Spring 2024

Fertilizer News

A fine day out for the Summit field tour

For Summit Fertilizers to deliver the most up-to-date and relevant advice, it's important our team keeps up with current research and farming practices. Each year, one of our Area Managers is charged with the responsibility of organising a team field trip in their area. This year, Juliet McDonald (far right) who covers the North Midlands region organised the day. The team above were photographed at Erregulla Plains with Paul Flanders, Altora Ag Farm Manager.

Summit Fertilizers North Midlands Area Manager, Juliet McDonald, managed to find a rare fine day in late August to host the annual Summit staff field tour. The day was ideally placed amongst weeks of overcast and wet weather that helped turn fortunes around for North Midlands growers; so there were plenty of smiles all round.

The tour started with an early morning address at Port Denison by Agrarian Management Managing Partner, Paul McKenzie.

Paul has 30 years' experience in agribusiness, management, finance, and more recently in growing his own crops in the historically low rainfall area of the north-eastern wheatbelt.

His personal insight into growing crops and managing the risk in a low rainfall/fallow farming system was fascinating.

Continued next page.

Help us help you with our 2024/25 FSO

The Summit 2024/2025 Fertilizer Supply Offer (FSO) is now open. By participating in our FSO program you'll qualify for a farm Productivity Package rebate, which includes a suite of services and products to help improve the profitability of your farm business; such as a rebate on inSITE soil and plant testing (on all tonnes collected by the end of July 2025).

Nominate our fixed supply contract within the FSO period and you will also be given priority access to available product.

You can choose a:

- Fixed fertilizer supply contract (where the product, price, quantity, depot, and month of collection are fixed at the time of signing); or a,
- Variable fertilizer supply offer for increased flexibility.

For ease of doing business a wide range of payment and credit options are available to approved customers. Our FSO closes at the end of October 2024. For more information, contact your local Summit Area Manager now!

For more information talk to your local Summit Area Manager

SUMMIT FERTILIZERS

Ben and Jamie McTaggart (third and second from the right) who farm at Mingenew have offered up a longer term trial site to Summit to test the crop availability of various sources of sulphur.

Paul started by explaining his priority has been to 'fast-track' his return on investment by 'fast-tracking' the removal of pre-existing production constraints.

"The biggest cost incurred in many farm businesses is the opportunity cost of delaying a comprehensive soil remediation strategy," he said.

Low pH and soil compaction

Along with low rainfall Paul has identified very low pH in the topsoils and subsoils and soil compaction as major limitations to crop production in the area.

A hefty investment in lime has worked in combination with a program of deep ripping with the machine tines angled. Clay plates help to move fine particles up the profile on the sandy soils, and a soil conditioner packs the topsoil down and leaves indents.

The whole process breaks the soil open and enables the rainfall to pool and penetrate, rather than run off.

It is a fine example of enhancing water use efficiency, and better capturing the limited rain that does fall.

It also improves soil aeration so the roots can penetrate deep into the profile. The strategic use of fallow adds further to available soil moisture for the crop year. One of the most intriguing points of Paul's address was the need to identify and work with a vastly different biological system to what many growers are used to.

He mentioned the lack of earthworm activity in the dry soil conditions; yet termites thrive in the same environment. In his system this usually unwanted pest fulfils an important role in stubble breakdown, nutrient recycling and availability.

Long term sulphur trial

From there the Summit team travelled by bus to just north of Mingenew to meet with Ben and Jamie McTaggart, where Summit has at long-term sulphur (S) trial.

Canola response to different fertilizer sources of S was investigated in 2023. Unfortunately, a meagre growing season rainfall (GSR) of just 100mm meant there were no significant differences in seed yield or oil content between any of the rates or sources of S that year.

2024 has been a completely different scenario with GSR when the Summit team visited close to double that of the 2023 total.

This year's sulphur trial in Scepter wheat was sown in early May.

Under investigation are various rates of S applied in:

- gypsum,
- elemental S,
- or S in the form of sulphate of ammonia (nitrogen applied in SOA was basaled out across the trial).

A high rate of 180kg S/ha was included in this trial, just to test what a luxury supply would do.

Interestingly, plant density counts from all treatments and rates were sufficient, with no differences in crop establishment from applied S.

Searching for a better S test

Along with sulphur form and rates, this trial also aims to compare sulphur testing procedures.

Sulphur soil testing is usually done using a KCl-40 extraction. There has been recent discussion though as to whether the older, mono-calcium phosphate (MCP) test may be a better indicator.

