreading rates (t/ha) when incorporated to soil depths of 30cm and 50cm. The red numbers represent the calculated amount of clay (t/ha) required to reach 5% topsoil clay from the two incorporation depths. The black numbers represent the actual clay rates spread at the Kojaneerup South demonstration site. NB: This table assumes the 1.7% clay rate measured in the top 15cm of the soil profile at Kojaneerup South is consistent to the max incorporation depth.

Clay incorporation method & depth (mm)	735T/ha	436T/ha	350T/ha	270T/ha	140T/ha
The topsoil clay % when incorporated to 30cm with a Plozza plough.	7.2%	5.0%	4.4%	3.8%	2.8%
The topsoil clay % when incorporated to 50cm with a deep ripper & inclusion plates.	5.0%	3.7%	3.3%	2.9%	2.3%

Self-Propelled scraper

A scraper was used to apply clay on Ben Webb's property at Scott's Brook (Southern Dirt), where the initial target rate was 250kg/ha. However, the scraper could not apply clay at this rate, because the speed limitations of the machine dictated the rate at which the clay was applied. Whilst the machine could be slowed down to increase the rate, the maximum ground speed sets the minimum application rate. The lowest rate we could apply on Ben Webb's property was approximately 400t/ha. This machine may not be suitable for farmers seeking to apply a low rate to achieve 5% clay content in the topsoil or where the incorporation depth will be shallow.

The advantage of the clay scraper is the high payload of >45t/ha and the relatively even spread of the product on the paddock. The cost of such a machine may also be lower on a per hectare basis than a carry grader or a Nufab 'Spreadit' machine.



Figure 1: Self-propelled scraper

Carry Grader

A carry grader is commonly used in the SCF region by contractors and growers. The positives of a carry grader are the speed of loading and speed of unloading. The clay spreading rate can be adjusted relatively easily by an experienced operator. A carry grader can also get in and out of the pit very quickly, spreading many tonnes of clay per hour. Carry graders can also use their own rippers to break up the clay before loading, which means you can complete the whole process without needing additional machinery. The downside is the lumpy nature of the clay being spread, although this varies significantly with the type and quality of the product applied. The method of re-distributing and incorporating the clay is critical and should complement the use of a carry grader, or any other machine. A carry grader requires a high powered 4WD tractor to pull the machine, and wear and tear is costly, either for the contractor you hire or for a grower's own machine.



Figure 2: Carry Grader



Nufab' SPREADIT'

This new machine was recently purchased by SCF members Josh & Tony Goad. The machines are common in other areas of WA, but this is the first machine to be used in the local area. The 'Spreadit' machine is designed like an oversized fertiliser spreader that is loaded via an excavator. The positive for this machine is that it spreads very evenly and can reduce its rate per hectare lower than a carry grader. This machine is more suited to growers wanting to apply rates closer to 100t/ha. Incorporation costs are also likely to be lower after using the SPREADIT because of the lower clay rate the even spread pattern.

Another positive is that the machine is easier to pull with a 4WD tractor and will likely have less wear and tear on the tractor over time. The machine requires less experience and skill to operate than a scraper or carry grader, which means labour to operate the machine will be more accessible. The negatives are that it requires an excavator to load, and loading time compared to a carry grader is much longer. We look forward to understanding more about this 'new' machine's positives and negatives over the course of this project.



Figure 3: Nufab 'SPREADIT'

FINAL NOTE:

During this early stage of the project, we are assuming that the yield benefits from clay spreading are maximised when the soil reaches a 5% clay content to the incorporated depth. At the Kojaneerup South demonstration site two of the three treatments exceed 5% clay at the incorporated depth of 15cm. We look forward to measuring the yield results from the clay treatments over the next two seasons. Anecdotal evidence from local growers would suggest that the highest clay rate at the demonstration site will have the highest grain yield. Research by David Hall (DPIRD) suggests that achieving 5% clay in the topsoil is sufficient to maximise yields and applying more than that is not economical.

