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SUMMER 2025-26 ISSUE #43

THE AUSTRALIAN AGRONOMIST MAGAZINE

CATTLE, CROCS AND NOW CROPS: BOOSTING NT'S EMERGING INDUSTRY

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THE AUSTRALIAN AGRONOMIST

Fortuna Villa, 22 Chum Street, Golden Square VIC 3550 Australia
P: 0429 301 681 **E:** info@theaustralianagronomist.com **W:** www.theaustralianagronomist.com

Publisher
Paul Banks
Email: paul@theaustralianagronomist.com
Phone: 0429 301 681

Design & Production
Kate Neal
Email: kate@regionalreach.com

Administration
Kate Redfearn
Email: administration@regionalreach.com

INTERNATIONAL RESEARCH
TEAM DECIPHERS KEY TRAITS IN OATS IN NEW PANGENOME PROJECT

RESEARCHERS FROM MURDOCH UNIVERSITY HAVE UNCOVERED INSIGHTS INTO OAT GENETIC DIVERSITY, IDENTIFYING KEY TRAITS RESPONSIBLE FOR OAT YIELD, PLANT HEALTH, AND ENVIRONMENTAL ADAPTABILITY.

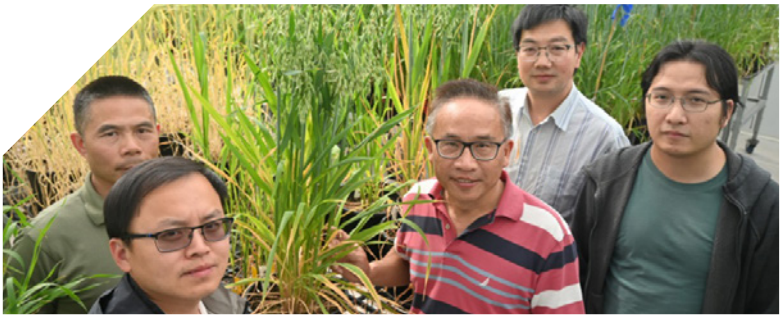

Photo credit: Murdoch University

An international research team comprising over 70 scientists from 33 research institutions in 10 countries has successfully decoded the pangenome of oats, marking a significant breakthrough in understanding one of the world's most genetically complex cereals.

The findings, published in Nature offer unprecedented insights into oat genetic diversity in Australia and abroad.

The Western Crop Genetics Alliance (WCGA) - a partnership between Murdoch University and the Western Australian Department of Primary Industry and Regional Development (DPIRD) - played a critical role in the research, delivering the genome sequencing of four oat genomes, including Australian oat varieties Bannister, Bilby, and Williams.

Oats are widely recognised for their health benefits, including high fibre content, cholesterol-lowering properties, and gluten-free characteristics.

However, its complex genetic structure, which features six sets of chromosomes derived from three different ancestral species, has made oat an especially challenging crop for researchers to analyse.

Led by researchers from the IPK Leibniz Institute, the research team sequenced and analysed 33 oat lines that included both cultivated varieties and their wild relatives.

Using state-of-the-art sequencing technologies, the team examined the gene expression patterns in six tissues and the developmental stages of 23 of the oat lines, resulting in a pantranscriptome, a comprehensive map of which genes are active in different parts of the plant.

Led by WCGA Director and Murdoch University's Centre for Crop and Food Innovation Research Theme Leader, Professor Chengdao Li, the Australian team revealed the genomic composition of the Australian oat and uncovered the genomic mechanism for oat adaptation to Australia's unique environment.

The study also uncovered several unexpected features of oat genetics.

Despite significant gene loss in one of the three subgenomes, oat plants remain highly productive because other gene copies compensate for the missing functions.

The team also found that structural rearrangements in the genome, including inversions and translocations, are associated with environmental adaptation and may have played a crucial role in oat domestication and the formation of reproductive barriers between populations.

In a statement, Professor Li explained that:
"This research, which sees the international oat research community come together to crack a particularly challenging genetic puzzle, transforms oats from a genetic 'black box' into a blueprint that will enable precision breeding for a healthier, more sustainable food future.

"In an Australian context, the discovery of specific genetic signatures for adaptation, such as the 2A/2C gene translocation in Australian oats, shows how crops naturally evolve to suit different environments. With this knowledge, we can help Australian breeders select or develop varieties optimised for specific regions, and speed up the development of improved, more resilient oat varieties.".

DPIRD Broadacre Systems Executive Director Dr Kaara Klepper stated:
"The decoded oat pangenome epitomises how modern genomics research is stimulating leaps in crop breeding, agricultural production and human health by providing novel genetic resources to underpin new varieties with improved yields, better environmental adaptation and enhanced nutrition.

"DPIRD and Murdoch University scientists with the Western Crop Genetics Alliance have made an important contribution to this global research, which applied locally will help WA growers produce high performance, resilient crops suited to a changing climate – boosting sustainability and profitability."

MORE INFORMATION

Full details of this study and its implications can be found in *Nature*.

This study is the result of a joint effort between research teams in the PanOat Project, which includes the Western Crop Genetics Alliance (WCGA), a partnership between Murdoch University and the WA Department of Primary Industries and Regional Development. The Australian arm of the project is jointly funded by the GRDC (UMU2003-002RTX), the WA Oat Industry partnership, DPIRD and Murdoch University. Pawsey provided computing resources for this project.

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NSW CANEGROWERS
WINNING THE WAR ON WEEDS

MORE AND MORE CANEGROWERS IN NORTHERN NEW SOUTH WALES ARE NOW GETTING ON TOP OF DIFFICULT GRASS AND BROADLEAF WEEDS BY DEPLOYING POWERFUL HERBICIDES IN A ONE-TWO PUNCH ROTATION STRATEGY THAT IS ACHIEVING EXTENDED CONTROL AND HELPING TO REDUCE WEED SEED BANKS.

MORE and more canegrowers in Northern New South Wales are now getting on top of difficult grass and broadleaf weeds by deploying powerful herbicides in a one-two punch rotation strategy that is achieving extended control and helping to reduce weed seed banks.

Summer grasses, barnyard grass, billygoat weed and various others have been a bugbear over many years, however the wider use in recent times of Palmero® TX and Bobcat® i-MAXX herbicides, both from ADAMA Australia, has helped growers to win the war against the weeds.

Both herbicides have a similar use pattern and no time of use restrictions. Palmero TX contains isoxaflutole and terbuthylazine active ingredients, while Bobcat i-MAXX combines hexazinone and imazapic.

At the 'Yakaloo' sugarcane property on Woodford Island, continuing to reduce the weed seed bank remains a key weed management aim and Palmero TX has provided extended control, as well as an easier solution for Manager Luke Moloney.

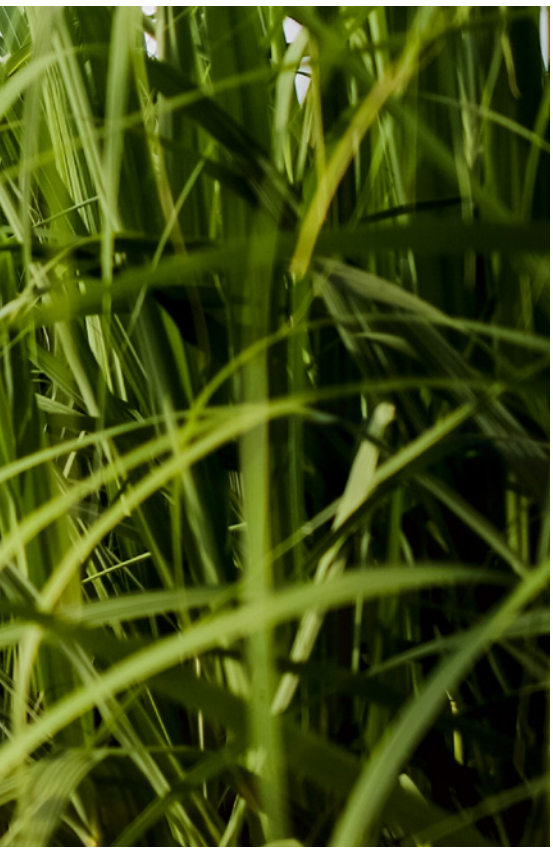
Luke manages about 245 hectares of sugarcane for owners Alister and Helen McFarlane at the property, which also accommodates some cattle.

Luke said summer grasses, nutgrass, crowsfoot grass, billygoat weed, cooch and para grass, which can come into the property along river banks, all posed concerns and required strong management.

> *He said good fallow management incorporating key herbicide tools was the best attack against target grass and broadleaf weeds prior to a ratooning program, and the use of Palmero TX herbicide once crops were established had provided further benefits.*

Luke said their focus has been to use Palmero TX after harvest and in early ratoons.

"We get that pre-emergent activity for when the weeds do come and we add some paraquat if weeds have emerged and it is before the cane shoots," Luke said.



Pictured shows the excellent weed control achieved at 'Yakaloo' in ratoon cane following an application of Palmero TX herbicide at 1.5 kilograms per hectare at the out-of-hand stage.

Norco Agrisolutions Grafton-based agronomist Trent Stainley pictured chatting with Dean Lawrence, who operates a sugarcane and cattle enterprise near Yamba in Northern New South Wales. Dean says the use of Bobcat i-Maxx and, more recently, Palmero TX herbicides is helping to keep paddocks "clean" over several properties including leased land.

He said they previously used a tank mix of isoxaflutole and amicarbazone after harvest and this was still effective, however the Palmero TX offered some key advantages.

"We had to mix before, whereas we don't have to mix with Palmero TX. It is easy to do in one hit and the length of control is really good."

"I think we are getting a better kill on the vines and longer control than the other brew."

> ***Luke said the excellent control with Palmero TX had prompted some growers to apply one upfront application only with their crops, however at 'Yakaloo' they decided to always follow it at the out-of-hand stage with application of "softer" herbicides.***

"We also change up the herbicides we use every couple of ratoons," Luke said.

They previously used a herbicide mix with atrazine at the out-of-hand stage, but recently they applied Bobcat i-MAXX and Luke said it had some extra "woof".

Near Yamba, cane and cattle producer Dean Lawrence has a sharp focus on "keeping paddocks clean" of weeds and his recent weed control and management strategies have them in the best shape they've been.

Dean has about 160 hectares under production to cane on several properties, including leased land, from James Creek to Palmers Channel, and also runs about 80 Angus breeders and tends to a few nut trees.

Summer grasses, including paspalum, as well as cooch, can cause concerns and Dean has had to spell paddocks previously to improve their control, however he said once cleaned, "you can keep paddocks clean".

Atrazine, diuron and herbicide mixes were used against the weeds in the past, but Dean has since worked closely with Norco Agrisolutions Agronomist Trent Stainley, based at Grafton, and applied Bobcat i-MAXX as well as Palmero TX more recently.

"We always use Palmero TX at plant, when the cane is coming out of the ground, with herbicides like paraquat and 2,4-D. It keeps things really clean for two to three months. It has been every bit as good as other herbicides," Dean said.

"When the cane comes up under the tractor, we do another herbicide spray with the Irvin legs.

> ***"After harvest, we let the weeds start coming through and the cane grow a little and then we will spray Palmero TX and paraquat, and it gets us right through to that out-of-hand spray.***
>
> ***"The new herbicides have certainly improved the place here and helped to keep on top of weed seed banks," he said.***

MORE INFORMATION

For further information on Palmero TX and Bobcat i-MAXX herbicides, growers and advisers can contact their local ADAMA Australia representative or visit ADAMA.com

AI IN THE FIELD: QUANTIFYING WHOLE-FARM INVENTORY AND RISK

THE GREATEST BURDEN ON ANY LARGE-SCALE GRAZING OPERATION IS THE MANAGEMENT OF INVENTORY—KNOWING PRECISELY HOW MUCH FEED IS AVAILABLE AND HOW QUICKLY IT WILL BE CONSUMED. TRADITIONAL FEED BUDGETS ARE OFTEN COMPROMISED BY SUBJECTIVE FIELD ASSESSMENTS, LIMITING A FARMER'S ABILITY TO PLAN CASH FLOW AND MITIGATE ASSET RISK.

The Aussie-based company **Algorithm** has created a modern, data-driven system that changes this equation entirely, treating the pasture as a **quantifiable, dynamic asset** that can be managed over the long term. Focusing on remote sensing of nitrogen uptake of vegetation, crude protein, vegetation stress, growth, standing biomass, water content of vegetation.

1. THE CORE PROBLEM: INVENTORY BLINDNESS AND GROWTH FORECAST

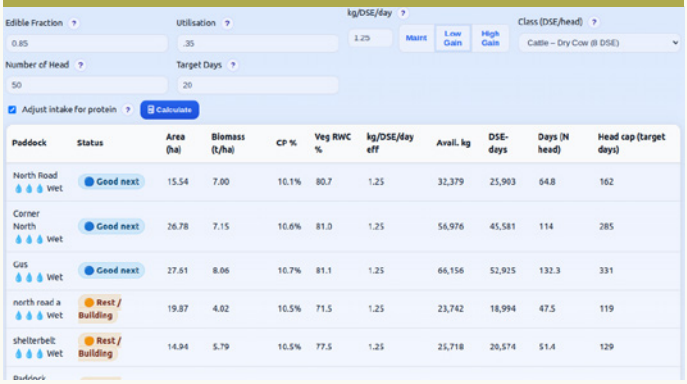
The foundation of the budget—total feed on hand—must be accurate. Algorithm provides certainty by combining quantity and growth:

- **Objective Inventory:** High-resolution orbital sensors provide continuous, whole-farm **biomass (t/ha)** mapping. This eliminates the uncertainty of manual sampling and provides the definitive starting inventory for every paddock.
- **Dynamic Growth Rate:** Predictive models fuse this standing biomass with real-time biophysical constraints—leaf area, sunlight, temperature, and moisture—to forecast the rate of daily feed production. This allows the budget to project forward, automatically adjusting feed recovery based on current weather and ecological reality.