Both tests have been done to a depth of 100cm. Because of its high mobility, topsoil tests are often unreliable in predicting responses to additional S, hence the need for deeper subsoil sampling.

The team then moved on to

Erregulla Plains, stopping off on the way to view some of Juliet's in-season N, K and S Fuel Gauges. After visually assessing them for leaf area and greenness - both on and off the strips, the last field visit of the day was to meet with Paul Flanders, Altora Ag Farm Manager.

Enhanced Efficiency Fertilizers

Altora Ag is kindly co-operating with Summit by providing a trial site this season to test part of our range of Enhanced Efficiency Fertilizer (EEF) products. The trial is part of a bigger statewide program Summit has and investigates the uses and benefits of the N-Shield product range.

"These products can have an effect on volatilisation, leaching and denitrification of applied nitrogen in our farming systems," said Juliet.

"When we discussed the trial with Paul, he was happy to be involved. Their big program means it's not always possible to get all their nitrogen out in ideal conditions.

"Depending on what the trials show us, if rain is unlikely within a few weeks, growers might look at applying a urease inhibitor to help reduce the potential for N volatilisation.

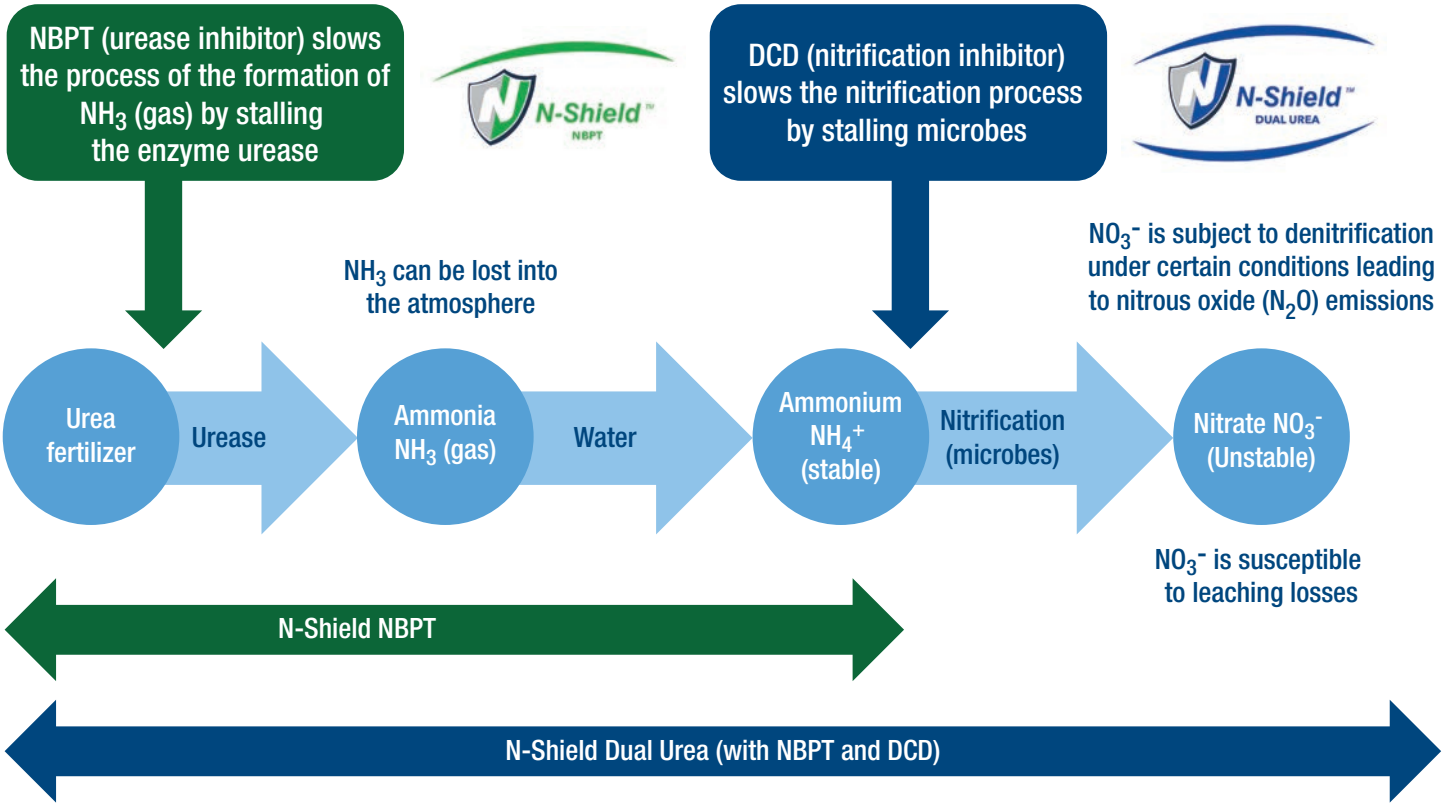
"They could be used in that way as a bit of an insurance policy.