ACKNOWLEDGEMENT:

We would like to acknowledge the previous research conducted by David Hall and other DPIRD researchers on 'clay spreading' as a soil amelioration strategy. We look forward to hosting a workshop in early 2023 where we will hear more from David and his experience in the Esperance Port Zone. We also thank David for providing SCF with the DPIRD "clay calculator" (Excel model) which allowed us to run the calculations.

SCF appointed as a Regional Node Lead for SW WA Drought Hub

Kathi McDonald, Communications Manager, SCF

SCF is pleased to announce our appointment as a Regional Node Lead Organisation for the SW WA Drought Resilience Adoption and Innovation Hub, led by the Grower Group Alliance (GGA).

Funded by the Australian Government's \$5 billion Future Drought Fund (FDF), the SW WA Hub has begun implementing activities such as the collaborative \$4 million WaterSmart Dams initiative, funded by the FDF and the State Government.

Led by the GGA, the Hub is utilising and leveraging the power of the GGA grower group network 'hub and spoke' model to facilitate greater innovation from 'the ground up'. Grower groups are among the Hub's more than 50 consortium partners, which represent all sectors of the WA agricultural supply chain and are providing cash and in-kind co-contributions. This focus on collaboration will enable the SW WA Hub to make agricultural research impactful and accessible, increasing innovation and commercialisation opportunities.

The Australian Government has expanded the remit of the SW WA Hub beyond drought resilience to agricultural innovation. However, drought resilience remains a core priority.

HUB GEOGRAPHICAL AREA

The geographical area of the SW WA Hub extends far beyond what many Western Australians know as our South West region. Within this national project, the Hubs are organised into regional areas that broadly reflect the key agricultural and climatic zones across the country. The SW WA hub is essentially everything south of the Pilbara and includes what those in the agricultural industry know as the entire southern agricultural growing region of WA.

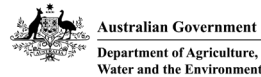
REGIONAL NODE LEADS

The South-West WA Drought Resilience Adoption and Innovation Hub has appointed Regional Node Leads, which will provide guidance on priority issues impacting the drought and climate resilience of farming systems, their industries and communities. Through nominated managers, the Regional Node Leads will help link the Hub to end users by gathering and sharing knowledge, coordinating local activities and support Hub activities.

GOING FORWARD

Keep an eye on our social media for more information on upcoming opportunities for farmer consultation and feedback on project ideas for the drought resilience and innovation space. For more information on the SW Drought Hub and its activities, head to <https://www.gga.org.au/activity/drought-hub/>

This program/project is supported by the Grower Group Alliance, through funding from the Australian Government's Future Drought Fund.



South-West WA Drought Resilience Adoption and Innovation Hub



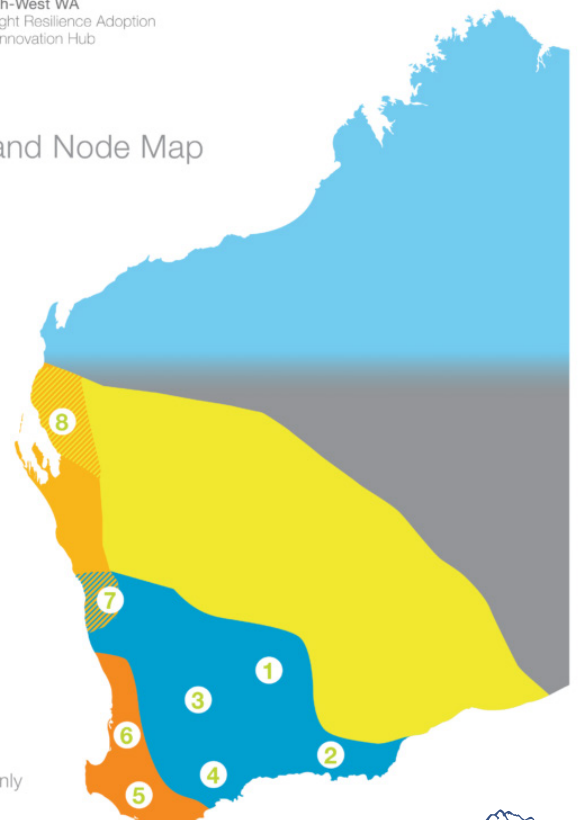
South-West WA Drought Resilience Adoption and Innovation Hub