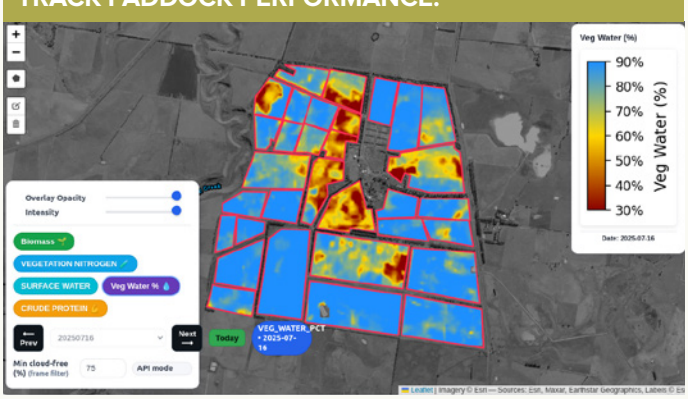
2. THE EFFICIENCY AUDIT: WATER AND FERTILISER USE

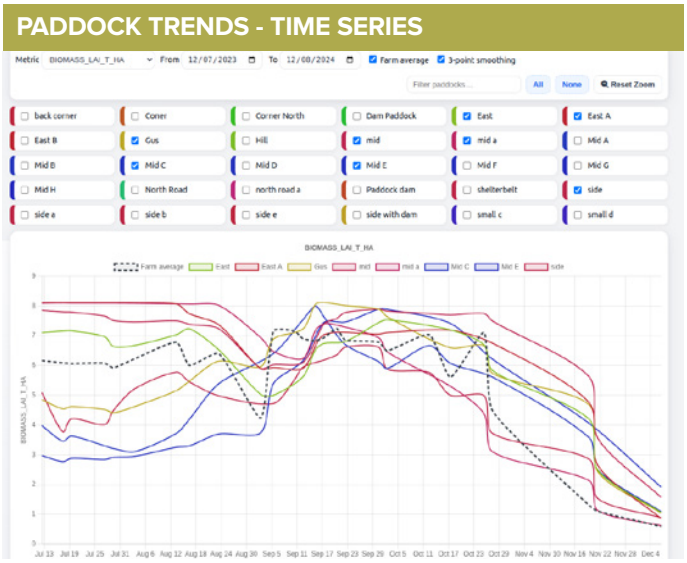
The long-term profitability of the farm is defined by how efficiently inputs are converted into usable feed. Algorithm

FEED PLANNER & GRAZE STATUS



TRACK PADDOCK PERFORMANCE.





uses two key efficiency metrics to diagnose underlying structural problems:

- **Water Use Efficiency (WUE):** WUE is the ratio of **feed produced to water lost through evapotranspiration**. A low WUE score means the pasture is wasting water resources and requires intervention before the entire feed inventory forecast fails.
- **Fertiliser Use Efficiency (FUE):** FUE is the metric that tracks how effectively fertiliser is converted into usable forage **(Crude Protein)**. A low FUE score means investment in nitrogen is failing, signaling a structural soil issue that needs correction before the next application.

3. THE FINANCIAL CERTAINTY OF THE INTEGRATED BUDGET

For the farmer, the highest value is realised when all these factors—Inventory, Growth, and Efficiency—are combined into a unified management tool: **the Integrated Feed Budget**.

- **Rotation Planning & Inventory Control:** The integrated budget uses the combination of quantity of feed available, livestock needs, Crude Protein (CP) measurements, and Vegetation Water Content (VWC) to help the agronomist understand and track paddock performance. This system provides guidance on:
  - **Optimal Paddock for Livestock:** Matching high-CP feed to high-gain mobs.
  - **Accurate Rotation:** Calculating precise Days of Feed Available to ensure pasture recovery.
- **Risk Mitigation:** The objective data provides the certainty needed to make strategic purchases. The budget forecasts feed shortages well in advance, allowing for the strategic, low-cost purchasing of supplement feed rather than reactive, expensive emergency buying.

This move toward comprehensive, quantifiable budgeting transforms subjective farm management into a powerful, data-driven operational strategy.

MORE INFORMATION

Visit: **www.aigorithm.com.au**

BANANA BIOSECURITY GETS A BOOST WITH NEW NATIONAL SURVEILLANCE AND GROWER EDUCATION PROJECT

A NEW RESEARCH INITIATIVE TO HELP SAFEGUARD AUSTRALIA'S BANANA INDUSTRY FROM PEST AND DISEASE THREATS IS UNDERWAY. FUNDED BY HORT INNOVATION, THE PROJECT WILL CONSIDER OPTIONS TO EXPAND SURVEILLANCE AND DISEASE CONTROL, DEEPEN GROWER EDUCATION, AND BUILD BIOSECURITY RESILIENCE ACROSS KEY GROWING REGIONS

The three-year project, Enhancing pest surveillance, grower engagement and banana biosecurity resilience (BA24003), is being delivered by the Australian Banana Growers' Council and builds on the success of a previous project which supported growers in containing Banana Bunchy Top Virus (BBTV), improving early detection of exotic threats, and strengthening regional biosecurity networks.

Brett Fifield, CEO at Hort Innovation, said: "Biosecurity is critical to the long-term sustainability of the banana industry. This project is about equipping growers with the tools, knowledge and systems they need to detect and respond to pest and disease threats early, before they escalate. It's a proactive investment in protecting livelihoods and securing the future of one of Australia's most valuable horticultural sectors."

"It will focus on improving disease management, diversifying surveillance strategies, and strengthening industry preparedness for future biosecurity challenges."

Led by Dr Rosie Godwin, R&D Manager at the Australian Banana Growers' Council, the project will target banana growers and stakeholders across Queensland and northern New South Wales, regions that represent over 96% of national production.

Dr Godwin said: "Importantly, this new project focusses on strengthening collaboration between Industry, the community, government biosecurity regulators and scientific experts to improve outcomes and support our shared biosecurity obligations. So far, we are very pleased with the results."

It will deliver practical tools such as multi-pest surveillance protocols, pest identification resources, and biosecurity best practice guidelines. Growers will receive training in disease detection and containment, with a focus on common threats including Banana Bunchy Top Virus (BBTV) and Leaf Spot.

Dr Godwin said: "Our previous work has shown that coordinated surveillance and grower education can make a real difference when we are faced with pest and disease incursions. Since 2022, we've conducted 945 farm inspections and destroyed over 5,000 infected plants, critical steps in containing BBTV. This new project builds on that momentum, expanding our reach and refining our strategies to ensure the industry remains resilient and ready for future threats."

The project also includes a built-in mechanism to review and workshop future investment opportunities in pest and disease surveillance, ensuring the industry remains agile and forward-looking.

This project (BA24003) is funded by Hort Innovation, using the banana research and development levy and contributions from the Australian Government.

MORE INFORMATION

Visit: horticulture.com.au

SYNTHETIC BIOLOGY TO SUPERCHARGE PHOTOSYNTHESIS IN CROPS

NANOSCALE COMPARTMENTS - CALLED ENCAPSULINS - HAVE BEEN DESIGNED TO TARGET PLANTS' BIGGEST BOTTLENECK: EFFICIENTLY USING RUBISCO PROTEIN.

Australian researchers have created tiny compartments to help supercharge photosynthesis, potentially boosting wheat and rice yields while slashing water and nitrogen use.

Researchers from Associate Professor Yu Heng Lau's group at the University of Sydney and Professor Spencer Whitney's group at Australian National University have spent five years tackling a fundamental problem: how can we make plants fix carbon more efficiently?

The team engineered nanoscale 'offices' that can house an enzyme called Rubisco in a confined space, enabling scientists to fine tune compatibility for future use in crops, which should allow them to produce food with fewer resources.

Their research is published in Nature Communications.

Rubisco is a common enzyme in plants that is essential for 'fixing' carbon dioxide for photosynthesis, the chemical process that uses sunlight to make food and energy for plants.

> ***"Despite being one of the most important enzymes on Earth, Rubisco is surprisingly inefficient," said lead researcher Dr Taylor Szyszka from the ARC Centre of Excellence in Synthetic Biology and School of Chemistry at the University of Sydney.***

"Rubisco is very slow and can mistakenly react with oxygen instead of CO_2 which triggers a whole other process that wastes energy and resources. This mistake is so common that important food crops such as wheat, rice, canola and potatoes have evolved a brute-force solution: mass-produce Rubisco," she said.

In some leaves, up to 50 percent of the soluble protein is just copies of this one enzyme, representing a huge energy and nitrogen expense for the plant.

When Rubisco reacts with carbon dioxide it helps plants make sugar for growth and energy, but when it reacts with oxygen it has a negative effect. Image: Davin Saviro Wijaya/ANU

"It's a major bottleneck in how efficiently plants can grow," said Davin Wijaya, a PhD candidate at the Australian National University, who co-led the study.

Some organisms solved this problem millions of years ago. Algae and cyanobacteria house Rubisco in specialised compartments and supply them with concentrated CO2. They're like tiny home offices that allow the enzyme to work faster and more efficiently, with everything it needs close at hand.

Scientists have been trying for years to install these natural CO_2-concentrating systems into crops. But even the simplest of these Rubisco-containing compartments from cyanobacteria, called carboxysomes, are structurally complicated. They need multiple genes working in precise balance and can only house their native Rubisco.

The Lau and Whitney team took a different approach, using encapsulins. These are simple bacterial protein cages that require just one gene to build. Think of it like Lego blocks that automatically snap into place, rather than assembling complicated flat-pack furniture.

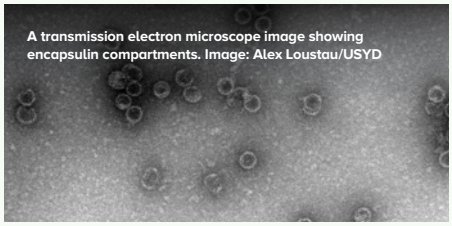
To load Rubisco inside, the researchers added a short 'address tag' of 14 amino acids to the enzyme that, like a postcode, directs the enzyme to its destination inside the assembling compartment.

The team tested three Rubisco varieties: one from a plant and two from bacteria. They found that timing matters. For more complex forms of the enzyme, they needed to build Rubisco first, then build the protein shell around it.

"Rubisco didn't assemble properly when trying to do both at once," Mr Wijaya said.

Dr Szyszka said: "Another cool advantage of our system is that it's modular. Carboxysomes can only package their own Rubisco, whereas our encapsulin system can package any type.

"Most excitingly we found the pores in the encapsulin shell allow for the entry and exit of Rubisco's substrate and products," she said.



A transmission electron microscope image showing encapsulin compartments. Image: Alex Loustau/USYD

The researchers emphasise this is just a proof of concept. They need to add the additional components that will give Rubisco the high-performance environment it needs. Early-stage plant experiments are already under way at ANU.

"We know we can produce encapsulins in bacteria or yeast; making them in plants is the next sensible step. Our preliminary results look promising," Mr Wijaya said.

If successful, crops with this elevated CO_2-fixing technology could produce higher yields while using less water and nitrogen fertiliser. These are critical advantages as climate change and population growth put pressure on global food systems.

MORE INFORMATION

Visit: **www.sydney.edu.au**

Research: Szyszka, T. and Wijaya, D. et al 'Reprogramming encapsulins into modular carbon-fixing nanocompartments' (Nature Communications 2025) DOI: 10.1038/s41467-025-65307-9.

Declaration: The authors declare no competing interests. Funding was received from the Australian Research Council.

BAYER TARGETING 2028 FOR AUSTRALIAN LAUNCH OF ICAFOLIN, A GROUNDBREAKING NEW HERBICIDE FROM A NEW CHEMICAL CLASS

BAYER AUSTRALIA HAS CONFIRMED ITS INTENTION TO SUBMIT ICAFOLIN-METHYL FOR REGULATORY APPROVAL IN AUSTRALIA IN 2026, TARGETING A LAUNCH DATE IN 2028, SUBJECT TO APVMA APPROVALS AND REGISTRATION.

This represents a major milestone in Bayer's global herbicide pipeline and signifies Bayer's commitment to delivering innovative crop protection solutions to Australian grain growers, following recent registration applications for the European Union, Brazil, Canada and the United States.

Icafolin-methyl is the first non selective knockdown herbicide from the new isoxazoline carboxamide chemical class, offering a novel solution to combat resistant weeds while highlighting the difficulty of discovering and delivering new product innovation.

Australian growers are set to be among the first globally to access this novel technology thanks to Australia's designation as a "Priority One" market within Bayer's global herbicide development program, which is a direct result of the long-standing Herbicide Innovation Partnership (HIP) between Bayer and the Grains Research and Development Corporation (GRDC).

"The HIP has been instrumental in placing Australian farming systems and weed management at the heart of Bayer's global herbicide R&D efforts, positioning Australian weed species at the centre of discovery for the next generation of sustainable weed control," said Bayer Crop Science ANZ Managing Director Warren Inwood.

"While Icafolin-methyl wasn't discovered in HIP, the partnership between Bayer and GRDC has enabled earlier testing under Australian conditions, ensuring a better fit for Australian growers and ultimately accelerating the timeline for Australian grain growers to have access to a new non selective knockdown herbicide for this mode of action group."

"We are progressing with local trials and are aiming for our first Australian submission in 2026, which facilitates a target local launch date in 2028, pending regulatory approvals. This timeframe will ensure Australian growers are among the first in the world to access this new crop protection technology."

By investing in HIP to accelerate the discovery of new modes of action and embed Australian weed species and farming systems into the earliest stages of molecule research, Bayer and GRDC are ensuring that emerging herbicide technologies are tailored to local conditions from the outset, delivering more effective, sustainable solutions for Australian grain growers and shortening the time to market for critical innovations.

"GRDC welcomes the advancement of icafolin methyl as a new non selective knockdown for use in and around grain crops and its public release in Australia, which is aimed to happen at similar times to other countries," GRDC Managing Director Nigel Hart said.

"As a result of GRDC's investment through HIP, Bayer has been able to bring forward local trials to ensure that Australian grain growers are among the first in the world to access this new herbicide, which will be a critical step in managing resistance and supporting sustainable cropping.

"The HIP reflects GRDC's commitment to ensuring Australian grain growers have access to the most advanced weed control technologies available globally.

> ***"We can't underestimate how important is to bring new weed management options to our growers with weeds costing an estimated $4.3 billion per annum or $203 per hectare on-farm."***

The HIP, established in 2015, is a strategic initiative aimed at tackling herbicide resistance – a challenge that costs Australian grain growers an estimated $3.3 billion annually. Through HIP, Bayer and GRDC have invested in new chemistry candidates, local trials, and scientific capacity building, including post-doctoral research cohorts in Germany.

Icafolin-methyl is expected to play a pivotal role in knockdown and burndown applications, helping to alleviate resistance pressure on glyphosate and support sustainable farming practices. It will complement HIP-developed solutions as part of a broader systems approach to weed management.

"Several promising herbicide candidates developed within HIP are progressing through Bayer's global pipeline. With product development often spanning more than a decade, field trials are currently underway in Australia and internationally to evaluate these actives across diverse farming systems," said Mr Inwood.

"Bayer continues to actively invest in these projects, ensuring HIP delivers lasting benefits for Australian grain growers through continued access to innovative weed control solutions well into the future."