"It may allow growers to be more strategic with machinery or labour use, and still have the N there when the rains come.

"So these N trials could be of interest to all growers," Juliet said.

Summit Fertilizers North Midlands Area Manager Juliet McDonald with Altora Ag Farm Manager, Paul Flanders assessing treatments in the EEF trial at Erregulla Plains.

Below is a schematic representation of N-Shield NBPT and Dual and how they work.



A snapshot of some of the more significant

Each year Summit Fertilizers processes thousands of soil samples from across WA. Samples are analysed by an independent laboratory, and the results help guide our clients to make more informed fertilizer decisions. They also provide us with valuable long-term information on soil health and nutrition trends.

As our farming systems keep evolving, our soils too will continue to change in their condition and nutrient status.

In this spring newsletter we report on some of the noteworthy regional trends and nutrition updates, with a focus on:

- pH;
- phosphorus (P);
- and, potassium (K) content.

North Midlands region pH

2023-24 topsoil and subsoil pH readings from the North Midlands shires of Mingenew, Three Springs, Carnamah, Coorow, Morawa and Perenjori are a good news story indeed! When compared to Summit samples taken back in 2014-15, both topsoil and subsoil pH have shown healthy improvement.

Most WA crop and pasture species have proven to perform best when topsoil pH is above 5.5 (in $CaCl_2$) and subsoils above 4.8.

pH values below these can reduce the availability of many soil nutrients and reduce root exploration via an increase in availability of the toxic form of Aluminium (Al).

Figure 1 (left) clearly shows the benefit from investing in lime and soil amelioration in the North Midlands. Summit testing in 2023-24 showed 72% of North Midlands region topsoils sampled had pH above 5.5. That's a significant improvement on the 43% from samples taken in 2014-15.

Midland region subsoils have likewise benefited with a similar trend. 70% of the regions subsoils were measured with pH of above 5 in 2023-24, compared with 41% in 2014-15.

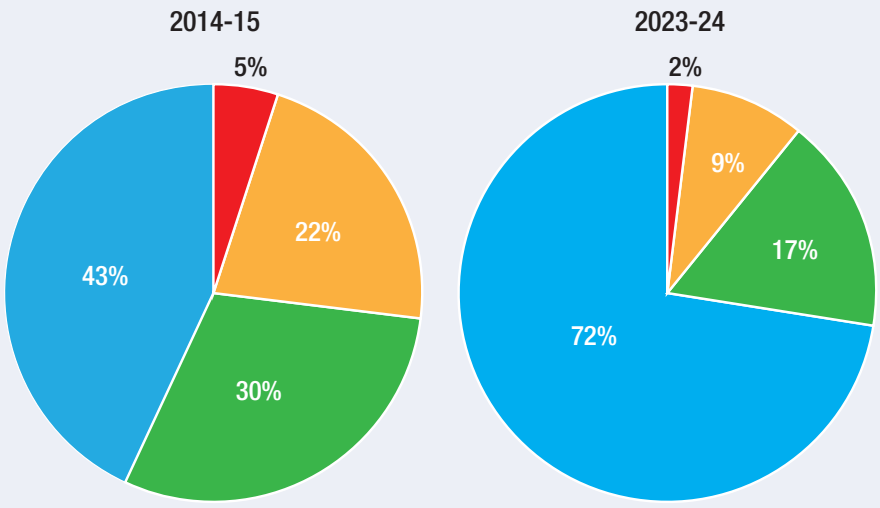
Extensive amelioration programs would most likely have helped with this shift, by moving applied lime into the subsoil.

Not only can improved topsoil and subsoil pH increase root exploration and the availability of most nutrients, it can enhance soil conditions to increase the survival of soil organisms such as bacteria, legume inoculum, and earthworms.

