

DIG DEEP

Industry Insights from Incitec Pivot Fertilisers | October 2024 | Edition 03

Global Trading Overview
Securing Australia's urea supply
Soil tests get K levels right
The power of leaf tissue testing
... and more





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Cover Image: Fiona McDonald and Natalia Gomez at the IPF volatilisation trial in Gippsland, Victoria.

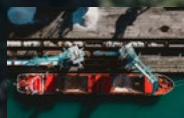
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L to R – Therese Walton (Portland Site Manager) and Steve Heinze (Portland Plant Operator).

PRESIDENT'S NOTE

Welcome to the third edition of *Dig Deep*

I'm pleased to introduce this edition of *Dig Deep*.

Our role in the \$80 billion Australian agriculture sector extends beyond supplying over 2 million tonnes of fertiliser each year to the east coast of Australia. The work we do across the country underpins the productivity and profitability of farm businesses and the broader agricultural industry.

Over the past few months our commitment to enhancing operational efficiency and sustainability has continued, most recently with a \$20 million investment in our upgraded fertiliser import and distribution facility at Portland in regional Victoria.

The facility's official re-opening in August marked another significant chapter, reflecting our dedication to supporting Australian agriculture, a sector critical to both our economy and the global food supply.

IPF's investment in infrastructure and research isn't just about increasing output; it's about future proofing our business and ensuring farmers

have access to the best products and services to drive productivity. The introduction of more efficient technology at the Portland site for example, now allows us to coat Enhanced Efficiency Fertilisers like Green Urea NV® and eNpower® on despatch. These products have the potential to reduce greenhouse gas emissions by up to 70% in some scenarios, showcasing our commitment to sustainability.

Our dedication to innovation and sustainability was also recently recognised with an Australian Financial Review (AFR) award for sustainability, alongside previously being ranked the No.1 trusted brand in chemicals and fertilisers for 2023 from Roy Morgan agri-research. This is a testament to the hard work and expertise of our team, who continue to inspire productivity both within our business and for our customers.

In this edition you'll read about Australia's largest downstream investment in agriculture in decades, how soil sample testing can help growers get their potassium levels



Scott Bowman

right ahead of next season, how our recent \$2.5 million investment in the EASY Liquids site at Whitton will deliver improved efficiencies and a greater product range, our role in supporting Australia's strict biosecurity regulations and controls, and much more.

In the months ahead across Australia's east coast our IPF teams will continue to drive productivity improvements across the agricultural industry by delivering for our customers and farmers. This includes our valuable soil and plant testing analysis and agronomic advice.

I hope you enjoy reading this latest edition of *Dig Deep*!

Regards,
Scott Bowman

President, Incitec Pivot Fertilisers

GLOBAL TRADING OVERVIEW

Q2 2024 in review

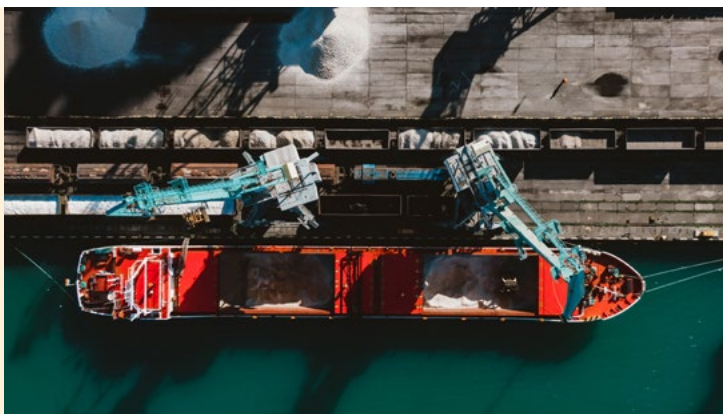
In the past few months, Ammonium Phosphate (AP) prices have experienced a significant rally, driven by strong global demand that has outpaced supply, while Urea prices have remained stable to slightly firmer.

The key supply constraint has been China, where export availability remains tight and uncertain.

Production issues in South East Asia and the lack of exports from China have supported global market prices for Urea.

Ammonium Phosphate (AP)

- AP prices have rallied strongly since the end of May in response to robust global demand outstripping supply within the same timeframe.
- China's export availability remains tight and uncertain, acting as a key supply-side constraint.
- Solid demand has crystallised in key markets such as Pakistan, India, the United States (US), and Brazil.



Nitrogen

- Urea prices have been stable to slightly firmer over the past 2-3 months.
- Production issues in South East Asia, coupled with the lack of exports from China, have provided general support to global market prices.
- Volumes into the recent Indian tender were on the lower side of expectations, with India's buying levels not meeting producer sales price levels. This provides the opportunity for an additional tender in the short term.
- Demand is expected to increase in South American and European markets in the coming months.
- Tensions in the Middle East remain a volatile factor for the Nitrogen market, particularly Urea markets.
- Global energy prices and supply will become a greater focus as we approach the Northern Hemisphere winter season.