ABOUT THE HERBICIDE INNOVATION PARTNERSHIP (HIP)

The Herbicide Innovation Partnership (HIP) is a long-term strategic collaboration between Bayer and the Grains Research and Development Corporation (GRDC), established in 2015 to address the escalating challenge of herbicide resistance in Australian cropping systems.

The partnership aims to discover and develop new herbicide modes of action tailored to the specific needs of Australian grain growers, with a focus on sustainability and innovation. Through HIP, Australia has been elevated to "Priority One" status in Bayer's global herbicide development program, ensuring that local weed control challenges are treated with the same urgency and investment as those in larger global markets.

Beyond product development, HIP has made significant contributions to scientific capacity building, supporting five cohorts of post-doctoral researchers from Australia and New Zealand to undertake two-year placements in Germany, working on small molecule and biology research. This initiative not only strengthens Australia's weed science capabilities but also fosters international collaboration and knowledge exchange.

ABOUT BAYER

Bayer is a global enterprise with core competencies in the life science fields of health care and nutrition. In line with its mission, "Health for all, Hunger for none," the company's products and services are designed to help people and the planet thrive by supporting efforts to master the major challenges presented by a growing and aging global population.

Bayer has had a presence in Australia since 1897 and has a long-term commitment to the health and nutrition of all Australians. Locally, Bayer employs around 600 people across Australia and New Zealand and is dedicated to servicing the needs of rural and remote communities. Bayer embraces and encourages its employees' unique identities and advances a culture of inclusion and diversity. For further information visit www.bayer.com.au

FORWARD-LOOKING STATEMENTS

This story may contain forward-looking statements based on current assumptions and forecasts made by Bayer management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

TOGETHER
WE GROW STRONGER

WE ARE THRILLED TO ANNOUNCE THAT SEASOL HORT & AG, ORGANIC CROP PROTECTANTS, AND YATES COMMERCIAL ARE COMING TOGETHER TO FORM YATES HORT & AG.

With a combined industry presence of over **220 years** and a very proud Australian history of supporting our reseller customers and growers, this move marks a new chapter in delivering unmatched service and innovation to the agricultural sector.

SERVICE: UNLOCK THE STRENGTH OF LOCAL MANUFACTURING AND DISTRIBUTION NETWORK, WITH THE BACKED BY OUR CUSTOMER SERVICE AND SALES TEAMS.

As part of DuluxGroup, we will leverage our vast sourcing, manufacturing and distribution network to ensure our customers have greater access to the highest-quality biological, organic, and regenerative farming solutions. By combining our deep expertise in soil health, Integrated Pest Management (IPM) and sustainable farming, we will be better equipped to support growers in an increasingly complex and evolving market.

PRODUCTS: INVESTMENT IN STRONG BRANDS AND INNOVATION

This strategic integration will also bring together our innovation, marketing, and sales teams, strengthening our ability to provide cutting-edge solutions and expert support to Australian farmers. The integration will also deliver stronger support in the market of our existing brands from the Seasol, OCP, Yates and our innovative technology partners including JCAM (Nutricote), Acadian Seaplants (STIMPLEX), ISCA Tech (APIS BLOOM), Andermatt Biocontrol (Helicovex, Spodovir Plus) and Coromandel (AzaMax).

At Yates Hort & Ag, our mission remains clear to help growers thrive by delivering innovative, science-backed solutions for a more resilient and productive future. We look forward to continuing to serve our customers with the same dedication and passion that has defined our legacy.

MORE INFORMATION

Visit: **hortag.com.au**

Our mission is to empower growers with innovative growing solutions,supporting the industry's shift towards more regenerative production systems to ensure a resilient and profitable future for the agricultural and horticultural Industries.

Our strategic collaboration unites over 220 years of horticultural expertise and skills,forming a business unit within Yates that offers unparalleled knowledge, products, and services in our industry.

For more information visit: hortag.com.au

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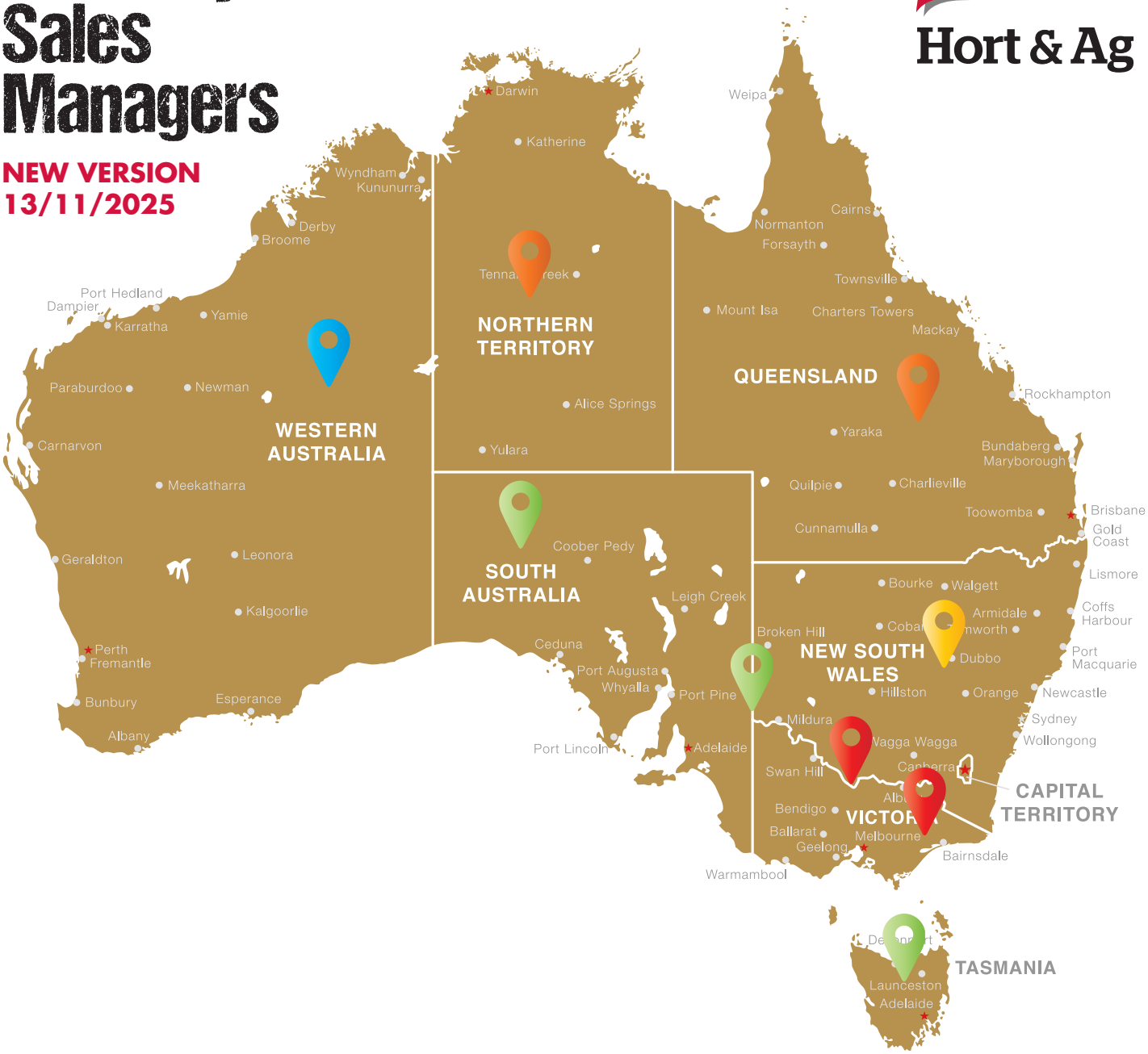


NATIONAL SALES MANAGER
John Hocking
M: 0408 455 948
E: johnhocking@seasol.com

TRAINING & TECHNICAL SALES MANAGER
James Gardner
M: 0408 025 139
E: james.gardner@ocp.com.au

QUEENSLAND & NORTHERN TERRITORY
TBC - John Hocking
M: 0408 455 948
E: johnhocking@seasol.com

NEW SOUTH WALES
Andrea Rozsa
M: 0407 535 235
E: andrearozsa@seasol.com.au

VICTORIA & RIVERINA
Danny Rabah
M: 0499 713 689
E: dannyrabah@seasol.com.au

SOUTH AUSTRALIA, TASMANIA & SUNRAYSIA
Chris Lloyd
M: 0448 769 196
E: chrislloyd@seasol.com.au

WESTERN AUSTRALIA
Bianca Dallas
M: 0411 186 947
E: bianca.dallas@seasol.com.au

AGFORCE AND QFIG JOIN FORCES TO COMBAT RISING Q FEVER THREAT.

AGFORCE AND THE Q FEVER INTEREST GROUP (QFIG) HAVE COMBINED FORCES TO SEEK URGENT GOVERNMENT FUNDING TO REDUCE RATES OF Q FEVER IN AUSTRALIA - WHICH HAS ONE OF THE HIGHEST INCIDENCES IN THE WORLD OF THE DEBILITATING DISEASE.

Q fever is a flu-like illness caused by a bacterial infection, which typically spreads to humans from animals such as cattle, sheep and goats.

Queensland accounts for around half of all Australia's cases of Q fever, with research showing that a Queenslander is eight times more likely to be diagnosed than someone from NSW.

Queensland Health Infectious Diseases expert and QFIG member Dr Robert Horvath says increased research funding to develop a new vaccine is urgently needed to address a concerning rise in Q fever cases.

"Less than 10% of infections with Q fever are diagnosed, most are missed," Dr Horvath says.

"We have been witnessing a largely persistent increase in case numbers in the past decade. Last year 873 Australians were diagnosed, and we are on trend to crack more than 1000 diagnoses this year. That would be the most cases of Q fever since 1992.

"Early intervention and diagnosis of Q Fever is critical to reduce the progression of the illness.

"But unfortunately, only a small proportion of people with chronic Q fever are diagnosed, and if it's not treated quickly - it can become a chronic condition."

AgForce Policy Director Ruth Thompson says one of their biggest concerns is how difficult chronic Q fever is to manage in regional, rural and remote locations.

"What we're really seeking is immediate funding to subsidise the existing Q fever vaccine," Dr Thompson says.

"The cost of Q-Vax is hundreds of dollars which is stopping some people from getting the vaccination - even though it's desperately needed.

"We really implore the government to better fund this and provide subsidised vaccination options - particularly for anyone who could potentially be exposed to Q fever.

"We also need more GP's available to administer this vaccination because that's a barrier as well."

Dr Horvath says a public awareness campaign along with increased training for doctors so they can better diagnose the disease would also reduce the risk of deadly complications.

"A University of Queensland research study in progress suggests there is a link between Q fever and living near a cattle-transport route - which is worrying because that involves no actual occupational exposure, and highlights the need for better treatment and prevention for a wider population," he says.

"Some cases are severe, with admissions to ICU or death. Meningitis is not rare with this, however people rarely test for it, and instead treat with ineffective agents."

While the existing Q-Vax vaccine is highly effective, it has several drawbacks.

- There is a high risk of allergic reaction
- Pre-pathology is required before the vaccine is administered
- The cost is prohibitive (between $300-$400) and involves multiple doctor visits
- The tyranny of distance to access doctors is a significant barrier

"The development of a new vaccine without the "reactogenicity" of the current Q-Vax vaccine would eliminate the need for the complicated pre-testing process, and would enable boosters every 10-20 years to ensure life-long protection," Dr Horvath says.

"A vaccine like this could potentially have a global market which may generate revenue for Australia as well as cement Australia as a medical technology leader for future investments.

"Stephen Graves at the ARRL (Australian Rickettsial Reference Laboratory) in Geelong is in the early stages of developing such a vaccine but is seeking $1.4million to progress this vaccine towards human trials.

"We cannot let such a potentially significant medical breakthrough for such a devastating disease fall over because of a lack of funding."

More financial support is also needed for epidemiology projects to investigate the devastating effects of Q fever in pregnancy, early childhood, Indigenous Australians, and high-prevalence regions to design more effective targeted vaccination and education campaigns.

MORE INFORMATION

Visit: www.agforceqld.org.au

Dr Mark Jackson and Dr Nipuni Thanthrige in the growth room. Image: Megan Pope, UQ.

Trial plant in growth room at UQ. Image: Megan Pope, UQ.

PEPTIDES TO PRIME PLANT DEFENCE AGAINST VIRUSES IN VEGETABLES

A CHEMICAL-FREE AND COST-EFFECTIVE WAY TO TACKLE VIRUSES IN AUSTRALIA'S MULTI-BILLION-DOLLAR VEGETABLE INDUSTRY IS THE FOCUS OF A 5-YEAR PROJECT BEING LED BY THE UNIVERSITY OF QUEENSLAND.

Dr Mark Jackson from UQ's Queensland Alliance for Agriculture and Food Innovation said rather than concentrating on controlling the insects that spread viruses, the team would identify molecules that prime defensive gene pathways in plants.

Some of the viruses we're looking at are transmitted so quickly that traditional methods like insecticides can't contain the spread," Dr Jackson said.

"Initially, we're looking at papaya ringspot virus, which affects zucchini and other vegetable crops in Queensland.

"The industry wanted innovative approaches to manage these problems so we started thinking about what molecules might induce defence gene pathways in plants at the very early stage of growth when the plants are most vulnerable."

Designed to safeguard Australia's $5.7 billion vegetable industry, the project is funded through Hort Innovation, the grower-owned, not-for-profit research and development corporation dedicated to advancing Australia's horticulture sector.

This initiative will focus on identifying the risks posed by viral diseases and developing innovative, sustainable solutions to manage them.

Dr Jackson said considering virus management, plant defence peptides or plant growth-promoting bacteria could be a key to solving the problem.

"We'll use molecular biology tools to look for peptide elicitors, which are molecules that simulate the presence of a virus, triggering a defence mechanism and allowing the plant to fight back," he said.

"We'll also look at beneficial bacteria from vegetable root systems.

"It's just like priming an immune defence in the plants.

"We're hopeful of success and already setting up the required high-throughput assays to find peptides and beneficial microbes to prime the defence response and also enhance growth.

"It's exciting to have support from Hort Innovation and the Department of Primary Industries to identify a sustainable pathway to control a wide range of viruses."

Hort Innovation CEO Brett Fifield said the project combined cutting-edge science with farming objectives.

"This research will support reduced reliance on chemical treatments by offering growers practical, eco-friendly virus control options," Mr Fifield said.

"It will also enhance crop resilience and productivity, helping to future-proof farming systems against emerging viral threats."

The project is funded by Hort Innovation using the research and development levies and contributions from the Australian Government, and the Department of Primary Industries.

The Queensland Alliance for Agriculture and Food Innovation is a research institute at The University of Queensland, established with and supported by the Department of Primary Industries.