South-West WA Drought Resilience Adoption and Innovation Hub

Agro-Ecological Zone and Node Map

- 1 Merredin
Merredin and Districts Farm Improvement Group
- 2 Esperance
South East Premium Wheat Growers Association
- 3 Narrogin
Facey Group
- 4 Albany
Stirlings to Coast Farmers
- 5 Manjimup
Southern Forests Food Council
- 6 Bunbury
South West Catchments Council
- 7 Geraldton
Northern Agricultural Catchments Council
- 8 Carnarvon
Rangelands NRM Co-ordinating Group

Map not to scale. Illustration purposes only



The Mount Barker Pivotel 4G Network is live and connecting users in the region. We are now inviting new users in the area to trial the network obligation free.

At Pivotel, we understand how frustrating the lack of reliable connectivity and coverage can be for Australians living and working in rural, remote and regional areas. With grant assistance from the Department of Primary Industries and Regional Development and support from Stirlings to Coast Farmers and local residents, we have built 9 mobile towers across Mount Barker, Kendenup and the surrounding areas that bring vital connectivity to farming families not serviced by reliable mobile coverage.

The Mount Barker Pivotel 4G Network delivers fast, reliable, low latency connectivity to where it is needed most, whether it's at the home or another site on the farm. The use of standardised technology gives users 4G data speeds with large data allowances and access to a huge range of 4G devices and applications, including the Pivotel App for Talk and Text (PATT™), an IP based mobile talk and text service with a standard Australian '04' mobile number and unlimited calling package.

As well as providing broadband internet services to homesteads, the Mount Barker Pivotel 4G Network delivers coverage to farming areas, improves personal communication and safety, and enables the connection of security cameras, sensors and other IoT devices to improve productivity across the farm.

Stirlings to Coast Farmers CEO Nathan Dovey said connectivity is an ongoing issue for farmers and regional communities.

"The biggest challenge for regional farmers is reliable internet and decent data speeds. Existing network coverage in the region comes with issues such as limited data usage and latency issues. With the Mount Barker Pivotel 4G Network we've got farmers who are getting internet speeds up to 20 times faster than their original network connection. It is also the consistency of the internet connection that is a really big win on the Pivotel network."

Local Mount Barker farmer Nathan Crosby has been involved in

the Pivotel project since 2019 and reiterated the importance of regional connectivity for the future of farming.

"Our fourth-generation family farm is a broad acre cropping farm. We've historically struggled with connection across the entire property with black spots for phone signals. The network is making our operations a lot safer. We often have workers working more than 10 kilometres away from anyone, and if something goes wrong, they've now got phone signal and can call for help – which is quite a big win for us.

"We've also been able to set up weather stations, which are really handy from a wind and rainfall point of view. It's quite easy to jump on your phone and have a look on the app and see what the wind is doing outside of the cab which can help us make decisions based around spreading and spraying."

Pivotel is currently inviting users to conduct a no obligation trial of the network for one month from just \$69.00*.