Looking ahead

► **The current market dynamics and prices for AP** are expected to remain well-supported over the next 2-3 months as India seeks to satisfy Rabi demand and Chinese exports remain limited.

► **Various global macro risks**, including conflicts in the Middle East, the war in Ukraine, the US Presidential Election, Chinese economic recovery, and energy costs, are expected to continue influencing the market.

► **The AUD is likely to remain unstable** as global markets grapple with growth and inflation concerns, and interest rate policies remain uncertain.

► **Government interventions in key markets** will continue to impact the market. Notable examples include export controls in China, the Nutrient Based Subsidy in India, and Countervailing Duties (CVDs) in the US.

► **Key crop prices are fluctuating**, impacting growers' terms-of-trade, however they are broadly supportive of current fertiliser values.

► **Price risk**, in response to all the above factors, global pricing is likely to remain dynamic and deliver continued volatility, however, key indicators suggest a period of continued market firmness.

Securing Australia's urea supply

\$AUD 6.5 billion Perdaman urea plant being constructed in WA to supply IPF exclusively from 2027



Incitec Pivot Fertilisers (IPF) has invested in a 20 year agreement for up to 2.3 million tonnes of urea fertiliser, underpinning the largest investment in Australian agriculture in decades. Perdaman are currently constructing the \$USD 4.5 billion (\$AUD 6.5 billion) facility to supply Incitec Pivot exclusively from the Karratha Western Australia plant for 20 years.

The facility when operational in 2027 will be one of the largest and most efficient producers of urea in the world producing in excess of 5500 tonnes per day. For IPF, this partnership marks a strategic investment in the future of Australian agriculture, guaranteeing a local, high-quality fertiliser supply for Australian growers, reducing reliance on imports and supporting domestic food security.

A game-changer for Australian farmers

IPF President, Scott Bowman, emphasised the benefits the project will bring to Australian farmers, saying that it's a 'game-changer' for customers.

"By securing supply from a domestic source, we are not only shortening shipping times but also ensuring more consistent and reliable fertiliser availability across the country. It represents a direct investment in productivity for Australian agriculture," Mr Bowman said.

"The high-quality urea produced at Karratha will allow our farmers to access a locally made product, cutting reliance on international markets and giving them greater certainty, especially during critical planting and growing seasons.

"The Karratha facility will be one of the most energy-efficient urea plants in the world, using low-emissions technology to produce fertiliser with a reduced carbon footprint.

"For our farmers this means access to a product that supports productivity while also contributing to their sustainability goals."

A strategic investment for Australian agriculture

IPF's agreement with Perdaman is not just about securing supply, but will also deliver several critical advantages to Australian farmers, including:

- **Reduced shipping times:** Local production means faster shipping to Australian distribution sites, particularly during peak demand periods, reducing the risk of delays.
- **Enhanced quality and reliability:** Being the newest urea plant in production, production standards and new technology will provide farmers with a consistent and high-quality product.
- **Lower gas intensity:** The plant's efficient design and processes mean that it will rank as one of the more energy efficient urea manufacturing plants in the world, having a lower emissions profile than other sources.

Stay tuned for further updates in upcoming editions of *Dig Deep* as the project moves closer to completion, setting new benchmarks for innovation and excellence in Australia's fertiliser industry.

EASY LIQUIDS

EASY Liquids Whitton site expands

Work is nearing completion on IPF's \$2.5 million investment in the EASY Liquids site at Whitton in the heart of the Murrumbidgee Irrigation Area of New South Wales. The establishment of an on-site tank farm will deliver improved efficiencies and a greater product range for growers in the region.

Less than two years after IPF's acquisition of operations at Whitton and Moree in NSW and Boundary Bend in Victoria, IPF is delivering on its commitment to invest in manufacturing in regional Australia and enhance the local distribution points for liquid fertilisers to key agricultural markets.

EASY Liquids Operations Manager, Dale Richter, who oversees the three EASY Liquids sites, said establishment of the self-bunded, self-contained tank farm is anticipated to be complete by the end of September.

"When complete, Whitton will have capacity for 5 million litres of storage," Dale said.

"The purpose in building the tank farm is to have a full tank farm on-site to deliver productivity gains, and to bring the site above standard in our ever-growing commitment towards the environment.

"We will have greater flexibility with an expanded product range that will be available all year round for growers..."

"It will bring all of our storage in-house on the same parcel of land, and we will gain efficiencies in manufacturing by being able to send finished product direct into large storage tanks.

"We will have greater flexibility with an expanded product range that will be available all year round for growers, and an improved ready supply of product, including large-scale storage of nitrogen, potassium, phosphorous, calcium and other product.

"Whitton supplies an agricultural area spanning across a radius of about 300 kilometres.