MORE INFORMATION

Visit: www.qaafi.uq.edu.au

BIOLOGICAL FERTILISERS BUILD SOIL FERTILITY, **CARBON CREDITS FOR WIMMERA GROWERS**

LIKE MANY FARMERS, VICTORIAN WIMMERA GROWER GEOFF VIVIAN HAD PLENTY OF SCEPTICISM ABOUT USING BIOLOGICAL FERTILISERS, BUT AFTER FIRST-HAND EXPERIENCE WITH A SOIL CARBON PROJECT THAT IS SET TO PROVIDE VALUABLE INCOME FOLLOWING A TOUGH YEAR, HE IS NOW ON-BOARD AND EXCITED IN THE BENEFITS FOR FUTURE GENERATIONS.

Geoff said they used the mycorrhizal and nutrient seed treatment, SureCROP VAM, over all of their cropping program this year and it got crops "up and going with more vigour". He says the roots also went deeper and showed more microbodies.

Geoff and his family built an extra 3870 tonnes of soil carbon in the project, which was managed by AgriProve and used LawrieCo's soil carbon building fertilisers, and they are expected to be the first to receive payment for their efforts.

The project generated 10,548 Australian Carbon Credit Units (ACCUS) and Geoff is hoping it can achieve a good return. The current ACCU market is $37-$38 per credit unit.

"They are in the hands of brokers and available for sale," Geoff said.

"It's been very surprising and I still feel a little sceptical about everything being finalised, but it is good money and it will prove to be very handy after the year we had.

"If you can pull this lever and have it in your pocket after tough years, it will be valuable and we will look to increase projects over coming years."

Geoff and his wife, Donna, together with their eldest son, Liam, operate a 2430-hectare cropping program over their own property near Kaniva, plus leased and share-farmed land. They also run a small flock of Merino breeders crossed to White Suffolk terminal sires for prime lamb production, as well as trade sheep on summer stubbles. Geoff and Donna also have a younger son who is working on a nearby farm, and another son and daughter who are working and studying in Adelaide.

The family farms a mix of soils ranging from loamy Mallee country and red rising loam areas, through to blue clays and including some light black soils.

They rotate a range of crops on continuously cropped land, including wheat, barley, canola, oats and faba beans, which have been sown via their Horwood Bagshaw seeder with conventional fertilisers including Mono-Ammonium Phosphate (MAP) with zinc and manganese, and with applications of Urea. Stubbles also have been burned previously, but that has largely been to combat snails.

Geoff said after years of using synthetic fertilisers, their soils were becoming "a little stale" and were not producing strong crops.

"It got to a stage where we could have crops fall over, so we were looking at options."

"If we had yield mapping and were set up for variable rate applications, we could look at that. And with the costs of fertiliser and chemicals as well, we thought it was a better option for us to look at a good little project and opportunity with LawrieCo to see what happens."

Together with AgriProve, four areas were set up for the project, including a control area where the LawrieCo soil carbon building fertilisers were not applied, and they have since grown faba bean and canola crops.

Crop residue in the areas was retained and the LawrieCo fertilisers used included a foliar application of HumiPLEX ZMC at 3 litres/ha, while BioMAX F75 also was applied as a buffer with foliar chemical sprays at 125 millilitres/ha. Sourced from Nutrien Ag Solutions just over the border at Bordertown in South Australia, HumiPLEX ZMC contains 6 per cent zinc, 8pc manganese, 2pc copper, 9pc sulphur, 1.6pc fulvic acid, microbial metabolites and necromass (as biostimulants), while BioMAX F75 contains 75pc fulvic acid.

The average soil carbon increase in the treated areas was 7.1 tonnes/ha, compared with no increase in the untreated area.

Geoff said the faba beans also produced a lot more biomass and above average yields, while the canola, which was impacted by late spring rains causing disease, yielded similar to other crops.

Victorian Wimmera grower Geoff Vivian looks over land on the family's Kaniva property that has been improved with the use of biological fertilisers, and which has generated Australian Carbon Credit Units (ACCUS) under a soil carbon project.

Applications of additional LawrieCo fertilisers have continued in the project areas and also have now been adopted over the family's broader cropping program. These include the mycorrhizal and nutrient seed treatment, SureCROP VAM, the water-holding, concentrated humic product, BioMAX Soluble Humate Prill, which also contains natural chelated nutrients and is applied with their MAP fertiliser at seeding, and foliar-applied nutrients, NutriMAX PhosCal and BioMax BOOST.

"Being moisture-retaining, I had my doubts about the prills going out with the MAP, but it went well. It's very impressive in what it can do for fertility and moisture," Geoff said.

"We mixed the seed dressing in a spot sprayer and had good agitation for the application and that also went well.

"The (SureCROP) VAM on the seed gets the crops up and going with more vigour, and the roots have gone down deeper and are showing more microbodies. We have used the seed dressing everywhere and we saw great establishment and vigour, and we have used the foliar products on other paddocks.

"It's really shone-out this year, with the late start, just how healthy and dark green the crops are. I would normally have to be throwing out a lot more Urea to see that. We have put 80 kilos (per ha) out in some areas, but you can't tell the difference with where we haven't, particularly in the oats. I would have to be putting 180 kilos (of Urea) out to get them to look like that."

Jamie Weatherald, Senior Agronomist with Nutrien at Bordertown, said the Vivians had achieved great results with the LawrieCo fertilisers and they were gaining traction through the region to help build soil carbon and fertility.

"We didn't expect the uptake would escalate as quick as it has, and some of the results have been surprising and encouraging," Jamie said.

"There are a number of farmers in the area who have started (soil carbon) projects and the LawrieCo products definitely have a good fit.

"One of our main objectives is to build carbon and fertility in soils. We are doing this as part of our farming practices, so why not get paid for it now," he encouraged growers.

Jamie said the reliable farming region provided the opportunity for conventional and biological fertilisers to play a strong role in improving soil fertility and crop health.

Geoff said years ago, he never thought he would be applying biological products, but he now had good confidence to use them.

"We certainly never thought about it. We would just get on the tractor, sow it, go with your traditional applications and harvest it."

> ***"Now we are improving soil fertility and nutrient efficiency, and also increasing the land value, and that's what we want to do for the generations to come.***

"So far, our investment has been similar to our previous program, but once we get the soil fertility up, we will also trial backing-off our synthetic fertiliser rates."

He said the management of the soil carbon project by AgriProve, including soil testing and audits, went smoothly and they would look at further projects into the future.

"We have a new block that's about 800 acres (320ha) that we might have a crack at."

AUSTRALIA LEADS THE WORLD IN CLIMATE-SMART FARMING: **LANDMARK REPORT RELEASED**

A WORLD-FIRST INDEPENDENT REVIEW HAS CONFIRMED THAT AUSTRALIAN FARMERS ARE ACHIEVING LARGE-SCALE SUSTAINABILITY OUTCOMES UNDER SOME OF THE TOUGHEST CLIMATIC CONDITIONS ON EARTH. THE REPORT WAS OFFICIALLY RELEASED OVERNIGHT AT THE AUSTRALIAN PAVILION AT THE 2025 UNITED NATIONS CLIMATE CHANGE CONFERENCE (COP30) IN BELÉM, BRAZIL.

The Report 'Climate-smart agriculture: Australian sustainable farming practices enabled by plant science innovation – An independent technical review' clearly and comprehensively demonstrates how Australian farmers are leading the world in sustainable, modern, science-based agricultural production.

Commissioned by CropLife Australia and authored by leading independent agronomic scientist Dr John Rochecouste, the Report draws on peer-reviewed science, national datasets and industry case studies to document Australia's record of producing more food with fewer resources while improving its environmental score.

The Report highlights that Australia's farmers are already world leaders insustainable, low-emissions agriculture, proof that productivity and environmental performance go hand-in-hand when science and innovation are at the forefront.

KEY FINDINGS:

- **Lowest emissions intensity among major exporters:** Emissions for Australian farm produce are up to 42 per cent lower than peer nations. Agricultural emissions have fallen 20 per cent over the past 30 years while output rose by 60 per cent.
- **High adoption of conservation agriculture:** More than 90 per cent of Australia's crops are grown using minimum or no-till systems, improving soil organic matter content, reducing erosion and improving water retention.
- **Water efficiency breakthroughs:** Water productivity in cotton has improved 40 per cent in a decade (1.03 bales per megalitre vs the 2.07 global average); grain water-use efficiency has increased 60 per cent, delivering a $5.60 return for every $1 invested.
- **Sustainable intensification:** Australian agriculture has decoupled growth from land use - producing 60 per cent more output on 28 per cent less land than 30 years ago.
- **Best-practice stewardship:** Australia records the most sustainable pesticide use among comparable exporters (1.88 kg per ha), enabled by modern chemistry, precision agriculture and industry-led stewardship frameworks.

While celebrating these achievements, the Report warns that rising heat, water scarcity and pest pressures threaten to erode productivity unless innovation access keeps pace with climate change.

"Australia's farmers have long been among the most resource-efficient growers and producers in the world," said CropLife Australia Chief Executive Officer Matthew Cossey. "Operating in one of the most variable and challenging climates of any major agricultural nation, they have consistently adopted science-based innovations that lift productivity while safeguarding land, water and our unique biodiversity."

"Their success has been underpinned by science, innovation and stewardship: adopting new technologies and practices that drive yield gains, enhance resilience, improve sustainability and protect the environment.

"This Report documents Australia's climate-smart agricultural achievements along with what is needed to continue to reduce the intensity of farming's carbon footprint and meet the food and nutritional needs of Australia and the globe.

"It shows that integrating plant science innovations, including modern crop protection products, advanced genetics, crop biotechnology innovations and precision agriculture techniques, has played a decisive role in enabling Australian agriculture to produce more food, feed and fibre with a smaller environmental footprint.

"By contrast, in addition to substantially different cropping conditions and crop protection requirements, Brazil's higher pesticide use per hectare highlights the consequences of delayed or hindered access to crop protection innovations. An inefficient regulatory system which fails to utilise a science and risk-based approach has the potential to lock growers to older chemistries and technologies.

"Australia demonstrates what is possible when farmers have timely access to new, more efficient technologies through a modern, independent regulator, achieving greater productivity with less environmental impact.

"Sustaining Australia's leadership will depend on timely access to the next generation of plant science innovations. Limiting those tools risks shifting food production to nations who cannot compete with Australia's advantages in climate smart farming. This will lead to the phenomenon known as carbon leakage, which ultimately increases global emissions," concluded Mr Cossey.

The Report provides an evidence base for policymakers to strengthen science-based regulation, R&D investment and technology access to ensure Australian agriculture remains globally competitive, profitable and sustainable.

READ THE REPORT

Visit: www.croplife.org.au/resources/reports/climate-smart-agriculture-australian-sustainable-farming-practices-enabled-by-plant-science-innovation-an-independent-technical-review/

RESEARCHERS REVEAL "WEEVIL KINEVIL" COULD BE THE ANSWER TO A WICKED WEED PROBLEM IN AUSTRALIAN CROPS

A TEAM OF WORLD-LEADING RESEARCHERS FROM CSIRO, AUSTRALIA'S NATIONAL SCIENCE AGENCY, ARE EXPLORING IF A SMALL INSECT, THE STEM-BORING WEEVIL, LIXUS CAUDIGER, COULD HOLD THE KEY TO TACKLING FLAXLEAF FLEABANE; ONE OF THE MOST INVASIVE AND COSTLY WEEDS IN AUSTRALIAN GRAIN PRODUCTION.

The research, an investment by the Grains Research and Development Corporation (GRDC), aims to deliver biological control solutions for fleabane, a weed that costs Australian growers significantly each year in lost yields and control costs.

CSIRO is working closely with international collaborators in Brazil and France to identify and test fleabane's natural enemies, and the weevil which is native to South America has shown promising results from early trials.

This specific weevil feeds on fleabane leaves and stems, while its larvae burrow inside the stem tissue, hollowing out plant structures and weakening them until they collapse. The internal feeding often prevents the weed from flowering and setting seed, cutting into the weed's ability to spread.

The colony of weevils, housed in CSIRO's quarantine facilities, is undergoing further testing, with researchers carefully monitoring feeding, mating, egg-laying and larval development across a wide range of test plants. If the insect proves safe and effective, CSIRO will prepare submissions for regulatory approval before any potential field release.

The weevil is the focus of CSIRO entomologist Dr Michelle Rafter's research and is one of several new potential weed biological controls unveiled by Dr Ben Gooden in a keynote presentation on Wednesday at the South Australian Weeds & Pests Conference in Adelaide. Dr Gooden said the weevil research was part of a broader push to expand weed control options as part of GRDC's weed management investigations.

"The weevil is just one of four promising fleabane biocontrol candidates, but it's shaping up as potentially one of the most impactful."

CSIRO Principal Research Scientist, Dr Michelle Rafter said her team researching the weevil was witnessing promising signs that Lixus caudiger is highly specialised to fleabane, while not causing any damage to the crops themselves.

"So far, our testing shows the weevil is restricted to fleabane and its close relatives. That's exactly what we want in a biocontrol agent, something that hones in on the target weed without threatening native plants or crops."

Flaxleaf fleabane (Erigeron bonariensis) has become a headache for farmers across the northern, southern and western grain growing regions where it flourishes in non-cropped areas like fence lines and roadsides, sending clouds of wind-borne seed back into cropping paddocks.

GRDC Manager Weeds, Sarah Morran, stressed the importance of identifying cutting-edge weed control innovations on behalf of Australian grain growers and said investment in biocontrol was a priority because of its potential for cost-effective, long-term weed suppression.

Weeds cost growers significant amounts of money and impact on crop yields. By investing in innovative approaches like biocontrol, we're helping growers tackle herbicide resistance, using nature's own checks and balances to help manage weeds more sustainably.

Weed biocontrol is not designed to eradicate weeds but to reduce impact and allow other management practices to be more effective.

"Weeds like flaxleaf fleabane won't be beaten by chemicals alone. Integrated solutions, including biological control, could offer a sustainable pathway to protecting yields and profitability," Ms Morran said.

The project with CSIRO is in addition to the GRDC national Weed Management Initiative (WMI), a 5.5 year program bringing Australia's leading researchers and communications and extension specialists together to work on innovative, cutting-edge weed management research, development and extension.

WMI aims to provide sustainable and effective weed management strategies through four nodes across Australia, ensuring both national collaboration and regional specificity.

While it may take several years before the weevil could be released into paddocks, the CSIRO research team is optimistic.

"Finding a safe, effective biocontrol agent takes patience, but the payoff is worth it," Dr Rafter said.