The trial includes:

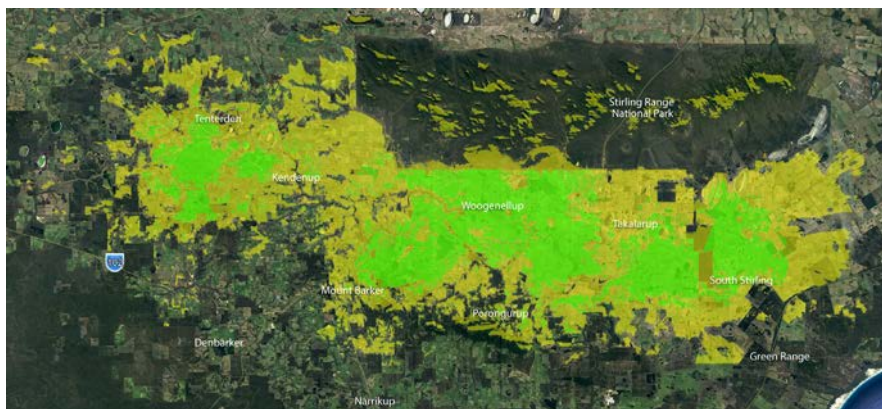
- A professionally installed service, including external antenna and modem
- 1x 4G Homestead service with 200GB of included data
- 1x 4G Mobile Data service with 5GB of included data
- 1x Pivotel App for Talk and Text (PATT) subscription with unlimited standard national calls and SMS

Need more than 200GB? No problems, Pivotel is also offering no obligation trials on higher inclusion plans, to view all available service plans visit www.pivotel.com.au/mt-barker-network.

At the conclusion of the one-month trial, Pivotel will contact you for feedback and see if you wish to continue with the service, or you can simply allow us to uninstall the solution with nothing more to pay.

If you'd like to know more, call Pivotel on 1300 882 448 or visit www.pivotel.com.au/mt-barker-network.

*Terms and conditions apply. Contact Pivotel for more information.



4WD coverage (using external antenna)



Homestead coverage (using external antenna)

Trial the Mount Barker Pivotel 4G Network obligation free for one month from just \$69*

The Mount Barker Pivotel 4G Network is live and delivering fast, reliable, low latency connectivity to where it is needed most.

We're inviting users to conduct a no obligation one-month trial of the Mount Barker Pivotel 4G Network. For just \$69.00* you'll get -



1x 4G Homestead
200GB Internet Service



1x 4G Mobile Data
5GB Service

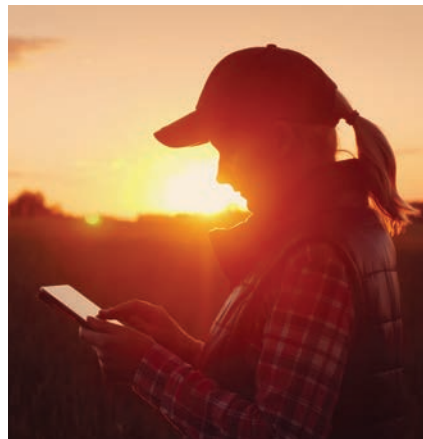


1x VoIP Service with Unlimited
Standard National Calls/SMS



Supply/Install of
Antenna & Modem

At the conclusion of the one-month trial, we'll contact you to see if you wish to continue with the service, or you can simply allow us to uninstall the solution with nothing more to pay.



For more information call **1300 882 448**
or visit www.pivotel.com.au/mt-barker-network

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Offer available until the 31st of October 2022. Offer may be withdrawn or varied by Pivotel at any time, at its sole discretion. Offer is not valid in conjunction with any other offer. Prices are in AUD, including GST and are subject to change. Offer and associated Pivotel Plans are available to credit approved customers only. If you elect to keep your service at the end of the trial installation and equipment fees will apply. For full terms and conditions visit www.pivotel.com.au/mt-barker-network.

Global fertiliser prices have skyrocketed even further in recent weeks. From the outset of war in Ukraine up to the end of March, Rabobank senior agricultural analyst Wes Lefroy said global urea prices increased in the vicinity of 70 per cent in US dollar terms, di-ammonium phosphate (DAP) by 50 per cent, and potash (MOP) by approximately 40 per cent. "Now, it's not only farmers concerned about the impact on yield – consumers too are starting to wonder what this will mean for food prices and availability," he said

Mr Lefroy said the good news is we expect the immediate impact of high fertiliser prices and supply uncertainty on crop production is limited, for a number of reasons.