"Growers of permanent plantings including almonds, walnuts, citrus, and grapes, and broadacre farmers including cotton growers in the region will directly benefit from the Whitton investment."

Dale, who was among the experts to join the IPF team following IPF's acquisition of the business, said as in agriculture, no two years are ever the same in the fertiliser industry.

The Whitton investment follows on from IPF's investment in the EASY Liquids Moree site, where works including the installation of new tanks and a bigger bunded area have been completed.



EASY Liquids Whitton site.

If you would like to speak to one of the Easy Liquids team, either as a reseller or grower please reach out directly to any of the team or email ben.anderson@incitecpivot.com.au



BEN'S GONE FISHING!

We have recently drawn the winner of our IPF EASY Liquids boat and fishing package and we are pleased to announce that **Ben Edyvean** from **Gunyah Pastoral** is the winner.

Ben was drawn from nearly 200 entries and was eligible after purchasing two loads of SULSA 27 from the EASY Liquids Whitton site.

Lucky Ben has won a Quintrex Busta 420 boat package and an EASY Liquids fishing pack including a YETI Tundra® 45 cooler, two fishing hats and shirts, two stubby coolers and a \$500 BCF gift card.

By ordering any bulk load of EASY N or EASY Liquids product for delivery between 1 May and 15 July 2024, each grower automatically went in the prize draw.

Delta Ag Coolamon was the successful reseller which sold Ben the product and has also won an EASY Liquids fishing pack.

AGRONOMIC INSIGHT

Soil tests get K levels right

Potassium (K) is highly mobile within plants and is vital for many functions. However when symptoms of K deficiency emerge it's generally too late to manage in the current season. That's where soil sample testing can help get K levels right ahead of next season.

Article by Fiona McDonald

Why K matters

K is involved in many plant functions, with its primary role associated with moisture regulation by controlling the opening of stomatal cells, which control water transpiration/loss. Some crops have a high K requirement and remove large quantities in export produce such as hay, silage, potatoes or nuts, when compared to grain crops.

Soils contain a large amount of K, however only a small amount of it is available for plant uptake. Once K is within the plant, it is very mobile and is readily transferred from older leaf and root tissue to younger tissue at the growing points. As a result deficiency symptoms are generally seen in older parts of the plant.

Across all Australian agricultural areas production figures and fertiliser use has revealed a negative K balance of around 400 kt/year, which equates to removing 3.2 times more K than what is replaced (Norton 2017a).

K deficiency symptoms

K deficiency may present as low vigour, weak growing plants, poorly developed root systems and

small leaves. These crops can have increased incidence of lodging, frost, or disease risk. Plants suffering severe symptoms will have yellowing of interveinal areas near leaf margins, leaf scorch, firing or spotting.

Generally once symptoms have been discovered it's too late to manage the deficiency in the current season. Instead it's a case of planning ahead for next season by completing a soil test and applying adequate fertiliser.

Test is best

Recent consolidated Nutrient Advantage data has shown a large amount of variability in soil samples. Whilst critical soil values differ per crop type, it demonstrates the importance of soil testing in farmers' regimes to stay on top of potential productivity losses associated with low K.

Figure 3 shows over 40,000 aggregated soil tests from Nutrient Advantage laboratory in the last year from across Australia.

Routinely monitoring K with soil analysis will help to identify situations before production losses occur. K export with produce reduces soil K

levels but lighter textured sandy soils may also lose K via leaching in high rainfall environments.

Surface and shallow applications of K fertilisers and the return of crop residues to the soil surface are enriching the upper level of soils. If we're seeing a possible K deficiency, then taking a sub soil test (10-30 cm) may provide a better understanding of levels further down the profile. A plant tissue test is also an option to confirm if a soil could be responsive to K.

The Nutrient Advantage Laboratory measures the availability of soil K with industry relevant methods such as Ammonium acetate, Colwell and Nitric acid tests. These tests are commonly packaged alongside other nutrients that use the same method or additional analytes to determine any other limiting factors. Interpretation of soil and plant tissue analysis results can be conducted with NA Pro software.

Please follow the correct soil and plant tissue sampling guidelines to get an accurate interpretation and recommendation. These can be found on the Nutrient Advantage website: nutrientadvantage.com.au

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The power of leaf tissue testing

IPF Technical Agronomist, Lee Menhenett

As the 2024 growing season progresses, it's a great time for farmers to turn their attention to plant nutrition and take tissue tests in pastures.

Leaf tissue testing is an underused tool for optimising plant health and productivity, especially in forage crops like lucerne and clover. These pasture legumes are highly dependent on specific micronutrients, particularly boron and molybdenum, which are essential for their growth and nitrogen-fixing capabilities.

Understanding the importance of these nutrients through targeted leaf tissue testing can significantly enhance the quality and yield of these valuable forage crops.