MORE INFORMATION

Visit: www.groundcover.grdc.com.au

The delving implement in action bringing the clay to the surface. (Photo credit: The University of Queensland)

Dr Guta Bedane is leading the practical research on the ground. (Photo credit: The University of Queensland)

The delving implement is pushed more than 40 centimetres below the surface and dragged along by a tractor. (Photo credit: The University of Queensland)

CATTLE, CROCS AND NOW CROPS: **BOOSTING NT'S EMERGING INDUSTRY**

RESEARCHERS FROM THE UNIVERSITY OF QUEENSLAND ARE DIGGING DEEP TO IMPROVE SOIL HEALTH IN THE NORTHERN TERRITORY AND DEMONSTRATE THE POTENTIAL OF AN EMERGING CROP INDUSTRY.

KEY POINTS

- UQ researchers are trying to improve the fertility and water holding capacity of soil in the Northern Territory.
- A delving implement is being used to disrupt the subsoil and organic matter is being incorporated, a proven strategy used by growers in Southern Australia.
- The trial is being held at 6 sites in the Northern Territory including Darwin, Alice Springs and Katherine.

Lead researcher Associate Professor Yash Dang from UQ's School of Agriculture and Food Sustainability said the presence of clay beneath the region's infertile, dry and sandy surface presented an opportunity for farmers.

"Clay can help improve the sandy soil, which is generally low in organic matter and water holding capacity," Dr Dang said.

"Many growers have tried to apply organic matter to the surface of their paddocks but because of the high temperatures and high soil aeration, it is oxidised and doesn't last long.

"What we are proposing is to penetrate the surface and incorporate organic matter into the subsoil so it can act as a slow-release nutrient bank and improve soil vitality.

"We use an implement called a delver, which is dragged behind a tractor to disrupt the soil below the surface creating 40-centimetre channels where we add the organic matter."

Dr Guta Bedane is working in partnership with the NT's Department of Agriculture and Fisheries and farmers across 6 sites in the Northern Territory including Darwin, Alice Springs and Katherine.

Field day participants were taken through the crop and discussed the farming methods involved. (Photo credit: The University of Queensland)

Darwin agronomist Fergal O'Gara is hosting one of the trial sites on his property. (Photo credit: The University of Queensland)

Northern Hub regional soil coordinator Emily Hinds (Photo credit: The University of Queensland)

"Delving improves the soil twofold – it brings the negatively charged clay from the subsoil to the roots and there it attracts basically anything that's good for the crop, including organic matter and fertilisers," Dr Bedane said.

"Bringing clay to the root zone will enhance soil water holding capacity, soil structure and microbial abundance with the addition of organic matter.

This will boost the crop yield and biomass and increase the carbon in the soil.

"This is a very new concept in the Northern Territory, but it has proven success in large cropping areas of Western and South Australia.

"It's like renovating a house, it's not something you do every year or every 5 years. It's a long-term renovation that lasts for decades."

As part of the trial, barley is being grown using 5 different treatments of: compost, green manure, delving alone, delving with green manure and the control, which is the existing farmer's practice.

"We don't have concrete results yet, but we just did some biomass sampling and the crop grown on the delved plot with organic matter incorporated could yield about 30 per cent higher than the control treatment," Dr Bedane said.

"We need to confirm results across sites and seasons, but early signs are very promising."

Darwin agronomist Fergal O'Gara is hosting one of the trial sites on his property.

He said the trial was an opportunity to learn more about the potential of improving local soils to be fertile and productive for cropping.

"It'll be very interesting to see if delving can help improve soil health in conjunction with other practices like liming and cover cropping," Mr O'Gara said.

"You just never stop learning and every time you go out in the paddock, every time you put an implement in the paddock or put a new crop in the paddock, you do learn."

The trial will continue for 4 years, with different crops planned for next season.

Northern Hub regional soil coordinator Emily Hinds said the trial was an opportunity to prove southern Australia techniques like delving could work in the Northern Territory.

"Bringing this research up here to demonstrate is really important," Ms Hinds said.

"The cropping industry has been around for a while, but I guess we haven't had the science to confirm its potential.

"That is why I am so excited about this project because it gives us the evidence to move forward with confidence."

A the end of the trial, the delving implement will be gifted to trial partner Northern Territory Department of Agriculture and Fisheries making it available to local producers.

Field day participants were taken through the crop and discussed the farming methods involved.

Field days will continue to be held throughout the trial offering local producers and industry stakeholders an opportunity to learn more about its potential.

COLLABORATION AND ACKNOWLEDGEMENTS

The project is supported by the Australian Government through funding from Climate-Smart Agriculture Program under the Natural Heritage Trust.

MORE INFORMATION

Visit: news.uq.edu.au

KNOW BEFORE YOU SOW: **AUSTRALIAN SEED FEDERATION (ASF) CHAMPIONS SEED QUALITY AND INTEGRITY**

THE AUSTRALIAN SEED FEDERATION (ASF) IS REINFORCING THE IMPORTANCE OF SEED QUALITY, TRANSPARENCY, AND RESPECT FOR PLANT BREEDERS' RIGHTS (PBR) IN BUILDING A RESILIENT AND TRUSTED AGRICULTURAL SECTOR.

As the peak industry body for the Australian seed industry, ASF represents stakeholders across the entire seed supply chain. From plant breeders and seed growers through to processors, marketers, and exporters. ASF works nationally and internationally to promote high-quality seed, foster collaboration, and maintain strong industry standards that underpin Australian agriculture's growth and reputation.

ASF Chief Executive Officer Katherine Delbridge said the message is simple: quality seed matters, and everyone has a role to play in protecting it.

"Seed is the foundation of every crop and, by extension, our entire food and fibre system. Choosing quality-assured seed gives growers confidence in what they're sowing and supports strong yields, better plant vigour, and improved resistance to pests, weeds, and diseases. At the same time, we all share a responsibility to respect Plant Breeders' Rights and avoid practices that undermine the innovation driving new varieties," Ms Delbridge said.

The risks of poor-quality seed are well-known: lower germination rates, stunted growth, increased disease pressure, and inconsistent genetic performance.

These challenges can quickly turn into financial losses through reduced yields, the costs of replanting, or added chemical control. ASF's Know Before You Sow campaign directly addresses these issues by encouraging growers, agronomists, and advisers to source only certified or quality-assured seed. A central part of the campaign is the Know Before You Sow checklist, which helps growers assess seed quality and biosecurity before buying. The checklist and a short video message from Ms Delbridge introducing the checklist can be found on the ASF website.

"Cutting corners on seed is a false economy. Every grower deserves certainty about the seed they are purchasing, and every adviser should feel confident recommending it. Certification and quality assurance are the clearest signals that a seed meets industry standards and can be trusted to deliver results," Ms Delbridge said.

ASF members commit to following the ASF Code of Practice for Labelling and Marketing of Seed, which requires clear information about seed variety, certification, and quality. This protects buyers from misleading claims, sets a benchmark for ethical conduct, and helps build a trusted marketplace. The ASF Member Directory is also available online to help growers identify trusted suppliers across Australia. Certification additionally provides an Australian 'stamp of approval' for export markets, ensuring seed meets strict international requirements.

One of the most pressing concerns for the industry is the on-selling of seed without proper authorisation or labelling. In some cases, unmarked seed has been distributed in plain bags, undermining industry standards and creating risks for buyers. Under PBR law, plant breeders are granted exclusive rights to produce and sell their varieties. Selling farm-saved seed or trading seed from protected varieties without permission is a direct infringement. Such practices compromise the investment made by plant breeders and weaken the incentive to develop new, improved varieties that benefit growers and consumers alike.

"Innovation is at the heart of modern agriculture. Respecting Plant Breeders' Rights ensures that the pipeline of new, improved varieties continues to flow. It also safeguards the integrity of our industry and helps maintain Australia's reputation as a reliable source of quality seed," Ms Delbridge said.

Plant Health Australia (PHA) CEO Sarah Corcoran highlighted the biosecurity dimension of seed quality and integrity. "Seeds can be a pathway for pests, diseases, and weeds that threaten Australia's agriculture. By sourcing only quality-assured and certified seed, growers are not just investing in their own success, but they are also contributing to the protection of our broader farming systems. Good seed choices are good biosecurity practices," Ms Corcoran said.

This connection between seed quality and biosecurity is central to Australia's agricultural resilience. The Know Before You Sow campaign provides growers with tools such as the checklist and the Pasture Seed Database to guide decision-making and support stronger outcomes across the industry.

ASF's campaign is not about fear, but about positive change and informed choice. By lifting industry standards and increasing awareness, ASF aims to support growers in achieving stronger results while protecting the reputation of the broader seed sector. Ms Delbridge said the Federation wanted growers and advisers to feel empowered when making seed decisions.

"Our industry thrives when growers, advisers, retailers, and breeders work together. The Know Before You Sow campaign is about empowering everyone in the supply chain with the knowledge to make confident, transparent, and responsible choices," said Ms Delbridge.

ASF encourages growers, agronomists, and retailers to engage with the resources available and to ask questions when sourcing seed. If a bag is unlabelled, uncertified, or unclear, growers are urged to walk away and instead seek out suppliers that provide full transparency and assurance. By choosing quality-assured seed and respecting intellectual property rights, Australia's seed industry can continue to deliver value to farmers, strengthen biosecurity, and support the sustainability of agriculture for the future.

MORE INFORMATION

Visit the ASF website: ausseed.org.au

AUSTRALIAN WEED FIGHT BREAKTHROUGH **GETS GLOBAL ATTENTION**

AT THE INTERNATIONAL WEED SCIENCE CONGRESS IN CHINA, A WORLD-LEADING QUEENSLAND RESEARCHER PRESENTED FINDINGS OF TRIALS DEMONSTRATING BREAKTHROUGHS IN MANAGING A COSTLY WEED – PHALARIS – ACROSS ASIA AND AUSTRALIA.

The trials reveal that combining targeted herbicides, innovative crop competition and specific planting systems delivers effective control.

The findings will help Australian grain growers manage Phalaris (Phalaris paradoxa) more economically and sustainably. They are also attracting strong international interest.

The research, funded by the Grains Research and Development Corporation's (GRDC) Weed Management Initiative, is led by University of Queensland (UQ) weed researcher Professor Bhagirath Chauhan. He is challenging long-held approaches to eliminating weeds in crops with new findings on the integrated management of Phalaris.

Professor Chauhan leads the Queensland and northern NSW node, one of four nodes across Australia, of the $47 million Weed Management Initiative. He said the findings of trials across northern NSW confirm that sustainable weed management depends on combining herbicides with good agronomy.

The management of Phalaris has traditionally been through the sole use of post-emergent herbicides, however Professor Chauhan and his team are combining different pre-emergent herbicide use with crop competition, specifically through optimal seeding rates and row spacing, while using tyne sowing rather than discs to sow the seeds.

Professor Chauhan said that rather than just one line of attack against Phalaris using chemicals, he found using multiple methods was delivering outstanding results, particularly as the weed had developed resistance to many post-emergent herbicides.

"In 3 of 4 on-farm trials in 2024, our strategies to manage Phalaris outperformed the industry-standard single post-emergent herbicide approach. We recorded yield increases of up to 27 per cent in wheat and clear weed suppression advantages in chickpea," Professor Chauhan said.

As part of GRDC's Weed Management Initiative, we are repeating these trials to make sure what we observed once is in fact repeatable and could become part of northern cropping programs.

Northern NSW grower, Matt Langfield got involved in the Weed Management Initiative trial off the back of an increased presence of Phalaris that he was keen to understand and get on top of.

"We have a bit of an issue with resistant Phalaris in our winter cereals, mainly wheat. And we struggle to control Phalaris purely with in-crop herbicides," Mr Langfield said.

"So, we're working with Bhagirath in this trial to try and understand how we can use plant density in conjunction with herbicides in our system."

In a field at his Bellata property, Mr Langfield showed how the team had been testing how plant density, varying the number of seed per square metre sown, had produced different rates of competition with the Phalaris.

We've also worked on sequential herbicide applications, applied before the weeds emerged and then followed by post-emergence spraying. It's provided consistent and near-complete Phalaris control – this is a new approach for us, and we were keen to test its impact.

The research is also looking at the significance of using a tyne planter, rather than a disc, with pre-emergent herbicides to prevent crop toxicity. The tyne throws treated soil out of the furrow and prevents damage to the crop.

"We're looking at how different herbicides can be rotated or used in sequence, and how non-chemical strategies like crop competition can work alongside them. Ultimately, the goal is to reduce the weed seed bank and identify the best integrated weed management program for growers," said Professor Chauhan.

GRDC Senior Regional Manager – North, Rebecca Raymond, said Australian weed research was respected globally, with Professor Chauhan leading the Scientific Program Committee and GRDC Manager Weeds, Sarah Morran, attending the upcoming International Weed Science Congress in Nanjing, China.

"Australia isn't the only country to struggle with Phalaris in grain crops. The first herbicide-resistant Phalaris minor occurred in India in the 1990s, and it is now a problem across other Asian countries' winter crops as well," Ms Raymond said.

"Australian research and innovation is sought internationally to help with this weed, and it's great to share our knowledge about non-chemical methods to help manage it.

Relying on one herbicide mode of action is not sustainable. By integrating herbicide programs with competitive crops, we can protect yields now and preserve our chemistry options for the future.

GRDC's Weed Management Initiative, is a 5.5-year program bringing Australia's leading researchers and communications and extension specialists together to work on innovative, cutting-edge weed management research, development and extension.

It aims to provide sustainable and effective weed management strategies through the four nodes across Australia, ensuring both national collaboration and regional specificity.

A key component of the initiative is capacity building, with UQ establishing three PhD positions and one postdoctoral position to develop the next generation of weed science experts.

GROWING SESAME: AUSTRALIA'S NEXT BIG CROP OPPORTUNITY

ON A COTTON FARM NEAR EMERALD IN CENTRAL QUEENSLAND, SOMETHING UNUSUAL IS TAKING ROOT. AMONG THE COTTON, MUNG BEANS AND PEANUTS THAT TYPICALLY FILL THE ROTATION, A SMALL BUT MIGHTY CROP IS SHOWING ITS POTENTIAL TO CHANGE THE FACE OF AUSTRALIAN AGRICULTURE: SESAME

This is no ordinary sesame. These are elite varieties, introduced to Australia in 2017, that don't shatter at harvest and can be machine harvested, innovations that have opened new possibilities for a crop once considered unviable.

FARMERS LEADING THE WAY

Cotton grower and Queensland Farmers' Federation President Aaron Kiely has been trialling sesame on his 1,500-acre irrigated property in the Central Highlands. For him, the attraction lies in sesame's fit with the local climate and its potential as a profitable rotation crop.

