Autumn/Winter 2024

Pasture News

Early N and S to drive pasture production

The early and abrupt finish to spring rainfall last year followed by an unprecedented dry summer and start to autumn this year, has made farming conditions in the Southwest very challenging indeed.

Most growers are now managing livestock through a scenario of low available paddock feed and high supplementary feed costs.

It's putting a lot of stress on farm budgets and given the current circumstances, it's never been more important to have a well considered pasture nutrition plan. You'll want to accelerate early growth and grow your way out of the current situation as quickly as you can.

So it's back to basics and the first thing to consider is the current nutrition status of the soil.

A hot dry summer and autumn has delivered nothing in the way of soil moisture to initiate organic matter mineralisation. A compounding concern for the months ahead would be that if we go into a cold winter, there won't be a lot more early to mid-season mineralisation of nutrients.

Nitrogen (N) and sulphur (S) are key elements released in mineralisation, so a key focus early should be on N and S. A good balance will be critical and early pasture growth will be slow if there isn't enough of either of them in the soil in an available form.

A factor to remember with N and S is that they are both quite mobile in the soil, however S is not as mobile in the plant. This means soil S availability needs to be constant through the season, because the plant doesn't have the ability to store and translocate this nutrient as required,

Ralph Papalia
Summit Area Manager/Agronomist
Bunbury

S is important in the synthesis of amino acids, hence it is important for the amount of protein a pasture can produce, and it is involved in a wide range of plant metabolic processes.

Good available S levels in the soil have been associated with higher lamb survival, increased wool production and overall increased weight gain of livestock.

There have been many studies showing that S applied at the same time as N increases nitrogen use efficiency; therefore you are getting better 'bang-for-buck' out of your N spend.

Soil testing really is the best starting point for this years soil nutrition decisions. Summit has state-of-the-art soil and plant analysis through our inSITE program.

The next step is choosing the best fertilizer to match your farms requirements. The table (left) shows just some of the Summit NS products and I have included some NKS options as well.

The Summit Fertilizers nitrogen, NS and NKS range

Product	Nutrient content (%)			t/m^3
	N	K	S	
Amsul	21.0		24.0	0.95
MAXam	21.0		24.0	1.01
MAXamFLO	22.0		6.2	1.26
NitroPlus	33.5		12.0	0.85
Sulphate of Ammonia	21.0		24.0	1.07
UreaPlus	37.3		8.4	0.82
UreaS	41.6		4.2	0.79
NKS21	28.8	12.5	5.7	0.88
NKS32	25.6	16.5	5.3	0.91
NKS Spring	22.0	14.0	10.7	0.94
UAN	32.0			1.32
Urea	46.0			0.75

For more information talk to your local Summit Area Manager

SUMMIT FERTILIZERS

Early urease inhibitor results are encouraging

Improved nitrogen use efficiency was a focal point for Summit research in 2023, with particular interest in products that have the potential to reduce urea volatilisation.

The Summit Field Research Team incorporated NBPT (N-(n-Butyl) thiophosphoric triamide) based urease inhibitor into a number of trials.

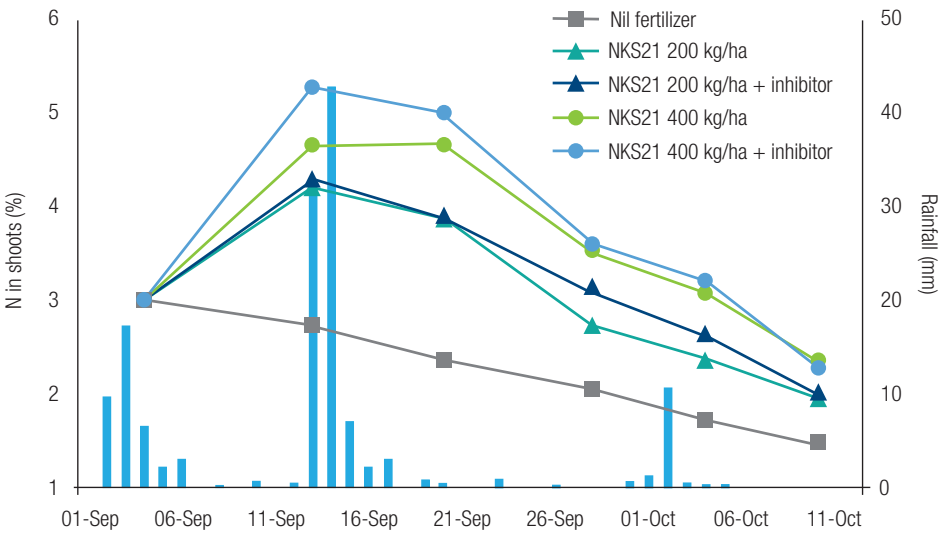
Weather conditions in 2023 were not particularly conducive to either volatilisation or nitrification. Hence the results generally showed no substantive increase in production from the use of inhibitors. Importantly though, no net negative impacts on profitability were seen.