Value of leaf tissue testing

Leaf tissue testing provides a snapshot of a plant's nutritional status, offering insights that soil tests alone cannot. While soil tests measure nutrient availability in the ground, leaf tissue tests reveal how effectively those nutrients are being taken up and used

by the plants. This is particularly important for managing trace elements like boron and molybdenum, where soil tests may not always accurately predict plant uptake.

For lucerne and clover, sampling must be precise, according to species, growth stage, and the specific plant part sampled. The results help identify whether nutrient levels are deficient, low, optimal, or high, so farmers can make informed decisions about nutrient management. Correcting deficiencies identified through leaf tissue tests can also lead to significant improvements in crop health and productivity.

Data insights

Figures 1 and 2 show the temperate pasture tissue samples received by Nutrient Advantage Laboratory between 2019 and 2024. Results highlight the high incidence of below optimal micronutrient levels, particularly with boron in clover and molybdenum in both lucerne and clover.

The data shows that 45% of clover samples and 44% of lucerne samples were deficient in molybdenum. In the case of boron, 53% of the white clover samples were deficient in boron. However, only 21% of lucerne samples were below optimal, indicating that lucerne may be better at accessing or utilising boron from deeper in the soil profile.

Molybdenum: A vital nutrient for nitrogen fixation

Molybdenum plays a crucial role in the nitrogen (N) fixation process in legumes like lucerne and clover. This process is essential for rhizobia bacteria attached to legume roots to convert atmospheric N into a form the plants can use for growth. A deficiency in molybdenum can lead to poor root nodulation, reducing the plant's ability to fix N, which in turn affects overall plant health and yield.

A molybdenum deficiency can severely impair the N-fixing ability of the rhizobia, leading to poor production. With poor N-fixation,



IPF Technical Agronomist, Fiona McDonald.

Table 1: Percentage of tissue samples in each optimum range.

MICRONUTRIENT	PASTURE	DEFICIENT	LOW	OPTIMAL	HIGH
Molybdenum	Lucerne	44	25	31	
	Clover	45	7	48	
Boron	Lucerne	10	11	77	2
	Clover	26	27	47	

Figure 1: Molybdenum levels (mg/kg) 2019-2024

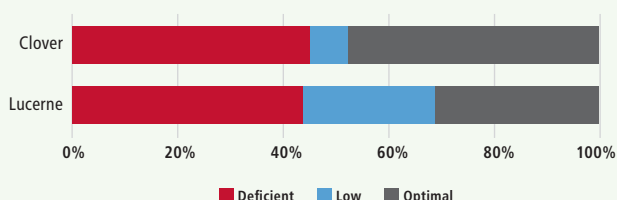
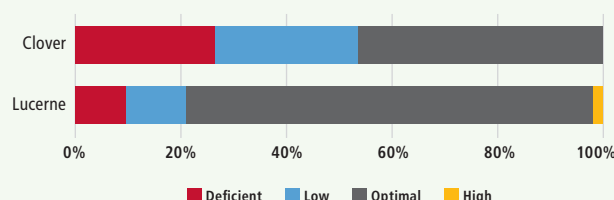


Figure 2: Boron levels (mg/kg) 2019-2024





companion grass species will be N deficient, again leading to poor production through lower growth rates, lower plant densities and weed invasion. Tissue testing is the most reliable method to assess molybdenum levels in these crops.

If a deficiency is detected it can be corrected by applying 50-75 gMo/ha every 5-7 years. This application, sprayed onto granules, ensures even distribution across the paddock and helps maintain optimal molybdenum levels, supporting the N-fixing process and promoting healthy plant growth.

Boron: The key to seed set and root development

Boron is another critical micronutrient, essential for a range of plant functions including cell growth, seed set, and root nodulation. In clover, boron plays a significant role in seed production, with research showing substantial increases in seed yield when boron is adequately supplied. This is important as annual species such as sub clover rely on large numbers of viable seed to replenish the seed bank.

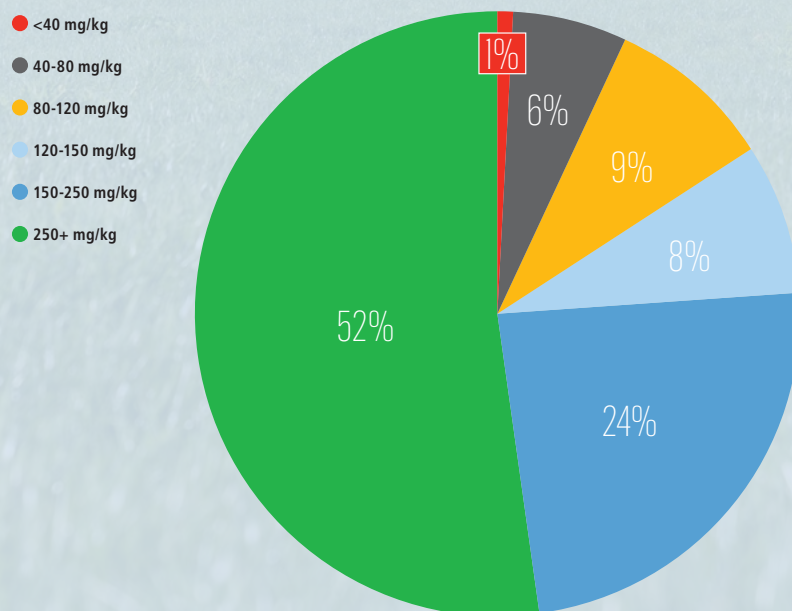
Leaf tissue testing is particularly important to confirm boron deficiency as it is mobile in the soil. Different pasture species have different root morphology which affects how much boron they can access in the soil.