"Fertiliser prices typically follow crop prices higher, with crop farmers across the globe incentivised to buy more fertiliser to produce higher yields when crop prices rise. When demand for fertiliser rises, prices follow. This relationship is distorted when supply issues, rather than increased demand, cause fertiliser prices to rise. In the past 12 months, Chinese export restrictions and Russia's invasion of Ukraine are examples of such supply distortions," he said.

"Still, our margin estimates suggest farmers will have the flexibility to chase yield. For example, we've estimated that French wheat farmers will have increased nitrogen costs of 232€/ha, while revenues are likely to increase 882€/ha, assuming average yields, compared with the 10-year average. We expect a similar story in the US Midwest, where corn farmers are facing increased nitrogen costs of 252USD/ha with increased revenue of 1,100USD/ha, compared with the 10-year average of both."

According to Mr Lefroy in Australia, where local crop prices haven't risen as fast as those globally, margins are likely to be tighter than these global estimates, but still positive.

"The second consideration is timing of fertiliser procurement. In the northern hemisphere, for example, farmers are about to plant their crops, so most of the fertiliser is either in the field, on farm or with the retailer, therefore, for this season at least, supplies look to be secure," he said.

"The southern hemisphere is where our concern lies, particularly for potash supply in Brazil, where it is the country's most important agricultural nutrient. Furthermore, Brazil is the world's largest importer of fertiliser and imports 40 per cent of its potash needs from Russia. We estimate a shortfall of five million metric tonnes of potash in Brazil needing to be filled before July."



Mr Lefroy said Australian farmers are also exposed given they are at the beginning of the import season for urea, with 65 per cent of Australian imports arriving between March and July. "We expect local supplies will be available, but supply risk is higher than usual.

"Even if farmers opt to use less fertiliser this year due to the higher prices, history suggests this does not have a direct impact on yield. In theory, farmers can 'mine' their soil for phosphate and potassium (potash) for a year in lieu of fertiliser applications, although this is not possible with nitrogen," he said.

Mr Lefroy said in 2008/09, when fertiliser prices and commodity prices were at similar levels, US farmers cut fertiliser applications by 34 per cent in the first year, and four per cent in the second, with no yield loss. "It was a similar story in Australia. In 2009, nitrogen sales here fell year-on-year by four per cent phosphate by 22 per cent and potash by 27 per cent, yet yields were stable," he said.

To find out more about other Rabobank research, contact Rabobank's Albany team on (08) 9844 5600 or subscribe to RaboResearch Food & Agribusiness Australia & New Zealand on your podcast app.

Rabobank Australia & New Zealand Group is a part of the international Rabobank Group, the world's leading specialist in food and agribusiness banking. Rabobank has more than 120 years' experience providing customised banking and finance solutions to businesses involved in all aspects of food and agribusiness. Rabobank is structured as a cooperative and operates in 38 countries, servicing the needs of approximately 8.4 million clients worldwide through a network of more than 1000 offices and branches. Rabobank Australia & New Zealand Group is one of Australasia's leading agricultural lenders and a significant provider of business and corporate banking and financial services to the region's food and agribusiness sector. The bank has 94 branches throughout Australia and New Zealand.



Fine Tune Your Fertilizer Strategy with inSITE Plant Analysis

Going into this season, global supply shortages for fertilizer have pushed prices up locally to a point where many growers may have reduced nutrient inputs. Demands on the soil have also been high, coming off a high production year last season with exceptional growing conditions.

Given this scenario, plant tissue testing is likely to be more important than ever this season. Plant analysis is especially useful as often there are no visual signs of a nutrient deficiency (hidden hunger) early on. Unlike soil testing, which predicts how much of each nutrient is likely to be available, plant testing reflects what's actually available to the root system.