Measurements taken in pastures uncovered some very interesting plant physiology responses that require more investigation this year.

One example is an increase in shoot tissue nitrogen (see figure below).

Research to clarify the optimum use scenarios for these inhibitor products will increase in 2024.

In 2023, Summit conducted urease inhibitor trials on pasture. The Harvey pasture site (picture above) showed favourable shoot tissue nitrogen concentration responses (figure below) that deserve further investigation this season.



Pasture shoot tissue nitrogen at Harvey through a grazing cycle. Fertilizer excluding and including NBPT applied 4 September. Bars are daily rainfall (mm).

Protecting your urea investment

For growers who apply urea and have to cope with conditions that can reduce its' efficacy i.e. unpredictable follow-up rainfall, warm/windy weather, high-pH soils, or rainfall leaching events, Summit has released two exciting new solutions.

N-Shield NBPT and N-Shield Dual are new options for 2024 and are designed to optimise nitrogen use efficiency. They are the first of the Summit Enhanced Efficiency Fertilizer (EEF) range of products.

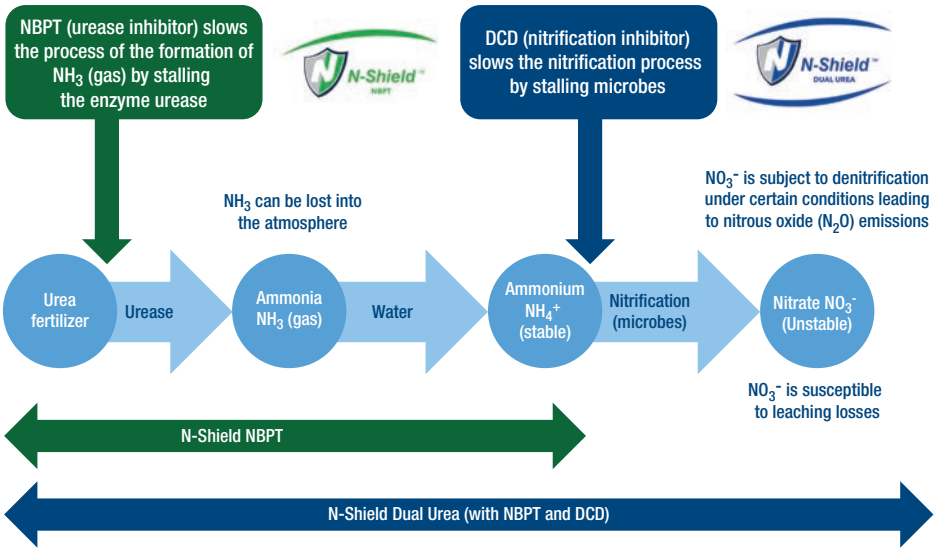
N-Shield NBPT contains N-(n-butyl) thiophosphoric triamide (commonly known as NBPT).

NBPT slows down the conversion of urea to ammonium by inhibiting the enzyme 'urease'.

Ammonium gas is an intermediary in that conversion and can be lost to the atmosphere (volatilisation).

NBPT provides protection against volatilisation after light rain events and can last up to 28 days (depending on weather conditions). Full urea release typically occurs after individual rainfall events of 6 mm or more.

It is important to note that N-Shield NBPT is in a unique environmentally-friendly position, because it does not include N-methyl Pyrrolidone in the solvent package (a known carcinogen often used in other NBPT products).