Speak with your local IPF agronomist about the benefits of regular leaf tissue testing to identify and correct nutrient gaps and ensure optimal growth for your lucerne and clover.

Soil tests get K levels right

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Figure 3: Aggregated Nutrient Advantage soil test data for K 2023-2024



K application tips

The most common K fertilisers are:

- Muriate of Potash (MOP)/ Potassium chloride (KCl)
- Sulphate of Potash (SOP)/ Potassium Sulphate
- Potassium Nitrate
- Potassium phosphate
- Potassium carbonate

When deciding what K fertiliser to apply, utilising the 4R's; Right Rate, Right Time, Right Product, and Right Placement ensures a sound recommendation. When choosing a fertiliser product we need to consider the fertiliser composition (particularly chloride content), crops' sensitivity, along with the potential to further exacerbate a salinity issue.

With the high chloride content in MOP it's recommended to be spread before or at seeding in a band near, but not with, the seed. This is because when it dissolves the salt concentration increases which may cause damage to the seedlings due to the osmotic potential.

Research conducted by Bell et al (2021) highlighted that cation exchange capacity (CEC) has large influence on product application technique and

product rate. Application guidelines developed based on this research are; soil with <15 cmol(+)/kg CEC – all application methods are effective but total K rate should be spread out over multiple applications to reduce luxurious uptake or K leaching on soils with <5 cmol(+)/kg CEC. For soils with >15 cmol(+)/kg CEC, banding and collocating K with P may improve plant uptake.

In a grazing situation animal health issues may arise due to potassium's interaction with magnesium. Milking cows being most susceptible. Environmental conditions can favour plants to have greater supply of potassium than calcium and magnesium. To reduce this risk, studies completed by Gourley 1999, and Hosking 1986, have recommended to not exceed 120kg K/ha annually and 60kg K/ha in one application.

When determining rates use the current soil level to determine if a capital application is needed to build soil fertility, or a maintenance rate is needed to replace removal.

K may be applied alongside other nutrients, for example a Boosta product, Custom Blend, or in liquid form from our Easy Liquids K-FLOW range.

eNpower® helps boost sugarcane yields

In the five years since Queensland canegrower, Peter Muller, first started using eNpower®, not only have yields increased, but a range of other plant and soil health benefits have been experienced on-farm.

Peter grows sugarcane across 460 hectares near Proserpine in the Mackay Whitsunday region of the Great Barrier Reef catchment and has been using Enhanced Efficiency Fertilisers (EEFs) ammonium stabilisers continuously for the last 16 years.

The farm's location next to pristine waterways means that working within nitrogen (N) and phosphorous (P) standards as part of the Reef protection regulations is important.

It also means that Peter works with the best technology available to help get more out of what he does apply to his crop.

EEFs like eNpower® provide growers like Peter with better nutrient use efficiency, minimising losses and maintaining nitrogen (N) in the soil for crop growth cycles.

Preventing leaching

Before adopting eNpower® into his fertiliser program Peter undertook on-farm trials in 2019.

"We applied it to an alternating pattern of 12 rows across a 25ha paddock to measure its impact over a lot of different soil types," Peter said.

"We had the trial rows marked out so we could get data back from the sugar mill, and when we went to harvest that paddock the following year, the contract harvester driver said we didn't need to mark the rows because he could physically see the difference.

"It was clear that eNpower® provided significant benefits to our light soils, prompting us to continue its use and reduce yield variability across several years, despite our unpredictable weather conditions and inconsistent soil types.



L to R – George Cole and Peter Muller.

"eNpower® stops the leaching process in our soils so we're getting a bigger bang for our fertiliser buck..."

"Tonnes of sugar we're producing per hectare are up and we get paid based on tonnes of sugar.

"We farm in very light sandy soils, so leaching is a problem, however eNpower® stops the leaching process in our soils so we're getting a bigger bang for our fertiliser buck. It's one of the key tools in our drawer to get the most out of our fertiliser investment.

"To cover the extra cost, we don't need to grow a lot more. The benefit we are seeing truly outweighs the cost.