Tissue testing early on can be especially useful in identifying trace element deficiencies which can otherwise be

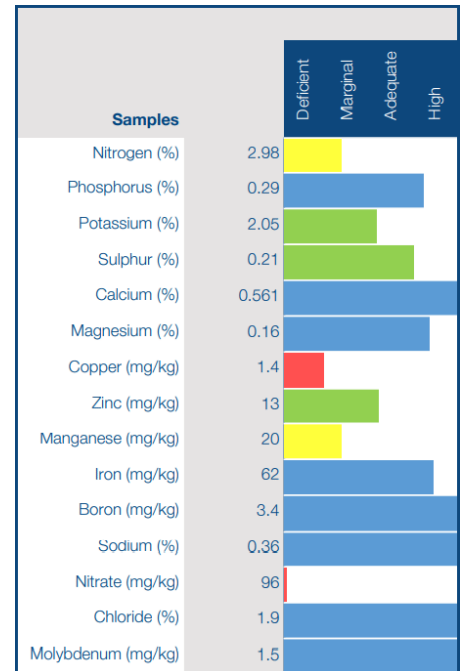
difficult to diagnose. In many cases follow up foliar spraying can be used to correct or mitigate the identified deficiency.

Through Summit's partnership with APAL, we are able to offer our comprehensive inSITE Plant Analysis service, delivered by your local Area Manager trained in the best plant sampling techniques. Results are available quickly and can be accessed online through SummitConnect.

If your interested in Plant Tissue Testing this season get in touch with Mark Ladny or Andrew Wallace.

Andrew Wallace, Area Manager - Albany (East), 0427 083 820.

Mark Ladny, Area Manager - Albany (West), 0498 223 421.



Above: inSITE Plant Analysis provides a complete breakdown of the nutrient status of a growing crop.



Nutrien Ag Solution's Animal Production Specialists

Nutrien Ag Solutions has developed a team of Animal Production Specialists to provide on-farm technical advice and services to cattle & sheep producers across the state to assist in maximising their productivity and profitability. Servicing the southern region of the state is Bridie Luers, our Animal Production Technical Services Advisor. Bridie is a veterinarian who graduated from Murdoch University with a Bachelor of Science and Bachelor of Veterinary Medicine and Surgery. She has since worked in private rural mixed practice in the great southern and has completed further study in ruminant nutrition. In her role with Nutrien Bridie provides on-farm technical advice and services to both cattle and sheep producers covering the areas of livestock nutrition, health and production. Bridie has a particular interest in disease investigation and management, ruminant nutrition, and the red meat supply chain.

Services which the Animal Production Specialist's provide include:

- Annual livestock production plans
- Ration formulation and nutritional advice
- Parasite control programs
- Drench resistance testing & worm egg counts
- Disease investigation & post-mortem examination
- Fodder testing & analysis
- Animal health & nutrition workshops
- R & D extension projects
- Animal health grower group facilitation

Please feel free to contact Bridie if you would like any assistance.



Bridie Luers M: 0407 955 351
E: bridie.luers@nutrien.com.au

Federal Government Historical Soil Data Capture Payments Program

Opportunity to receive payments of up to \$10,000 for soil data

AxisTech has been appointed by the Federal Government as a data broker for the Historical Soil Data Capture Payments Program to gather and preserve soil data from data owners and landowners and make it centrally and publicly available for others to use. The program is now open and as our valued client, we invite you to contribute your soil data to the program which will provide payments up to \$10,000 to farmers or landowners. This provision of data will be facilitated by AxisTech using our AxisStream data management platform.

Participation in the program will help build a new national soil information system and enable further understanding of Australia's land, soil, and natural resources. Historical soil information will help build a better understanding of the condition and health of Australia's soil spatially and over time to assist in better targeted soil research, policy, and programs. Soil data can be used to create regional benchmarks to support natural capital opportunities, provide expanded data inputs for research and innovation, and support the next generation of farmers make better decisions about future farming techniques.