Growers wanting another level of protection for their urea applications should consider N-Shield Dual.

N-Shield Dual is a premium urea fertilizer, suited in particular to higher rainfall situations.

It has all of the protection benefits of the NBPT in N-Shield NBPT, with the added benefit of Dicyandiamide (DCD).

DCD controls the release of nitrogen by maintaining it in the more stable NH_4^+ form for longer.

The addition of DCD to NBPT In N-Shield Dual has the added potential to reduce leaching losses, and could conceivably lead to less frequent N applications at higher rates.

N-Shield Dual is the only high active dual inhibitor on the Australian market.

Growers wanting more information on these exciting 2024 urea developments should contact their local Summit Fertilizers Area Manager.

Summit Fuel Gauges add real value to soil testing

Soil analysis is a great starting point when considering the reserves and likely availability of nitrogen (N), phosphorus (P), potassium (K) and sulphur (S) in your soils. It gives an accurate reading at the time of sampling.

However, not all of these macro nutrients behave the same in the soil. For example, nitrogen and sulphur are a lot more mobile than phosphorus, which is relatively immobile.

N and S can be leached beyond the root zone by significant rain events. That's why deficiency can occur even when soil testing has shown healthy reserves in the soil.

During winter it's not uncommon to see deficiency in Southwest pastures, especially on lighter soils that have a base of sand or gravel.

Legumes are particularly sensitive to S deficiency because of the role it plays in the symbiotic fixation of nitrogen by Rhizobia bacteria in the root nodules.

So while soil testing is a great starting point, we need to continue to develop the practice of monitoring in-season nutrient availability.

Each year Summit Area Managers put out hundreds of Fuel Gauges across the State. A Fuel Gauge is a non-limiting supply of the nutrient you are wanting to assess. Nitrogen Fuel Gauges are the most common, but they can also yield valuable in-season updates on S, K even P.

For Southwest Area Managers Chloe Turner, Mark Ladny and Ralph Papalia, pasture Fuel Gauges continue to add to the bank of knowledge we have on pasture growth.

Annual grass species in particular can display excellent growth responses to early nitrogen, as seen in one of Mark Ladny's Fuel Gauges pictured right. If you see that sort of response you know your pastures are deficient.

Partnership expands Summit's services offer

2024 signifies an important landmark in Summit's technical service offering as we officially announce we are the CropX distributor for Western Australia.

CropX is a digital farming solutions company founded in New Zealand in 2013. Their vision is to integrate soil sensor technology with digital platforms, to help growers better understand and utilise available soil moisture.

What they do

CropX is all about data-driven decisions for improved agronomy, i.e. real time measurements from your own farm paddocks, interpreted by smart systems, helping you make better decisions.

Central to the CropX system is patented hardware including:

- the CropX Soil Sensor. These are wireless and easy to install with a unique spiral design. They monitor below ground soil moisture and electrical conductivity;
- the CropX digital rain gauge; and,
- the CropX Telemetry Device, capable of connecting to a wide range of third party sensors and other devices.

While the hardware is what you can see and feel, CropX is also at the forefront of software development for agronomy management. They integrate hardware and data analysis to enable clear and accurate learning of real-time on-farm conditions, and the best way to manage the area for a particular outcome.

How they do it

Artificial intelligence algorithms and machine learning provide a huge amount of power for the CropX system. Combined, they turn a complex set of relationships into recommended actions to improve on-farm decisions and resource management.

The CropX system

- Monitors your soil moisture and learns about its profile through the behaviour of wetting and drying cycles through time. This information provides predictions of crop water availability.

Bunbury based Summit Fertilizers Area Manager Ralph Papalia discusses the concept of CropX farming solutions with Serpentine Dairy Farmer Geoff Manning. Ralph is showing Geoff the CropX Soil Sensor with its spiral design to help facilitate easier installation. This sensor collects data on soil moisture, temperature, and electrical conductivity.

- Monitors sub-surface soil temperature, which can assist with decisions such as sowing timing.
- Measures soil electrical conductivity. This can help monitor salinity over time and also detect vertical movement of nutrients (such as nitrogen) down the soil profile after leaching events.
- NDVI and Soil Adjusted Vegetation Index (SAVI) monitoring of crop and pasture growth. SAVI integrates an NDVI correction for soil reflective brightness.
- Can pre-emptively indicate high disease risk and/or pest outbreak conditions for a wide range of crops (driven by AI analysis).
- Utilises a range of predictive weather data sources to guide best spray timings.