"Our property is all full flood irrigation, with full green trash blanket so we do have waterlogging at times. Some of the other benefits we've found is after heavy rain events, we find our crop seems to recover faster than it used to.

"It has a stress shield effect on the crop and we find it's a lot greener for a lot longer, which can only go down to its photosynthesising for a lot longer which in turn, produces a larger crop."

Soil samples critical

eNpower® is applied to Peter's sugarcane once a crop is cut, and he works with Pursehouse Rural Proserpine Field Agronomist, George Cole, to develop nutrient management plans.

George said on-farm nutrient management in the Great Barrier Reef catchment is guided by Sugar Research Australia's SIX EASY STEPS® best management practice, to ensure profitable sugarcane production is achieved with minimal on and off-site effects.

"During the fallow period, after the last harvest, we take soil samples in every paddock that's going to be replanted the following year," George said.

"There are multiple soil types across Peter's farm. Even within one paddock you can have a couple of different soil types, so we try and find a happy medium and at least target the majority soil type.

"We base a nitrogen and phosphorous budget off those soil samples across the farm for the whole life cycle of that crop, whether it's plant cane, or four ratoons or five ratoons.

"Most people take out 20% of their farm each year for fallow."

How does eNpower work?

eNpower® contains the nitrification inhibitor DMP in IPF's patented DMP-G formulation. DMP works by inhibiting nitrifying bacteria in the soil, slowing down the conversion of ammonium N to nitrate which is more prone to loss.

Sugarcane regions are subject to some of Australia's most unpredictable weather. Good rains early in the season can set the potential for bumper yields, however, heavy early rains can increase N losses.

eNpower® can help stabilise N and improve phosphorus uptake, reducing the risk of limiting cane yield. This gives the crop the best chance of making the most of good soil moisture conditions.

To find our more, visit:
www.incitecpivotfertilisers.com.au/products-and-services/our-products/enpower

CAPITAL WORKS

Portland facility's \$20M transformation to drive grower productivity

IPF's newly upgraded fertiliser import and distribution facility at Portland in regional Victoria has been officially opened, following a \$20 million investment in the site.

As the largest supplier of fertilisers on Australia's East Coast, IPF's significant investment in this strategically important facility will enhance our operational efficiency and storage capacity.

IPF President, Scott Bowman, officially opened the state-of-the-art facility on 27 August and was joined by growers, IPF customers, and agricultural industry stakeholders.

"The upgraded facility can now blend up to 300 tonnes of fertiliser per hour, increasing output and ensuring customers across Victoria and South Australia receive product promptly," Scott said.

"It will not only enhance supply to the local and domestic market, but ensure customers have access to customised formulations that provide exact nutrients needed for maximum yield and more environmentally sustainable outcomes.

"As part of IPF's commitment to helping drive increased productivity and sustainability for farmers, Portland has now been equipped with more efficient technology.

"This will enable the application of coatings to produce Enhanced Efficiency Fertilisers (EEFs) such as Green Urea NV® and eNpower®, which can help reduce greenhouse gas (GHG) emissions by up to 70% in some scenarios.

"IPF's investment in the Portland facility is part of our strategy to deliver productivity benefits for growers through innovation and provision of high-quality products. It also demonstrates IPF's dedication to rural and regional Australia."

The opening is a new chapter in the site's history and showcases how IPF has transformed a manufacturing facility into an innovative fertiliser import and distribution facility.

The Portland site was first commissioned as a fertiliser manufacturing plant on 24 November, 1968.



L to R – IPF's President, Scott Bowman, with Portland Site Manager, Therese Walton.

The site now dispatches over 200,000 tonnes of fertiliser per annum, with future growth expected in line with forecast increase in Australian crop production.

KEY BENEFITS INCLUDE:

Streamlined operations: The new facility features two A-Double length loadouts, enabling truck loading directly on the weighbridge. This is a major enhancement from the previous process.

Expanded storage capacity: With an additional 20,000 tonnes of storage, larger volumes can be managed more efficiently, significantly improving supply capabilities.

Enhanced dispatch rates: The facility's design allows for outloading of up to 1,800 tonnes per day, significantly improving previous dispatch rates.

Increased capacity and efficiency: Upgrades will be able to facilitate larger vessels, enable the introduction of new products, and accelerate the speed to market – ultimately boosting IPF's ability to meet customer demand and support regional growth.

Economic benefits: By improving logistics operations, the team is poised to enhance service delivery to customers in the region, contributing to economic growth and increased efficiency in the local supply chain.

What's new in Newcastle?

IPF recently opened a cutting-edge storage and loading facility in Newcastle, NSW, marking a significant advancement in logistics and bulk storage for the region.

The 9,150 square metre facility is set to improve capacity and the speed of the supply chain so farmers and other customers can receive products more efficiently.

Customers from agricultural industries including broadacre farming, livestock, and horticulture sectors, as far west as Bourke in western NSW, will source fertilisers from this new location.