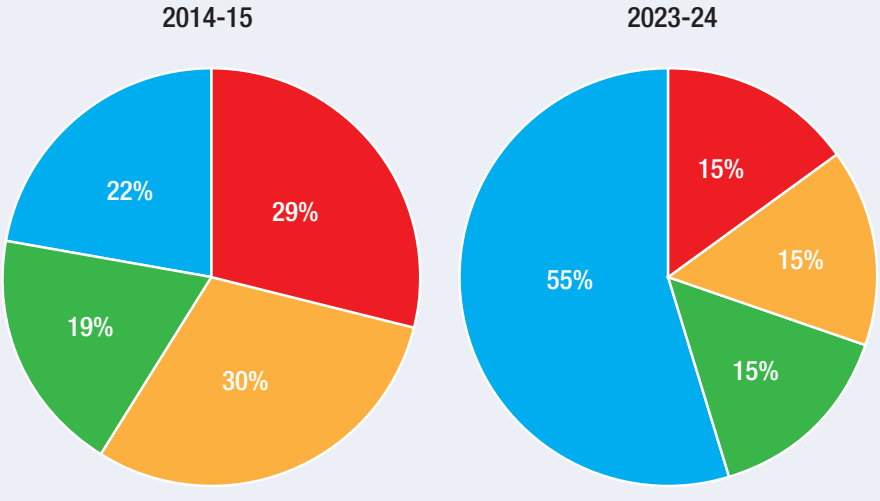
The data indicates many paddocks in the North Midlands region are now better placed than they were a decade ago to take full advantage of applied fertilizers and favourable seasonal conditions.

Figure 1.

Topsoil pH, North Midlands region



Subsoil pH, North Midlands region



Soil pH (in $CaCl_2$) <4.5 4.5 - 5.0 5.0 - 5.5 >5.5

P & K

Critical soil test values for P and K are harder to determine as definitively as pH. Soil type, rainfall, crop or pasture type and other soil test parameters need to be considered along with pH, to build a more complete picture of P and K status.

North Midlands region Colwell P test results for 2023-24 are shown in Figure 2 (above right).

Summit inSITE gives a "P status" indication that takes all soil test

regional trends in soil health

parameters into account to advise the likelihood of a response (or lack of) to P application.

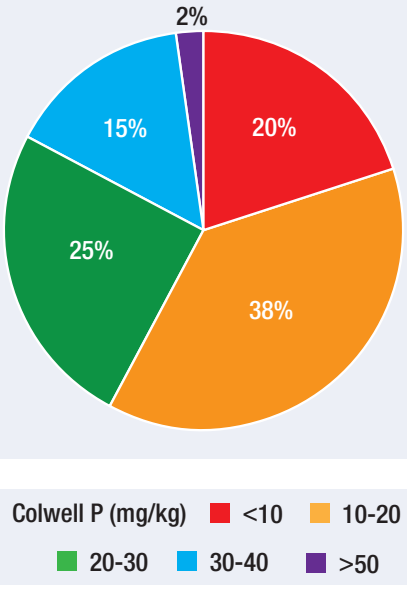
Topsoil samples taken in the North Midlands region in 2023-24 showed close to 60% had Colwell P readings below 20mg/kg.

It's a surprising result given 2023 applied P was followed by such a poor growing season in the area. But, perhaps not surprising given the huge crops and nutrient removal in the previous years.

Summit trials are continuing to evaluate the new DGT-P test as a potentially better method than the Colwell P test for identifying responses on soils with a PBI > 30.

Figure 3 shows topsoil and subsoil K results. We know how difficult it is to increase soil K on very sandy soils. The best strategy on these soil types is to apply K until you get to a stage where responses are less visible/common. In-season Summit K gauges can help assess your K status. Plant testing can also provide valuable insight.