"Sesame is something different and I think it could suit our climate here in the Central Highlands," he explains.

> *"There's plenty of opportunity with sesame into the future if we can get processing facilities. Right now it's about understanding what yields we can get, the best way to plant and how it fits in with our system."*

Kiely has worked closely with CQUniversity researchers, experimenting with planting configurations and timings.

"As a grower, I love to learn from agronomists coming onto the farm," he says. "It's just great to watch an industry grow and to be part of producing a new variety that could suit our climate."

MEETING DOMESTIC DEMAND AND EYEING EXPORTS

Australia currently imports around 10,000 tonnes of sesame each year, mostly from Asia and Africa. The opportunity to substitute imports with a homegrown product is significant and the clean, green reputation of Australian agriculture could also secure a premium in international markets.

Daniel Weinstock, chairman of the Australian Sesame Industry Development Association (ASIDA), says the industry has its sights set high.

"The world price of high-quality sesame is excellent and stable and we can compete," he says.

"Our clean, green, fully tested crop enables us to achieve a premium price for export. If we replace 10,000 tonnes of imports here, we can then expand to 200,000 to 400,000 tonnes for export. But we don't just want to export seed — we want to encourage value-added processing here in Australia, from tahini to protein extractions for pharmaceutical and nutraceutical uses."

NEW GENETICS SPARKING OPPORTUNITY

In the early 2000s, attempts to establish sesame in northern Australia faltered. Shattering varieties meant up to 75% of yield was lost at harvest. The breakthrough came when seed company Agriventis Technologies partnered with global breeders Equinom and Sesaco to bring in elite non-shattering varieties.

Andrew MacDonald, Agriventis' technical operations manager, recalls the turning point: "I'd seen the crop before, but they were old shattering varieties. In 2017, new genetics became available. We put them through quarantine, trialled them and they proved suitable for our climate. Both the white and black varieties now available have really good attributes."

RESEARCH DRIVING COMMERCIALISATION

The introduction of these varieties sparked investment in sesame research, including AgriFutures Australia's $2 million Sesame Program of Research and the Cooperative Research Centre for Northern Australia's $4 million Great Northern Spices project.

CQUniversity's Associate Professor Tineke Trotter leads many of these trials across regions from Kununurra to Kingaroy. She says the research is vital to equip growers with the knowledge needed for successful adoption.

"Sesame is unique compared to our other crops. It offers diversification and resilience, but we don't yet know everything about commercially growing it," she says.

"Our research covers everything from crop protection and nutrient management to the mechanics of planting and harvest. Even the tiny seed shape presents challenges for precision planting."

FROM TRIALS TO SUPPLY CHAINS

While commercial production is still in its infancy, small trial harvests are already finding their way into value chains. Kingaroy-based Plenty Foods has produced Australian sesame oil for several years, sourcing seed from Queensland trial crops.

Founder Josh Gadischke says it's a specialty product with potential.

"We produce a raw sesame oil, cold-pressed from unroasted seeds. It's a small line, but we've got the capacity to scale up. The opportunity is there if raw material supply and consumer demand grow together."

A GRADUAL BUT PROMISING BUILD

Despite the excitement, industry leaders stress the need for steady progress. "Nobody likes a failure," says Trotter.

"We'd rather carry those through research and provide growers with solid information to succeed."

MacDonald agrees, pointing to the importance of building infrastructure and market confidence. "One of the next steps is purpose-built grading facilities. We're not a commercial business, so it will take investment from companies to step into that space. But once structured properly, sesame could fit the Australian farming system very well."

He also sees sesame's potential to follow the path of other once-niche crops. "I've seen mung beans grow from a cottage industry to a 100,000-tonne crop with good genetics. Sesame could do the same. It loves the heat and it flowers in tough years when other crops struggle. That's a big advantage."

THE SEED OF A NEW INDUSTRY

With elite genetics, committed researchers and an enthusiastic grower base, sesame is edging closer to commercial reality in Australia. If infrastructure and markets develop as expected, the tiny seed could soon become a big player — not just in diversifying farm rotations, but in creating new value-added industries at home and opening premium export opportunities abroad.

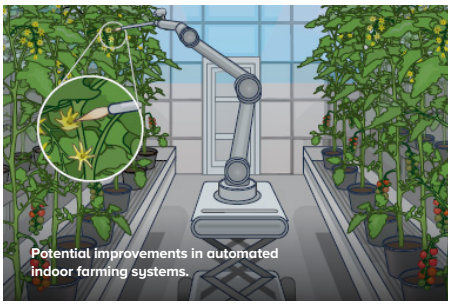
As MacDonald puts it: "We're probably at the point now where we've got enough seed to start small-scale commercial crops. From here, it's about working out the best systems so growers can achieve the highest yields. The potential is huge."

MORE INFORMATION

Visit: agrifutures.com.au

Barley crop in speed breeding glasshouse at UQ.
Image: Megan-Pope, UQ

Dr Yasmine Lam in the speed breeding glasshouse.
Image: Megan Pope, UQ.



Potential improvements in automated indoor farming systems.

CO-DESIGNING BIOLOGY AND TECHNOLOGY UNLOCKS AUTOMATED PLANT BREEDING

UNIVERSITY OF QUEENSLAND RESEARCHERS SAY CO-DESIGN COULD BE THE KEY TO LINKING PLANT BREEDING WITH BIOTECHNOLOGY TO OVERCOME BOTTLENECKS.

In an opinion piece in Nature Plants, Dr Yasmine Lam and Professor Lee Hickey discuss the possibilities opened up by a study integrating robotics with cross pollination of genome engineered tomato plants.

“Work by Xie et al published in Cell has found a way to address the painstaking manual labour required to cross-pollinate, a major bottleneck in plant breeding, ” Dr Lam said.

“Instead of concentrating on building robots to handle the intricacies of crops, they’ve genetically engineered the crops to work within the constraints of the robots.

“At the moment creating the next generation of improved varieties of some crops still relies on skilled technicians transferring pollen by hand, one flower at a time.

“This study reverse engineered the program, editing the genome in tomato plants to generate robot-friendly flowers with protruding stigmas the robots could reach.”

Dr Lam says the proof of concept suggests new ways of thinking about problems in general.

“On the broader scale it inspires me to reshape my approach in melding our biotech work with other areas of crop science,” she said.

“It lends itself to opening that door, truly integrating technologies rather than relying on experts to individually take their own technologies to the next stage.

She said obvious challenges remain like regulations for gene-edited crops in different jurisdictions, but there is increasing acceptance of the technology globally which makes it an exciting time to be a plant scientist.

“The future of plant breeding may depend not on a choice between biology and technology but on designing both in conjunction with each other to unlock capabilities neither could achieve alone,” Dr Lam said.

“If crops can be engineered to be compatible with robotics, what other biological–technological convergences can we discover?

“The answer may not only reshape plant breeding, but how we merge biology and artificial intelligence to solve our greatest challenges.”

The opinion piece was published in Nature Plants.

Dr Lam and Professor Hickey’s research using genome editing to improve crops is supported by the Australian Research Council through a Future Fellowship (FT220100350) and by the Department of Primary Industries.

MORE INFORMATION

Visit: **qaafi.uq.edu.au**

The Queensland Alliance for Agriculture and Food Innovation is a research institute at The University of Queensland established with and supported by the Department of Primary Industries.

NEXT GENERATION WEED MANAGEMENT TAKES CENTRE STAGE AT GATTON AGTECH SHOWCASE

AUSTRALIA'S HORTICULTURE INDUSTRY IS SET TO BENEFIT FROM A MAJOR INNOVATION IN WEED MANAGEMENT, ANNOUNCED AT THE GATTON AGTECH SHOWCASE.

The Next generation weed management project - a three-part project being delivered by Applied Horticultural Research, Nufarm, and La Trobe University, and funded by Hort Innovation - aims to transform how growers tackle weed challenges through smarter, more sustainable solutions via adoption of AI-enabled robotics, machine learning, non-chemical options, and autonomous vehicles that weed, plant and spray.

Drilling into the technology elements of the $30 million project, Gatton AgTech Showcase attendees heard about the project's focus on real world integration of emerging technologies onto farms and data collection to understand the opportunities more broadly. This project will help growers become more productive and support them as they continue to face growing labour and input costs.

Brett Fifield, CEO at Hort Innovation, explained more: "Productivity isn't just about scale- it's about strategy. This project is a prime example of how we're investing in smarter ways to grow. By linking this initiative to the broader productivity agenda, we're helping growers farm smarter."

"Our 2025 report on horticultural productivity with the Centre for International Economics revealed that automation, and AI and machine learning are two of the powerful drivers that will create a more productive and profitable sector for our growers. At the Gatton AgTech Showcase, this week, growers are being given the opportunity to see some of this smart weeding technology in action, giving them a look to the future – and creating a lot of excitement about its potential along the way."

The Factors Driving Horticulture Productivity report, found that targeted action in areas such as mechanisation, AI-driven insights, and cost analysis could generate up to $1 billion annually in additional value, reaching $22 billion by 2040.

FarmTech Australia spokesman Richard Gorman said this nationwide grower collaboration will see the latest AI-powered technology thoroughly tested in different crops, climates, soil types and farming systems.

Photo credit: Hort Innovation

"We are testing them under practical, commercial conditions so all growers can have confidence in the paddock research, which will accelerate the uptake of the best performing precision farming aids."

"Growers are front and centre of every stage of this project so we deliver outcomes that all farmers can benefit from. The aim is to farm smarter, reduce operating costs, improve the productivity of Australian horticulture and remain globally competitive," Gorman concluded.

This project marks a significant step forward for the industry and is already being designed in collaboration with growers to ensure it is fit for purpose.

THE THREE NEXT GENERATION WEEDING PROJECTS INCLUDE:

Applied Horticulture Research: Partnering with grower-led groups in Queensland and Victoria to accelerate the adoption of AI-enabled robotics and autonomous vehicles for weeding, planting and spraying. The project focuses on real-world integration of these emerging technologies into Australian vegetable farms, providing support services, production system adjustments and clear economic analysis to reduce the risk for wider industry uptake.

Nufarm Australia: Is collaborating with Croplands and Kilter, is developing an autonomous robotic precision spot-spraying system that uses advanced machine learning and green-on-green weed detection to apply microdroplet herbicides directly onto individual weeds. This smart spraying technology is designed to reduce herbicide use by up to 95% while increasing yield and lowering labour costs.

La Trobe University: In partnership with the Northern Territory Department of Agriculture and Fisheries, is leading a research initiative to investigate Anaerobic Soil Disinfestation (ASD), a chemical-free method of weed and pathogen control gaining traction overseas.

Next-generation weed management (BY23002) is funded through Hort Innovation Frontiers with co-investment from Applied Horticultural Research, La Trobe University, Northern Territory Department of Agriculture and Fisheries, Nufarm Australia, Tripod Farmers, Kalfresh, Kalfresh-VeeJays and Qualipac (through FarmTech Australia), and contributions from the Australian Government.

WARM RECEPTION AT DPIRD DALE FROST FIELD DAY

THE LATEST ADVANCES IN FROST RESEARCH WERE REVEALED AT THE DEPARTMENT OF PRIMARY INDUSTRIES AND REGIONAL DEVELOPMENT'S (DPIRD'S) ANNUAL DALE RESEARCH FIELD DAY.

DPIRD research scientist Dr Brenton Leske (left) discussed the latest frost research advances at the recent Dale field day.

The latest advances in frost research were revealed at the recent Department of Primary Industries and Regional Development's (DPIRD's) annual Dale Research Field Day.

About 40 visitors to the Dale Research Station, near Beverley, heard how DPIRD works on a range of fronts to help grain growers reduce the impact of frost events, backed by co-funding from the Grains Research and Development Corporation (GRDC).

Frost events can cost Australian grain growers hundreds of millions of dollars per annum in lost production and quality, in addition to a significant emotional toll.

While so far this year there have not been widespread frost events across the State, there were reports of isolated occurrences in the Avon Valley, Great Southern and Lakes district.

Research scientist Brenton Leske profiled research to validate anecdotal evidence that the structure and composition of a plant can influence its sensitivity to frost damage during flowering.

"Observations and research findings from past research have pointed to greater frost protection from physical features, such as heads, the lack of awns and some vascular anatomical features," Dr Leske said.

"The results from this project will establish whether it is possible to manipulate such traits to help wheat breeders produce new varieties that will improve crop yields in frost-prone cropping environments."

Another joint DPIRD-GRDC project builds on previous research that used controlled environment screening to show differences in frost sensitivity could be due to differences in plant tissue composition and how they respond to freezing injury.

"This research seeks to validate this finding under field conditions using a breeding population and a diversity panel of wheat lines," Dr Leske said.

"The project aims to identify molecular markers for frost tolerance across a greater range of wheat lines.

> ***"We will assess whether new profiling methodologies can be developed into a reliable selection tool for wheat breeders and pre-breeders to aid the development of new, more resilient wheat lines."***

The Dale site is one of three sites nationally, with the others at Mintaro, South Australia, and Wagga Wagga in New South Wales.

DPIRD research scientist Amanuel Bekuma told the gathering research to improve chickpea frost chilling is also progressing, which has identified up to 20 lines that consistently showed more than 80 per cent pod viability under chilling period.

Increasing the cold tolerance of chickpea could lead to improved productivity nationally and the expansion of chickpea cultivation in southern regions of Australia.

DPIRD research scientist Meredith Guthrie provided an overview of frost forecasting, frost maps and climate outlooks to help growers navigate the remainder of the season.

"Frost can still occur in October, with Wandering having on average five nights below 2C," she said.

"Unlike rainfall, frost is difficult to forecast, however, growers are generally aware of where frost occurs on their farm and online tools are available to guide when best to inspect paddocks for damage.

"Growers can use DPIRD's Extreme Weather Events tool, which indicates where frost events have occurred in WA, while the Bureau of Meteorology's MetEye tool forecasts frost up to a week ahead."

MORE INFORMATION

For more frost tools and support, identification guides, risk and frosted crop options visit the Frost webpage: www.dpird.wa.gov.au/businesses/plant-and-crop-farming/grains/frost/


Photo credit: Hort Innovation

ROCKING AUSTRALIAN GROWER'S CARBON CAPTURE

A NEW RESEARCH PROJECT IS SET TO EXPLORE IF CRUSHED ROCK DUST COULD HOLD THE SOLUTION TO CAPTURING CARBON FOR AUSTRALIAN GROWERS COUNTRYWIDE.

Announced in September by Hort Innovation Frontiers, the project is investigating how this crushed rock dust could help sequester carbon dioxide (CO_2) and improve soil fertility, with trials now underway across multiple farming regions.