BIOSECURITY

On the biosecurity frontline

IPF has a critical role in supporting Australian farmers in preventing the risk of exotic pests or diseases entering the country. Our teams proudly work within, and contribute to, some of the world's strictest set of biosecurity regulations.

It's a responsibility that starts well before a ship is even loaded at a port according to IPF's National Shipping and Logistics Manager, Martin Gleeson.

Martin has worked in the shipping industry for 36 years and leads IPF's Shipping Team.

The team is responsible for the staggering logistics involved in importing approximately two million tonnes of product and raw materials into Australia each year, as well as

shipping approximately 400,000 tonnes of product domestically around Australia's coastline.

"We charter 120 to 130 ships doing around 600 port calls per annum – that's a lot of loading, discharging, stevedoring and trucking," Martin said.

Martin is also Chairman of the Import Logistics Committee (ILC), which comprises members from Fertilizer Australia, importers, suppliers, surveyors, and auditors, and meets every six months, with a particular focus on biosecurity.

Rigorous ship selection

Martin said IPF's best practice biosecurity process starts with rigorous ship selection.

"No stone is left unturned in

selecting and preparing ships to the highest standard to minimise any biosecurity risk," Martin said.

"Regardless of whether we're importing or shipping around the Australian coast we use the same rigorous vessel vetting process.

"We import both raw materials and finished products from many different countries including several within the Middle East, along with China, South East Asia, Europe, the United States and Canada.

"Our ship selection is based on a range of parameters well beyond just the freight rate to ensure we select the best ship for IPF's business.

"This includes information about the ship's owner, its cargo history, age, safety record, and its greenhouse gas



(GHG) emission rating. A ship's GHG emission rating is ranked from A to E.

"We use RightShip, a well-recognised external company, which has a worldwide database of every ship and details about its owners, managers, safety history and GHG emissions.

"Once we have chartered a ship, we do a very thorough ship holds inspection with an accredited marine surveyor and a cherry picker.

"The surveyor looks for evidence of any previous cargo residues, and also rust and rust-scale. That inspection is undertaken either at the load port or at another designated port to ensure the ships are as clean as possible before we present the ship for loading.

"We work very closely with the federal Department of Agriculture,

Fisheries and Forestry (DAFF) and Fertilizer Australia, meeting with them often to discuss current and emerging issues and the Fertiliser Import Protocols."

DAFF classifies ships as Level 1, 2 or 3 in terms of biosecurity risk and based on its cargo history, with Level 1 considered the lowest-risk ship.

"Approximately 95% of the ships IPF charts are classified as Level 1," Martin said.

Supply chain scrutiny

IPF's suppliers are also classified by DAFF as Level 1, 2 or 3, with Level 1 supply chains considered low risk to biosecurity.

"At present, all of our suppliers are Level 1 accredited. They go through

a very thorough auditing process to ensure their supply chain is contaminant free and to the satisfaction of DAFF," Martin said.

Once a ship arrives in Australia, it will discharge at ports where IPF's primary distribution centres (PDCs) are located, being 11 ports in Australia including Port Lincoln, Adelaide, Portland, Geelong, Devonport, Port Kembla, Newcastle, Brisbane, Mackay, Townsville, and Cairns.

Depending on where demand is, the IPF Planning Team will advise the Shipping Team which port or ports the cargo needs to be discharged at.

And depending on the risk classification, DAFF may inspect the fertiliser when it lands in Australia, with these inspections taking place either on the vessel or at a registered Approved Arrangements site.

"IPF employs stevedores who use the ship's cranes to discharge the cargo. A grab is attached to the ship's crane which picks the cargo up out of the hold and into a hopper, which then feeds into trucks, which then tip into our sheds," Martin said.

IPF's GM of Trading & Direct Procurement, Dan White, and his team work with a large and diverse contingent of international suppliers to ensure that all product meets strict quality specifications.

"IPF's supply team works with a global network of suppliers to ensure that all product sourced meets IPF's own stringent internal specifications and the needs and expectations of Australian farmers," Dan said.

"This includes chemical analysis of all key nutrients and any possible contaminants, and the size, hardness and storage performance for each cargo, and inspection by independent surveyors before and during loading and IPF's own inspections on arrival.

"There is also an extensive due diligence process undertaken to ensure reliability of supply and conformance not only with quality and biosecurity, but also with evolving legal and political restrictions. IPF technical and supply staff also visit our key suppliers to audit their performance and work collaboratively to improve quality and consistency."

COTTON CONFERENCE

Ross Munro wins IPF award

A lifelong dedication to the cotton industry has seen Ross Munro of Moree, NSW, awarded the IPF Service to Industry Award at the 2024 Australian Cotton Industry Awards held in the Gold Coast.