ABOUT THE PROGRAM

The government recognises the importance of healthy soil in supporting agricultural productivity and environmental sustainability. In May 2021, the National Soil Strategy was announced, outlining three key goals: prioritise soil health; empower soil innovation and stewards; and strengthen soil knowledge and capability.

To preserve Australia's soil data and make it accessible, the Department of Agriculture, Water and the Environment is capturing privately owned historical soil data and, through a sublicensing and payments scheme, making the soil data available on a national information system.

Historical soil data refers to soil data from a soil sample collected and analysed in Australia by a laboratory or a soil testing service prior to 1 January 2022 in accordance with accepted scientific methods or standards.

PARTICIPATION IN THE PROGRAM WILL INCLUDE:

- sharing access rights to soil data through a data sharing agreement
- completing a qualitative survey
- entering into a commercial agreement with AxisTech as data broker to receive a financial benefit of up to \$10,000 (GST inclusive) for sharing soil data.
- payments made to the data owner based on the number of soil properties (i.e. physical, chemical and biological soil characteristics) tested per sample as follows:
 - \$50 – 5 soil properties
 - \$100 – between 6 and 10 soil properties
 - \$150 – between 11 and 15 soil properties
 - \$200 – more than 16 soil properties

WHO IS ELIGIBLE?

A data owner can be a farmer, land manager or an entity that owns soil data. To be eligible, all applicants must:

- be based in Australia and be Australian citizens.
- have full ownership of the intellectual property (IP) rights for the historic soil data
- provide data that has been tested in a certified laboratory in Australia before 1 January 2022 and that has qualifying metadata such as geolocation (latitude/longitude), collection/analysis date/time, and have a minimum of 5 tested soil properties

In addition, all applicants must agree to:

- Sign a commercial agreement to receive payment and acknowledge the transaction
- Sign a data sharing agreement allowing AxisTech as the data broker to access data and to share it with the Commonwealth
- Complete a qualitative survey to help administer the program

AXISTECH'S ROLE AS A DATA BROKER:

AxisTech will liaise with data owners to access historical soil data and will collate, manage, and conform the data to meet program standards. AxisTech will share this soil data with the government making it available through ANSIS.

AxisTech will engage with data owners to:

- determine the quality, value, and eligibility of their historical soil data
- sign a data sharing agreement to gain access to the data. This agreement will outline how the data broker and government can access, store, and use soil data shared with the program
- complete a qualitative survey to provide information about land management practices to help administer the program and provide context to the data
- enter into a commercial agreement to provide payments to data owners.

MORE INFORMATION:

Please visit: <https://axistech.co/soil-data/> or email soildata@axistech.co

Additional information is also available on the program website:

<https://www.awe.gov.au/agriculture-land/farm-food-drought/natural-resources/soils/historical-soil-data>

SCF BEHIND THE SCENES

BOARD AND COMMITTEE MEMBERS 2022

Stirlings to Coast Farmers 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.

FINANCE COMMITTEE

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Shannon Slade
Mark Preston
David Brown
Nathan Dovey (SCF CEO)
Taryn Graham (SCF)

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Philip Honey (SCF)
Kelly Gorter (SCF)

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Mark Preston	0427 834 200
Shannon Slade	0477 197 970
Jeremy Walker	0437 955 443
Amy Sims	9842 5155

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Philip Honey, Smart Farms Coordinator	0428 768 589
Dan Fay, Project Officer	0498 278 177
Kelly Gorter, Livestock Officer	0409 060 065
Dr Kathi McDonald, Communications Manager	0408 418 531
Samantha Cullen, Memberships Officer	0417 605 784
Samantha Jeffries, Marketing Officer	0422 332 212

The SCF team is based at the SCF office located at 75 Albany Highway (opposite Dome) in Albany. Staff can be contacted on 9842 6653 or admin@scfarmers.org.au

SILVER SPONSORS