This just touches the surface of what CropX can provide with the features accessible through both desktop and mobile app platforms.

More information will be released with trials planned for 2024.

cropx

www.cropx.com

Hot off the press

A new feature to the CropX digital farming solutions system is technology and hardware to determine evapotranspiration. It interconnects soil moisture measurements with water use, for a more complete picture of water movement in the paddock and through the plants.

This and more farm machine data features are nearing roll-out.

Pushing early pasture growth to bridge the feed gap

Season pasture update by Chloe Turner. Chloe covers the shires of Boyup Brook, Katanning, Kojonup, Wagin, Woodanilling.

This season's soil test results for clients in my area have come back as mostly nitrogen (N) deficient. With the severe shortage of pasture feed and current high stocking rates, I know growers are keen to achieve quick early growth to take the pressure off supplementary feeding.

So the key issue for many will be nitrogen management. Sulphur (S) is another essential element for livestock production to enhance plant growth along with bacterial protein synthesis in the rumen, which in turn increases wool, meat, and milk production and overall quality.

Given how much of the budget has been spent on feeding animals over summer and autumn, I understand the importance of a quick return on your fertilizer investment.

Grasses are much more efficient than clovers to get up and going for early production. A good rule of thumb is grasses need NKS and clovers need PKS for their macro-nutrient requirements.

Where growers have kept up the phosphate and potash history, I'm recommending a good hit of N and S to get things started, as even clovers are going to need some N until they can fix their own.

The three most popular NS products Summit can supply are Sulphate of Ammonia (SOA), Amsul and MAXam.

SOA should really only be spread by itself because it has the consistency of sugar, and it won't spread as far as Amsul (chip) or Maxam (granule), which are used in most blends.

The larger the size of the product being spread, the further the throw from your spreader. In general, most spreaders can throw SOA around 12 to 15m in good weather conditions. Spread pattern of this finer product is also noticeably more affected by wind than larger granules.

Bigger granules like Maxam and urea can generally be spread about 25m, although this will obviously vary depending on the type of spreader.

I mention these factors because application costs need to be included in the fertilizer budget, along with the potential for windy weather to impact on the spread pattern, or even stop spreading for a while.

Given the sharp end to the season last year, it's likely that seed set was minimal, and the quality of seed would most likely have been poor, if the plants were able to set seed at all.

If budgets allow, it might pay to look at reseeding some of your better pasture paddocks or scratching some cereal seed into pastures to boost early growth.

Crop grazing smaller paddocks is also an option to defer grazing of pastures, if it's viable to do that.

If you are considering crop grazing, make sure to take livestock off the paddock before the Z30 growth stage. This will reduce the potential for yield penalty.

Generally only let stock crop graze for a week at a time so there is still some leaf area for plants to recover.

Chloe Turner
Summit Area Manager, Kojonup

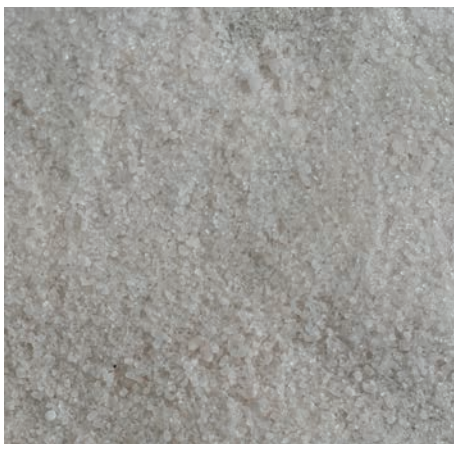
Crop recovery after grazing will require top-up N to try to get it to re-tiller efficiently before stem elongation.

Barley is most often the best option when looking to either seed cereals into pasture or crop graze. Compared to oats or wheat, it has a better capacity for re-tillering.

Some growers have previously experienced reduced disease pressure with crop grazing, which could help save on early fungicide sprays, but does leave the canopy more open and will likely lead to weed problems.