Led by the University of Sydney, the four-year project will determine whether enhanced rock weathering (ERW) - a method that involves applying finely crushed rocks to agricultural soils – is a suitable and effective approach for Australian soils and growing conditions. If successful, it could offer growers a practical way to capture carbon and improve soil health at scale.

Hort Innovation CEO Brett Fifield said the project represents a significant opportunity for the horticulture sector: "This project is a bold step toward climate-smart horticulture. By harnessing the natural power of rock dust, we're supporting carbon capture and helping growers build healthier, more resilient soils, supporting productive horticulture for years to come."

Balwant Singh, Professor of Soil Science at the University of Sydney explained how the method works in practice: "When rock minerals react with dissolved CO_2 in soils, they form bicarbonate ions which either remain in the soil or are carried by water into the ocean. In both cases, CO_2 is removed from the atmosphere and locked away for thousands of years. This process not only helps mitigate climate change but also releases essential nutrients like potassium, magnesium, and calcium, which can enhance soil health and crop productivity."

In collaboration with AgSeq, the research team will trial a range of rock types across different soil profiles and climate zones to test performance including field, glasshouse and laboratory trials.

A spokesperson from AqSeq said "We're excited by the opportunity to test this approach alongside growers. Working directly with the horticulture industry means we can ground the science in day-to-day realities on farm, ensuring the outcomes are useful and relevant. The idea that it can help capture carbon while also improving soils is promising, but what matters most is how it performs in real growing conditions. By testing across different regions and crops, we hope to learn where this approach makes sense and how it could support both productivity and long-term soil health."

If deemed suitable for Australian conditions, the project will support adoption by developing a national suitability map that identifies where in Australia this method is most likely to deliver desirable outcomes.

Researchers will also examine the environmental, social and economic impacts of adopting ERW at scale, and develop a methodology to verify how much carbon is stored.

As the project progresses, findings will be shared with industry to support informed decision-making and future investment.

This project is funded through Hort Innovation Frontiers with co-investment from the University of Sydney and contributions from the Australian Government.

MORE INFORMATION

Visit: horticulture.com.au

Associate Professor Tieneke Trotter inspects the kalonji trial crop growing at Emerald's Central Queensland Smart Cropping Centre.

SPICY NEW CROP OPTIONS FOR FARMERS IN NORTHERN AUSTRALIA

EFFORTS TO SPICE UP NORTHERN AUSTRALIA'S CROP OPTIONS ARE GATHERING PACE WITH THIS SEASON'S TRIALS OF KALONJI AND FENNEL PROVING TO BE SOME OF THE BEST-PERFORMING YET.

Researchers from CQUniversity's Institute for Future Farming Systems have been working with the Cooperative Research Centre for Developing Northern Australia and a range of industry partners since 2019 to identify and develop new spice crops.

In 2022, they narrowed their focus to three high-value products – sesame, kalonji and fennel, and after three more years of trials to determine the best varieties, growing conditions, crop nutrition, weed management and harvest techniques, researchers are confident they've now got a viable industry on their hands.

CQUniversity Associate Professor Tieneke Trotter said this season's kalonji and fennel trial crops grown at the Central Queensland Smart Farm in Emerald, west of Rockhampton were particularly exciting.

"This is the best crop performance we've seen so far. With harvest just around the corner, we're anticipating some strong yields," A/Prof Trotter said.

"Initial trials showed promise for the adaptability of these crops to the northern environment in winter, and the crop performance in Emerald this season will hopefully complete the picture around viability due to yield performance."

Australia imports about 100 tonnes of fennel seeds and 100 tonnes of kalonji each year, mostly from India and China.

Fennel and kalonji seeds are used as spices in curries, soups, marinades and teas. The varieties of fennel grown for seed is different to those grown for fresh bulb production and the seed has not been grown commercially in Australia before.

Kalonji, also known as black seed, nigella seed or black cumin has a strong earthy taste and is the black seed you typically see sprinkled on Turkish bread and naan bread, alongside sesame seed.

"Average crop yields for Indian-grown fennel are around 1.5 tonnes per hectare and kalonji is about one tonne, so that's what we're aiming to achieve here in the trials," A/Prof Trotter said.

"We have done an extensive amount of work to determine how to best grow fennel and kalonji in northern Australia for optimal yield and quality."

Associate Professor Trotter said the team had recently released grower guides for kalonji and fennel as well as sesame which would arm farmers with the key agronomic information they needed to successfully grow the spice crops.

CRCNA Chief Executive Anthony Curro said with the right partnerships and continued investment, the spice crops could become an important part of northern Australia's farming future.

"These results highlight the positive outcomes of bringing together researchers, industry and producers to diversify and strengthen northern Australia's agricultural opportunities," Mr Curro said.

"The promising performance of kalonji and fennel shows there is real potential to build new markets and income streams for growers, while reducing our reliance on imports."

At a field day in Emerald this week, growers were invited to inspect the kalonji and fennel trial crops and watch a planting demonstration for this season's jointly funded CRCNA and AgriFutures Australia sesame research.

AN INTEGRATED VISION FOR PREDICTING CROP SUCCESS

A SYSTEM DEVELOPED AT THE UNIVERSITY OF QUEENSLAND IS OFFERING ACCURATE PREDICTIONS OF CROP YIELD AND FARM PRODUCTION RISKS UP TO 4 MONTHS BEFORE SOWING.

CropVision, an Australian Research Council Linkage project led by Associate Professor Andries Potgieter, links crop models with data from Earth Observation (EO) monitoring of physical, chemical and biological systems and global climate information.

"Existing crop forecasting can be unreliable because it's driven by historic data with limited understanding of the biophysical-climate systems at field, farm or regional levels," Dr Potgieter said.

"CropVision is a science-based, holistic innovation that will enable better decisions and more sustainable practices to meet the many challenges affecting crop production.

"Growing up on a dryland cropping farm in South Africa, I experienced firsthand the impact of droughts and floods, and in those days, farming decisions were mainly reactive and opportunistic.

"One reason for this was that little to no information was available on production risk and projected climate and its impact on the crop potential before sowing.

"CropVision can now provide that additional information at both the temporal and spatial scales and has been validated for different crop management practices and environments across Australia."

At the Queensland Alliance for Agriculture and Food Innovation, CropVision has been used to develop and calibrate a new wheat model predicting yield at the 10-metre pixel scale and the field scale from more than 400 observed fields across Australia with significantly high accuracies at regional, farm and field scales.

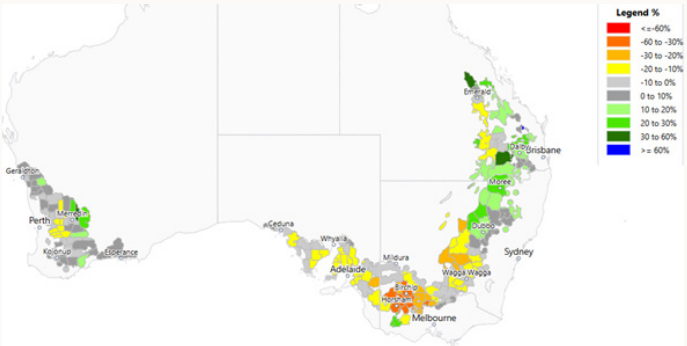
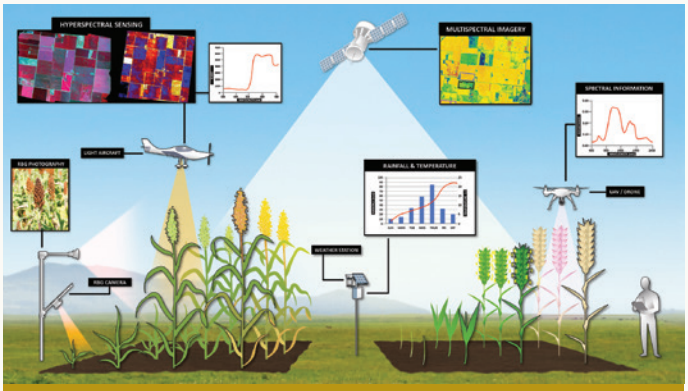


Figure 1: Percentage departure of the simulated forecast shire median yield from the long-term (1902-2024) shire median wheat yield. Areas coloured in yellow to red have negative percent deviations while, green to blue are having positive percent deviations relative to the long-term yield. Grey areas are similar to the long-term median yield for that shire.



Proposed set-up of a multiple digital sensor platform to record information at a detailed crop validation site in recently funded GRDC project (CropPhen). This targets the development of new approaches for the accurate monitoring of crop phenology and discriminating of crop types (copyright QAAFI).

As early as March 2024, CropVision's national wheat outlook was for a close to median yield of 2.30 t/ham, which closely aligns with the current October 2025 yield estimate of 2.25 tonnes per hectare.

Dr Potgieter said outputs generated from CropVision would be invaluable to better inform farmers and industry in making smarter, data-driven decisions well before sowing of their winter and summer crops.

"Having advance knowledge of the impact of the climate on the likely production for the coming season is critical information for farmers but also for companies looking at fertiliser and seed sales and bulk handlers planning the movement of commodities," he said.

"Knowing the likely size of a crop or where the hotspots will be is critical to give them an edge over their competitors in terms of moving resources from one area to another.

"The next step would be to work with the Queensland Government to provide the technologies we've developed in CropVision to industry partners like bulk handlers of grain, insurance companies, financial institutions, and government agencies like ABARES and the ABS."

CropVision was funded by The Australian Research Council (ARC), The Aerospace Information Research Institute under the Chinese Academy of Sciences and the Department of Primary Industries with contributions from ABARES and the Australian Bureau of Statistics.

The Queensland Alliance for Agriculture and Food Innovation is a research institute at The University of Queensland, established with and supported by the Department of Primary Industries.

MORE INFORMATION

View the latest Crop Outlook: https://qaafi.uq.edu.au/industry/crop-outlook

WORLD FIRST BEETLE LURE DEVELOPED FOR ALMOND CROPS

AGRICULTURE VICTORIA RESEARCH SCIENTISTS HAVE DEVELOPED A NEW, PESTICIDE-FREE WAY TO HELP ALMOND GROWERS MANAGE A MAJOR PEST IN THEIR ORCHARDS.

Agriculture Victoria Senior Research Scientist Dr Samantha Edlley said the almond carpophilus beetle (Carpophilus truncatus) is a serious challenge for almond growers, but a world-first lure developed at AgriBio and trialled at the Mildura SmartFarm offers a targeted approach to tackling it.

'The lure mimics natural odours that attract the beetle and draws it into a purpose-built trap, making it easier to detect and manage outbreaks early.

'It uses a precise mix of synthetic pheromones and yeast odours that are highly attractive to the beetle.

'The lure is designed to be very specific to this pest, which means it doesn't attract or affect beneficial insects.'

'It's a new and sustainable tool for growers that could reduce the need for broad chemical sprays.'

'The lure has been extensively trialled in almond orchards across the Sunraysia region, and it has shown impressive results.

'When used as part of a mass trapping strategy – known as attract and kill – it can reduce damage by around 60%,' she said.

> *The almond carpophilus beetle emerged as a serious pest in Australia in 2013 and is now present across all almond-growing regions.*

'It attacks at hull split and can severely damage crops if not detected early, costing the industry millions of dollars in lost value from kernel damage and impacts to crop quality.

'This breakthrough will help reduce pest-related losses, improving the long-term quality and profitability of Australia almond production'.

'Almond growers across the country are trialling the trap as a monitoring device, which will help them be more informed about the pests in their orchards,' Dr Edley said.

The lure is now being prepared for commercial release through Agriculture Victoria Services, with the potential to support more productive and sustainable almond production across the country.

The release will be staged, with the lure becoming available for monitoring in late 2026, with expectations for late 2027 as an attract and kill tool, pending further trials and approval from the Australian Pesticides and Veterinary Medicines Authority (APVMA). This research is part of the Almond Integrated Pest Management project, delivered in partnership with Agriculture Victoria, Hort Innovation, the Almond Board of Australia and Agriculture Victoria Services.

MORE INFORMATION

To learn more about the research, visit: almondboard.org.au/topic/integrated-pest-management .

COMBING THROUGH GENETICS DELIVERS TOOLS TO KEEP BEES BUSY

AUSTRALIAN RESEARCHERS ARE DELVING INTO THE SECRET LIFE OF BEES IN A QUEST TO BREED MORE RESILIENT, PRODUCTIVE AND HAPPY HONEY-MAKERS.

The nation's first comprehensive honey bee genetic improvement program, Plan Bee, has delivered genetic tools to secure the future of beekeepers. With pollination supporting more than $12 billion in agricultural production in Australia annually, it's also a sweet development for over 60 Australian pollination-reliant crops, such as almonds, canola and zucchini.

Funded by the Australian Government's Rural R&D for Profit Program, Plan Bee supports the honey bee and pollination industry, one of AgriFutures Australia's levied industries.

The initiative was led by researchers at NSW Department of Primary Industries and Regional Development (DPIRD), the University of Sydney and the University of New England's Animal Genetics and Breeding Unit (AGBU), with input from the bee industry and seed producers. It has now delivered:

- a national honey bee genetic database
- a breeding manual for beekeepers
- the country's first bee estimated breeding values (EBVs) for key honey bee traits like colony strength, aggression and disease resistance.

These tools put Australia's bee industry in a stronger position to breed bees which can adapt to emerging challenges, including resilience to environmental threats such as drought and bushfires, and diseases such as Varroa mite.

One of Plan Bee's lead researchers Elizabeth Frost – Technical Specialist, Bees, with NSW DPIRD – said the nation's bee industry turned to much larger animals for genetic solutions.

"Estimated breeding values are used by livestock production sectors – such as sheep, pigs, dairy and beef cattle – to identify important traits which can be selected for in breeding programs to accelerate genetic improvement," Mrs. Frost said.

"In the same way that Australian livestock producers use EBVs to select for profitable traits such as fertility, docility and productivity, bee breeders wanted to produce stronger, healthier and more productive queens."

During the five-year project, Plan Bee developed a national reference population with 50 breeder queens and 200 production colonies which had genetic links to commercial queen breeders across six states. These bees were used to develop and validate methods for genetic testing, to establish a robust genetic evaluation system.

"When we surveyed queen bee breeders and honey producers nationally, they told us the key traits they wanted to select for were honey production, temperament, colony strength, pollination and disease resistance," Mrs. Frost said.

"By quantifying the genetic merit of queens against these criteria, we can identify the best performing hives and queens which will increase desired production traits of future generations – delivering lasting economic and ecological benefits for the bee, honey, horticulture and broadacre cropping industries."