IPF Vice President Sales and Marketing, Alistair Brook, presented the award to Ross, whose impact on the cotton industry in Australia and globally has been far reaching.

Award judges were IPF Technical Agronomist, Bede O'Mara; immediate past winner of the Award, Peter Birch, B&W Rural, Moree; and Women in Cotton (WINCOTT) Chair, Lou Green, Riverina NSW, while Cotton Australia CEO, Adam Kay, was Award Steward.

Ross operates BMC Partnership, a large contract cotton stripping, picking, manufacturing and transportation business based in Moree.

He designs and builds extensions for John Deere stripper fronts and pickers and has developed a range of modifications, including firefighting systems, wrap rollers, walkways, auto lift reverse kits, Guest Row average kits, and increased front lengths for different spacing, including double skip.

Ross first started in the cotton industry in the 1970s, working alongside his father establishing a cotton growing business. He became responsible for operating infield loaders, loading flat top trucks and transporting cotton modules on chainbeds.

In the name of efficiency, Ross began pulling apart,

redesigning and remodifying these machines. He travelled to the United States to see how growers were transporting cotton and conducting internal gin movements.

On returning to Australia, Ross met Danny and John Burke who were providing a similar offering in the market, and they teamed up and formed what is known today as BMC Partnership.

Ross applied his experience from the US in manufacturing, modifying and upgrading all equipment and introduced a range of gin loading equipment, known now as 'moonbuggies'.

The change from conventional modules to round bales had a huge impact on the cotton industry and BMC began re-purposing all chainbeds and transport equipment to accommodate the new bales.

When round bale cotton pickers and strippers entered the market, Ross developed and patented a chain that could be used on plastic without causing any damage which is still being used in the US today.

In 2010, Ross expanded into cotton harvesting and travelled to the US again where he purchased 12, second-hand round bale cotton pickers for himself and others and transported these back to Australia, filling a void in the market.

It wasn't long before Ross began to redesign and modify these machines to better suit Australian conditions, enabling harvesting of dryland cotton with six heads on a 12-metre swathe over contours.

With some of the redundant module equipment, Ross redesigned and repurposed chainbeds and module builders, shipping them to the Netherlands for the hemp industry, where he

also spent two months training the Dutch in the workings of these specialist machines.

In 2017, Ross was asked to travel to China to conduct intensive field training days for local operators, where he developed and built further relationships with suppliers and growers. Having already designed an alternative to the John Deere floor belts, Ross was able to solve recurring floor belt issues by selling his to the Chinese.

In 2018, Ross decided to return to the US and create a market for the BMC Fire Suppression Systems and Walkways. This became a successful venture which still continues today.

Due to an inability to find trained operators in Australia, Ross became involved in establishing and running a TAFE course within Moree to teach individuals how to operate and maintain a cotton picker/cotton stripper.

In 2023, Ross was contacted by the initiative 'Tanks to Tractors', which was looking to provide worthwhile and meaningful employment for returned service men in the cotton industry. Ross organised the Moree Tanks to Tractors by supplying workshops and training to eight returned servicemen using their skillset to apply to the cotton industry.

"Ross has been a driving force in the cotton industry for decades, consistently pushing the boundaries of what's possible," Alistair said.

"His contributions from innovative equipment modifications to spearheading opportunities for international collaboration, have shaped the future of cotton farming. This award is a testament to his lifelong service and the lasting legacy he continues to build."

IPF insights draw big cotton crowd



Jan Edwards at the Australian Cotton Conference. Photo: Liz Wells, Grain Central.

IPF's Director of Agronomy, Jan Edwards, gave a presentation to a packed room of farmers, agronomists and industry stakeholders on day one of the biennial Australian Cotton Conference on the Gold Coast.

The theme of the three-day conference was Cultivating Excellence, and was attended by 2,910 delegates from across Australia and beyond.

Jan talked about nitrogen stabilisers, also referred to as inhibitors or Enhanced Efficiency Fertilisers (EEFs), including what they are, how they work and the benefits they deliver to growers.

The main benefit of using EEFs such as eNpower® and Green Urea NV® is the potential for reduced nitrogen (N) losses.

The associated productivity benefits include:

- More N when and where you need it
- Flexible application timing
- Reduced emissions
- Potential for reduced N fertiliser rates
- More yield per unit of nitrogen.

Results from IPF trials conducted in irrigated cotton, comparing the effect of untreated urea and eNpower® urea on lint yield were presented, showing that under the trial conditions, yield can be maintained with a reduction of 50 kg/ha N when treated with eNpower®.

The results align with recent research (Scheer et al, 2022) indicating substantial scope to improve fertiliser nitrogen use efficiency (fNUE) and reduce N losses in cotton without any reducing lint yield, by adjusting N fertiliser application rates in combination with the use of eNpower®.

If you would like to hear more about this topic, or learn more about our research sign up to our **Agronomic Insights**, or contact Jan Edwards:
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