Other things growers need to consider when applying N early are:

- Putting out a short double rate strip of N during spreading to show your soils responsiveness to more N.
- If applying urea instead of SOA, you'll need to apply it prior to a good rain to mitigate any volatilisation losses.
- Be careful of nitrate poisoning, which is more likely to occur when feed is scarce, so withhold stock for 3 to 4 weeks when high rates of N are applied.



SOA - Crystaline Sulphate of Ammonia

Amsul – Compacted Sulphate of Ammonia

MAXam – Granular Sulphate of Ammonia

50,000 tonnes of extra UAN storage capacity

The new UAN liquid storage facility at the Kwinana Depot.

Summit's investment in bulk UAN storage at the Kwinana Depot has reached a critical milestone with an additional 50,000 tonne of liquid storage now operational.

As soon as final testing was completed, locally manufactured UAN started flowing in for this season.

Over the past decade there has been an ever-expanding demand for liquid N, in particular for UAN and it is important Summit is well placed to meet current and future fertilizer needs.

This large-scale infrastructure investment has been important to help shore up UAN supply to clients.

During periods of peak demand, the depot has coped well in the past. However, with increasing volumes of UAN needed in the future, we will benefit from greater storage capacity.

Greater UAN storage capacity is an important step in improving our operational flexibility, and it will benefit customers in a range of ways.

For example, we can now handle bulk cargos of formulated UAN.

Ammonium nitrate and UAN do not always trade in parallel on the international market. This flexibility gives us the option to buy bulk UAN or manufacture it ourselves.

Additional storage opens up a whole range of exciting possibilities for the future.

Express UAN despatch with weighbridge loading

With growers gearing up for the new season and transport contractors busy, our depot staff are working as efficiently as possible to ensure your fertilizer is ready to be picked up and on-farm in time.

A unique and seamless process Summit has for moving ever increasing volumes of liquid fertilizer through the Kwinana Depot faster and more efficiently, is with a loading facility to fill trucks directly on the weighbridge.

This means drivers who pickup bulk UAN do not have to load, then get weighed, then potentially off-load or load more to get the right weight required.

At Summit we are always striving to make it easier for you.

Feedback on ALOSCA blends has been positive

There were some highly practical and beneficial fertilizer additives that gained a lot of interest from growers last year. For those that wanted to boost the presence of legumes in their pastures, ALOSCA Granules generated great feedback.

Inoculating legumes with the right rhizobia is well documented to improve legume growth, nitrogen fixation, soil nitrate levels and increase yield.

ALOSCA Technologies has put a lot of effort into selecting the best rhizobia strains for each legume type i.e. clovers (Group C), medics (Group AM) along with other strains for the array of legume crop varieties.

ALOSCA Granules are bentonite-clay based and this carrier is impregnated with the plant specific rhizobia strain.

In terms of application the grower has a couple of options.

They can buy the product and add it at the recommended rate when transferring fertilizer to the seeder or spreader. For a grower applying 200 kg of superphosphate per hectare, they would need a blend ratio of 20:1 super:ALOSCA and managing that accurately on-farm can be problematic.

For the sake of simplicity and accuracy, most growers choose to let us blend the ALOSCA Granules with their fertilizer.

Feedback has been observations of very good clover nodulation, the clover as a percentage of the pasture has increased, along with improved in-season dry matter production and pasture quality.

ALOSCA is showing to be a very versatile addition to fertilizer. It can be put out with fertilizer at any time, although growers really need to consider the best time is when there is good moisture and the legume roots are actively growing.

There needs to be enough moisture to break down the granule, release the rhizobia and wash them into the soil. Once in the soil they will move down with water movement to the plant root zone. The rhizobia themselves are also capable of swimming, so the importance of a good supply of soil moisture cannot be stressed enough.

Best conditions for rhizobia survival are when soil moisture and warm soil temperatures combine.

To achieve the best nodulation result, it is also worth mentioning the importance of the trace element molybdenum. Molybdenum acts as a cofactor for the nitrogenase and nitrate reductase enzymes, which are important for nitrogen fixation, nitrate reduction and nitrogen transport in plants.

While that might all sound complicated, it comes with a simple message really. We encourage growers to have molybdenum in the fertilizer with ALOSCA because it has shown to be important in the nodulation process.