Figure 2. Topsoil P
North Midlands region
2023-24



Key messages

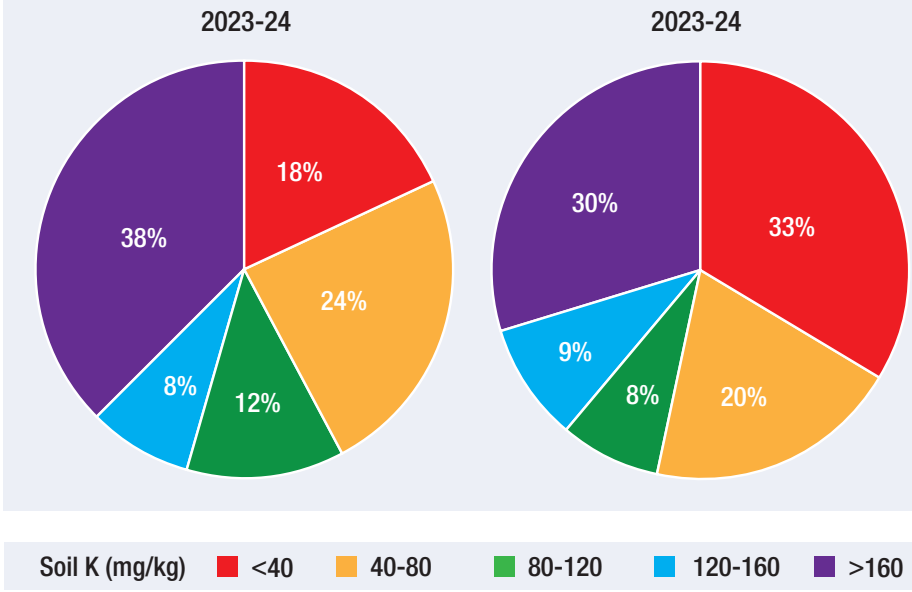
North Midlands region growers should continue to keep an eye on nutrient removal.

Make sure areas that test low in plant available P are addressed and rates are in balance with yield potential. Maintain a replacement strategy on sites that have adequate P.

Nutrient removal calculations are a good way to get an overview of what you are exporting. Post-harvest calculations will help fine tune your rates so you can adjust your fertilizer order accordingly.

Lastly, have a long term-nutrition vision. You would want to be in the position in five or ten years time whereby soils still have healthy pH and, P and K levels are not limiting farm production.

Figure 3. Topsoil K (below left) and subsoil K (below right)
North Midlands region



The DGT-P test

The Summit Fertilizers partnership with independent soil and plant analysis laboratory APAL, introduced a new procedure to WA growers to gauge plant-available soil P.

The DGT-P test differs from more conventional soil extraction methods in that it mimics the action of plant roots.

An iron oxide gel disc is placed on a saturated soil sample. The gel acts as a sink, binding forms of P that are able to diffuse through the soil solution and through an additional gel membrane, just like a cell membrane in root uptake.

The amount of P bound to the gel is then measured.

Summit P trials are continuing to build our knowledge on the value of DGT-P tests, relative to crop response.

Eastern Wheatbelt topsoil K values unearthed

As far as soil testing and crop responses go, potassium (K) is a nutrient that can be hard to define.

Many WA soils are duplex and hold a considerable amount of potassium at depth. Given a favourable start to the season and good early crop growth, the plant roots grow down and can explore enough of the subsoil to access K reserves.

Some crops, such as canola and lupins, are better able to extract K and recycle it from depth than wheat or clover.

In the Eastern Wheatbelt in Kobus Marais' area (Nungarin, Mukinbudin, Westonia, Merredin, Yilgarn) topsoil measured for K back in 2014-15, showed only 4% of samples fell below 40mg/kg.

This is where canola and lupins typically respond to applied K.

Almost a decade later in 2023-24, 10% of topsoil sampled by Summit from the same area were below 40mg/kg.

In 2014-15, 23% were below 80mg K/kg which is where cereals typically respond to K.

A decade later 38% were below 80mg K/kg, which highlights a rundown trend in topsoil K.

The percentage of samples measuring 80 to 160 mg K/kg has remained relatively unchanged, however samples measuring more than 160 mg K/kg (luxury levels) reduced from 46% to 32%.

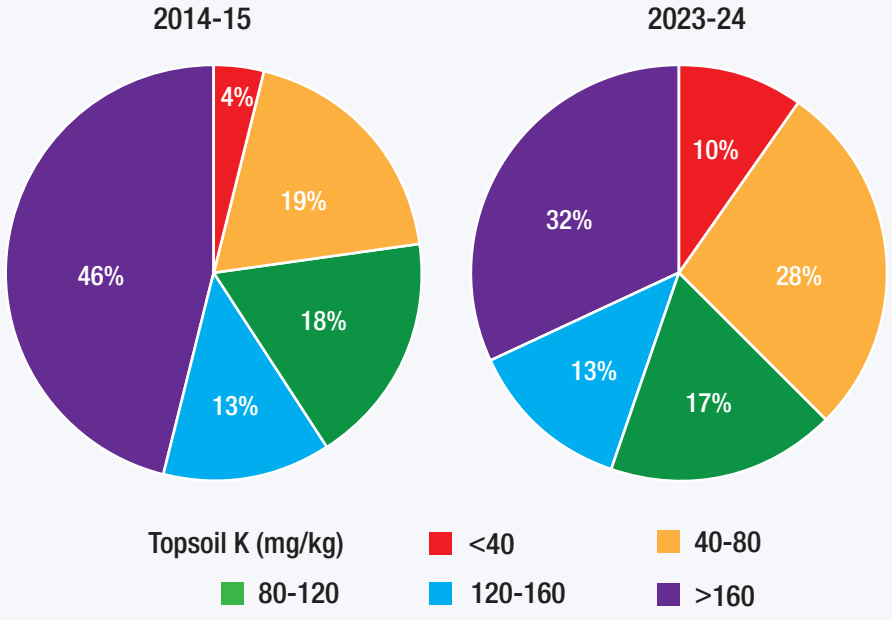
These findings back-up Kobus' eastern wheatbelt trial observations and highlight the need for an increased awareness in the area on K nutrition due to soil rundown.