Suitable Summit fertilizers with molybdenum are in the table below.

Table 4. Summit products with Moly, suited to blending with ALOSCA Granules

Pasture Range	P	S	Ca	Cu	Zn	Mo
Pasture CZM	18.7	6.0	14.6	0.60	0.30	0.04
Super Copper Zinc Moly	9.0	10.8	9.7	0.60	0.30	0.06
SuperPasture Copper Zinc Moly	13.8	8.4	17.2	0.60	0.30	0.05

Prescription blending of fertilizers by the Summit Bunbury Depot really does go hand-in-hand with our site specific soil and tissue analysis. It's all about identifying what your farm paddocks actually need, and then delivering high quality products and fertilizer blends that meet those needs. The Summit Bunbury Depot has the capacity to apply a wide range of coatings to fertilizers, as well as blend products and additives together to meet individual requirements.

Summit news your way, your choice!

Summit has for a long time offered our Newsletters in direct mailed print form. We thought it about time we give you more choice as to how you can receive this, along with other up-to-date news we have available!

If you prefer, you can have the Newsletter emailed straight to your inbox. Or, you can choose to receive via both email and mail.

Just let us know by sending your delivery preference to:

marketing@summitfertz.com.au

Please include:

- your name,
- trading name, and/or
- customer number.

Social Media too

Between newsletter issues there is always plenty happening at Summit.

Trials are going in, field days are being held, community functions are being supported and our Area Managers continue to go about their business helping customers.

We'll also keep you updated on things like fertilizer availability so you're completely up-to-date with the latest Summit news.

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Summit Fertilizers pasture products

Product	Nutrient content (%)								t/m3
	N	P	K	S	Cu	Zn	Mo	Ca	
Pasture		18.2		10.0				14.19	1.07
Pasture Boost		17.1		14.8				13.34	1.06
Pasture Boost Potash		10.5	19.0	9.7				8.23	1.08
Pasture CZM		18.7		6.0	0.60	0.30	0.040	14.58	1.07
Pasture Potash 11		6.4	32.5	3.9				4.97	1.09
Pasture Potash 21		9.1	25.0	5.3				7.10	1.09
Pasture Potash 31		10.9	20.0	6.3				8.52	1.08
Pasture Potash 32		7.8	28.5	4.7				6.10	1.09
Pasture Potash 41		12.2	16.5	6.9				9.51	1.08
Pasture Potash 51		13.1	14.0	7.4				10.22	1.08
Super CZM		9.0		10.8	0.60	0.30	0.060	19.72	1.15
Super Potash 1:1		4.6	25.0	5.9				10.00	1.13
Super Potash 2:1		6.1	16.5	7.6				13.40	1.13
Super Potash 3:1		6.8	12.5	8.4				15.00	1.14
Super Potash 3:2		5.5	20.0	6.9				12.00	1.13
Super Potash 4:1		7.3	10.0	8.9				16.00	1.14
Super Potash 5:1		7.6	8.5	9.2				16.60	1.14
SuperPasture		13.6		10.5				17.10	1.11
SuperPasture CZM		13.8		8.4	0.60	0.30	0.050	17.15	1.11
SuperPasture Potash 11		5.5	30.0	4.6				6.84	1.10
SuperPasture Potash 21		7.9	21.0	6.4				9.92	1.11
SuperPasture Potash 31		8.7	18.0	7.0				10.94	1.11
SuperPasture Potash 32		6.8	25.0	5.6				8.55	1.11
SuperPasture Potash 41		10.0	13.5	7.8				12.48	1.11
SuperPasture Potash 51		10.4	12.0	8.1				12.99	1.11
Superphosphate		9.1		11.0				20.00	1.15
Supreme	5.3	13.6		13.5				10.64	1.04
Supreme Potash	3.6	9.1	16.5	9.3				7.10	1.06
Muriate of Potash			50.0	0.7					1.10
Sulphate of Potash			41.5	17.0					1.28

Contact your Summit Fertilizers pasture specialists

Harvey, Capel, Dardanup, Busselton, Bunbury, Collie, Augusta-Margaret River, Bridgetown, Manjimup, Donnybrook, Nannup, Pinjarra, Waroona.

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