Responses do vary, so reference to your own soil test data is recommended to gain a better perspective.

Subsoil sampling will show K values in the different zones. These need to be taken into account when determining the need to apply K.

Plant analysis is another useful tool to see if adequate K is being accessed by the plant.

Figure 4. Topsoil K, Eastern Wheatbelt



SUMMIT CONNECT

SummitConnect is our online customer portal, where customers can view both their fertilizer transactions and inSITE soil and plant test history.

SummitConnect is available on the Summit Fertilizers App or via web browser. Download the App on your mobile device from the Apple App Store or Google Play.

If you have questions on how to sign-up for SummitConnect or how it will benefit you, please contact your Area Manager

Albany depot hours increased to meet huge demand

The extraordinarily dry summer and late break to the season in the South West resulted in growers holding back on fertilizer pick-ups.

When the season did break, it really came in a big way. Our Albany depot staff quickly became immersed in the task of getting orders ready and despatching fertilizer volumes that were up by 50%.

At Summit we consider fast, efficient despatch to be a hallmark of our operations. We aim to ensure non-stop truck movement through the depot. It's part of our commitment to doing business.

One of the ways we tackled the issue of moving this exceptionally large volume of fertilizer in a very compressed period of time was to extend Albany depot trading hours.

Summit would like to acknowledge the huge effort of our staff that made this all happen.

For Albany depot appointments and enquires on operational issues, growers should contact:

Nardia Humphries
Phone: (08) 6819 6300
Mobile: 0428 415 400
albany@summitfertz.com.au

Keep an eye out for this year's Summit trial results

As a whole, the 2024 Summit trials program is in good shape. We keenly await yield results and follow-up gross margin analysis to add to the in-season data we have collected.

This year a total of 34 trials have been set-up across 22 sites.

Of course, testing different nutrition regimes and new technologies, such as an emerging array of Enhanced Efficiency Fertilizer (EEF) products, is only possible with the help of growers. So we would like to thank all those who have helped us this season.

Summit has 20 trials in wheat, five in barley, five in canola and two in pasture.

Fourteen trials feature EEF options. They include N-Shield NBPT and N-Shield Dual Urea. Promising new products UAN Guard and Hydroguard are also under evaluation.

Our long-term trials are continuing. Three are researching buildup/rundown of phosphorus and potassium, and two investigate sulphur sources and leaching.

From here the task is to wrap-up the results and make them available to growers for next season. That is best done through our Area Managers so make sure you keep in touch. Contact details are on the back page.

This season the Summit Field Research Team is using CropX weather stations and soil moisture probes (shown above) at many of our trial sites. The probes can detect leaching events and monitor soil moisture over the season relative to rainfall. On-site monitoring will further our understanding of conditions at the sites to better interpret field results.

Summit Northam based Area Manager, David Armstrong (top right) was out in early July helping Field Research Officer Isaac Gilchrist with the Goomalling trial. They were applying N-Shield UAN Guard, which is an Enhanced Efficiency Fertilizer product currently under evaluation. By early September crop growth in the trial had really taken off and the trial was looking promising ahead of the Central Ag Spring Field Day presentation.

In 2024 Summit has a trial in conjunction with the Stirlings To Coast Farmers Grower Group. Investigating NKS rates, the trial was looking in great shape in time for the Group's Field Day. An aerial view shows plot differences, not only to applied N, but also between low and high K and S treatments. Summit Area Manager Mark Ladny in Denmark is the best contact for this trial.

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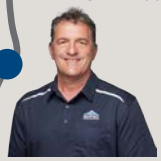

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