Genotypes from bee DNA and hive trait assessment records from the national database of honey bee data were analysed and managed by AGBU. Approximately 5,500 colonies are present in this database, with scores allocated for the EBVs for traits such as frames of bees (colony strength), aggression, and resistance to disease.

BREEDING BETTER BEES

Bee reproduction is quite different to other livestock. Queen bees mate with many drones, before selectively fertilising eggs as she lays them to produce either female worker bees (which are fertilised) or male drones (unfertilised).

Traditionally, bee breeding in Australia has involved mass selection, but with the tools developed through Plan Bee, breeders can implement more modern breeding techniques to select the best queens who will pass on their preferred characteristics.

"Bee breeders now have the tools to transition from classic mass selection to more controlled mating, for more efficient and accurate genetic improvement," Mrs. Frost said.

"Bee breeders routinely produce thousands of queen bees for sale to other beekeepers, so genetically improved queens can give the entire beekeeping industry an edge."

As a result, beekeepers benefit from more viable and resilient colonies, honey producers have more productive hives, and the farmers who rely on hives to pollinate crops have security of service.

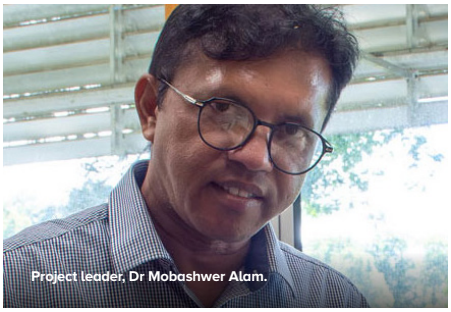
DISEASE MANAGEMENT

Plan Bee began in 2020, before Varroa mite was first discovered in Australia, but the research has provided important insights which support breeding for pest and disease resistance in bees.

"We are ultimately striving for healthy, happy bees. This project has reinforced the importance of selective breeding for pest and disease traits, paired with unique hive and queen identifiers and standardised record keeping," Mrs. Frost said.

"Australian bee breeders have a diverse starting population which is the ideal starting point from which to select for traits which help the bees help themselves against Varroa."

Bee breeders can access training on how to use the manual, set breeding objectives and select using EBVs. For more information visit **agrifutures.com.au/plan-bee**



Project leader, Dr Mobashwer Alam.

Macadamia at Maroochy Research Station. Image: Megan Pope, UQ.

BREEDING BETTER MACADAMIA TREES FOR AUSTRALIAN GROWERS

THIS NEW PROJECT IS SET TO DELIVER BETTER MACADAMIA TREES FOR AUSTRALIAN GROWERS.

The aim of the project, funded by Hort Innovation, is to create trees that can withstand climate change, produce bigger and better-quality nuts earlier, and reduce the production cost burden for growers.

The initiative, being delivered by the Queensland Alliance for Agriculture and Food Innovation (QAAFI), is focused on breeding trees specifically for Australian conditions - using cutting-edge technology to fast-track the process that traditionally can take more than 20 years, opening up opportunities for higher production rates and hopefully increased exports.

Brett Fifield, CEO at Hort Innovation, explained the tangible impact of this project for Australian macadamia growers:

“Macadamias are a native Australian nut and a high-value export commodity. "This investment is about creating even better adapted trees for the different macadamia growing regions across Australia.

"We hope that by using new technologies we can develop new macadamia varieties that will give growers better yields and a more quality nut that delivers results and profits sooner, with trees that are more productive, resilient and tailored to our unique growing environments.

“In FY24, we saw more than 15,000 tonnes of macadamias leave our shores, and we hope to see this continue to grow, but know that this project will be crucial to providing growers with the tools to get there and compete consistently and globally.”

The project will integrate new technologies such as genetic markers and genomic selection models, phenomics and artificial intelligence (AI), to help identify new species that will lead to increased yield, pest and disease tolerance, and resilience to environmental change.

These improvements are vital as growers face rising input costs, reduced pollination services due to varroa mite, and limited land availability.

Research lead Dr Mobashwer Alam said the project’s main goal is to develop varieties that will meet industry needs, so engagement with growers is key.

“We see this project as a partnership with growers, and value that interaction with growers on our trials in the field," Dr Alam said.

"We want to combine our research expertise with practical knowledge from industry to improve the program.

"Our vision is to deliver high-performing, climate-resilient trees that bear fruit earlier, produce better-quality and optimally sized nuts, and reduce production costs.

"By cutting the variety release timeframe from 24 years to just 10 – along with new varieties every three to five years – we’re ensuring Australian growers stay ahead with sustainable, profitable and world-leading orchards ready for the future.”

The National Macadamia Breeding and Evaluation program is funded by Hort Innovation using the macadamia research and development levy, with matching contributions from the Australian Government and support from the Queensland Department of Primary Industries.

STAYING A STEP AHEAD OF TR4

THE AUSTRALIAN BANANA GROWERS' COUNCIL (ABGC)'S SURVEILLANCE STRATEGY IS A PROACTIVE APPROACH TO MONITORING AND MANAGING PANAMA TROPICAL RACE 4 (TR4) ACROSS COMMERCIAL BANANA FARMS.

It's one of the key achievements of the Grower Support (Biosecurity) program being implemented by the ABGC under the framework of a Memorandum of Understanding (MoU) with Plant Health Australia (PHA).

The strategy aims to detect the disease early, track its spread and ensure growers have the tools to mitigate risk. It forms part of the broader TR4 Disease Management Plan, which works to protect the entire banana industry.

SUPPORTING EARLY DETECTION AND CONFIDENCE

The surveillance program aims to provide early detection of the disease and offer growers confidence about the presence or absence of TR4 on their property. This is particularly important, given TR4's potential to cause major losses, especially where biosecurity practices are weaker. As such, the ABGC's surveillance efforts are integral in helping banana growers feel confident in its management.

SURVEILLANCE IN PRACTICE

Surveillance is carried out by trained ABGC Field Officers (FOs) who are authorised to identify symptoms of TR4.

FOs walk through banana farms and visually inspect plants for signs of the disease, covering approximately 80% of a farm's plants. This helps ensure that any disease symptoms are detected early before they spread to neighbouring farms or larger regions. If a banana farm is not fully developed, surveillance will focus on the perimeter of the farm, providing a comprehensive check for the disease.

IMPLEMENTATION

The key components of the ABGC surveillance strategy and prioritisation sequence are:

- ABGC surveillance focuses on high-risk properties in the Tully Valley (excluding properties where the disease is already confirmed to be present), as well as areas in the Innisfail region, within a 38 km buffer zone around known infested properties
- other banana farms in the greater Innisfail area and in other growing regions such as the Tablelands, Mareeba and Lakeland are targeted after the buffer zone or where time is available (for example, when weather doesn't permit activities in the buffer zone)
- growers on properties with TR4 are expected to undertake their own surveillance and must report suspect plants to Biosecurity Queensland, as required under Section 42 of the Biosecurity Act 2014
- an additional surveillance visit to banana properties impacted by a Tully River flood event will occur within the first 12 months, with visits about every 6-months after their previous inspection
- this on-ground surveillance method allows the ABGC to monitor large areas effectively, ensuring that potential outbreaks are identified and addressed before they can spread uncontrollably.

BUFFER ZONES AND RISK MANAGEMENT

A buffer zone has been established around known infested areas in Tully to help prioritise surveillance. This zone acts as a protective buffer to monitor the risk of TR4 spreading. Factors such as water flow, machinery movement and human activity were considered when defining the size of this zone.

ABGC has designed this surveillance strategy based on scientific principles, using data from past experience and modelling techniques to assess the risk of disease spread. This approach allows the team to concentrate resources where they are most needed, ensuring that surveillance efforts are both efficient and effective.

SAMPLING AND DIAGNOSTICS

If symptoms of TR4 are observed, plants are further examined by FOs, following established standard operating procedures. If internal examination reveals symptoms consistent with the disease, then a sample will be sent to the Queensland Department of Primary Industries (DPI) Plant Biosecurity Laboratory for diagnostic testing, in line with established protocols. Molecular diagnostic tests and vegetative compatibility group testing are used to confirm whether the disease is present.

A RISK-BASED APPROACH TO SURVEILLANCE

ABGC has adopted a risk-based surveillance approach, which considers proximity to known infected areas along with factors such as soil movement, water flow, vectors, and environmental conditions that increase the likelihood of Panama TR4 spreading.

The strategy uses science-based methods to focus on areas most at risk of disease spread. This approach allows ABGC to ensure surveillance is more precise, reducing the impact on farms less likely to be infected.

Surveillance for TR4 is essential for the long-term sustainability of the banana industry. Through early detection and systematic monitoring, the ABGC's strategy aims to protect both individual farms and the wider banana-growing community.

Ultimately, the science behind surveillance is about creating a balance – helping to protect farmers' livelihoods while keeping the banana industry sustainable for future generations.

Grower Support (Biosecurity) – formerly known as the TR4 Containment Program – is funded by the Queensland Government and the banana industry, through the Australian Banana Growers' Council (ABGC), using biosecurity levy funds. ABGC is the peak industry body for the banana industry.

MORE INFORMATION

Visit: .planthealthaustralia.com.au

BASF AGRICULTURAL SOLUTIONS AUSTRALIA STRENGTHENS LEADERSHIP TEAM

BASF AUSTRALIA HAS STRENGTHENED ITS AGRICULTURAL SOLUTIONS LEADERSHIP TEAM WITH THE APPOINTMENTS OF ROGER STATES AS HEAD OF MARKETING AND CHRIS STAFF AS HEAD OF SALES.

- **BASF appoints Roger States (above left) as Head of Marketing and Chris Staff (above right) as Head of Sales**
- **Appointments support BASF's commitment to innovation, customer partnerships and sustainable solutions for Australian agriculture**

Roger States steps into the marketing role from within BASF, most recently supporting the Agricultural Solutions business as the Crop Systems and Innovation Lead. With more than 27 years' experience in agriculture, he began his career as an agronomist before holding senior positions with GRDC and Nufarm before joining BASF in 2021. Originally from Western Australia, Roger spent much of his careerworking directly with growers, providing a strong foundation for his leadership in marketing and portfolio management.

"I'm excited to step into this role and continue building strong connections with our customers," Roger said. "Having started my career in the field, I know how important it is to keep growers' needs front of mind in everything we do at BASF."

Chris Staff joins BASF as Head of Sales with nearly 30 years' experience, including 16 years in agriculture. He has held senior leadership roles at Bayer in both Australia and Singapore, driving transformations across sales, marketing, digital farming and commercial strategy in the APAC region.

"I'm thrilled to join the BASF team and lead our sales organisation," Chris said. "This is an exciting opportunity to work closely with our customers and partners to deliver real value and long-term success across the sector."

Parvana Wali, Head of Agricultural Solutions for BASF Australia and New Zealand, said the appointments come at a pivotal time for the business.

"Roger and Chris bring a wealth of experience and a deep understanding of grower needs," Parvana said. "Their combined expertise will help us drive innovation, strengthen customer partnerships and deliver sustainable solutions for Australian agriculture, enhancing our flexibility to respond to customer needs."

These appointments reinforce BASF's commitment to innovation and customer-focused solutions as the company continues to support the growth and resilience of Australia's agricultural industry.

ABOUT BASF'S AGRICULTURAL SOLUTIONS DIVISION

Everything we do, we do for the love of farming. Farming is fundamental to provide enough healthy and affordable food for a rapidly growing population, while reducing environmental impacts. That's why we are working with partners and experts to integrate sustainability criteria into all business decisions. With €919 million in 2024, we invest in a strong R&D pipeline, combining innovative thinking with practical action in the field. Our solutions are purpose-designed for different crop systems. Connecting seeds and traits, crop protection products, digital tools and sustainability approaches, to help deliver the best possible outcomes for farmers, growers and our other stakeholders along the value chain. With teams in the lab, field, office and in production, we do everything in our power to build a sustainable future for agriculture. In 2024, our division generated sales of €9.8 billion. For more information, please visit www.agriculture.basf.com or our social media channels.

ABOUT BASF IN AUSTRALIA AND NEW ZEALAND

BASF serves key industries in the agriculture, coatings, manufacturing and mining sectors, and posted sales of about €434 million in Australia and New Zealand in 2024. As of the end of 2024, the company had 363 employees and operated 6 production sites across Agricultural Solutions, performance products and functional materials and solutions. BASF has been active in Australia for over 100 years, and over 60 years in New Zealand. Further information is available on www.basf.com/au.

SMART FARMING TAKES ROOT: NEW TOOL TO OPTIMISE AVOCADO ORCHARD PERFORMANCE

MORE CONSISTENT YIELDS AND IMPROVED FRUIT DEVELOPMENT ARE AMONG THE BENEFITS ON THE HORIZON FOR AVOCADO GROWERS ACROSS AUSTRALIA, THANKS TO A NEW RESEARCH INITIATIVE FUNDED BY HORT INNOVATION.

Delivered in partnership with the CSIRO, Australia's national science agency, the project is developing a non-contact tree carbohydrate measurement method that is deployable at scale and will explore how carbohydrate dynamics influence avocado production. The insights are expected to support better informed orchard management decisions, leading to more profitable and sustainable returns for growers.

Building on earlier research (AV19006), which demonstrated, in lab-based settings, the potential of a non-invasive light-based imaging tool (near-infrared spectroscopy) to estimate carbohydrate levels in avocado leaves and stems, this next phase will take the technology into the field. The aim is to develop a commercial-scale tool for orchard-wide carbohydrate monitoring, utilising AI and unmanned aerial vehicles (UAVs).

Brett Fifield, CEO at Hort Innovation, explained what this means for the industry: "Understanding how carbohydrate levels fluctuate in avocado trees is key to improving fruit set and yield reliability. However, growers currently lack access to the tools to monitor these dynamics. Through developing a commercial-scale solution, this project intends to fill that gap, supporting smarter orchard decisions, reduced yield variability and an increase in returns for growers."

With the avocado industry continuing to expand, this research lays the groundwork for future innovation in orchard management.

Project leader Everard Edwards from CSIRO explained: "Carbohydrates influence both crop loads and vegetative growth in avocado production. By pairing cutting-edge imaging technology with AI, we can explore how carbohydrate levels impact key stages of avocado production. These deeper insights into the physiological drivers of avocado production will help growers to fine-tune orchard management practices and respond to seasonal challenges."

The project is set to conclude in September 2027 and if successful, will proceed with testing the technology across regional Australia to ensure the method is applicable to all avocado growing regions. This would support the eventual commercialisation of the tool - bringing smart farming innovation to orchards nationwide.

This project is funded by Hort Innovation, using the avocado research and development levy and contributions from the Australian Government.

MORE INFORMATION

Visit: horticulture.com.au

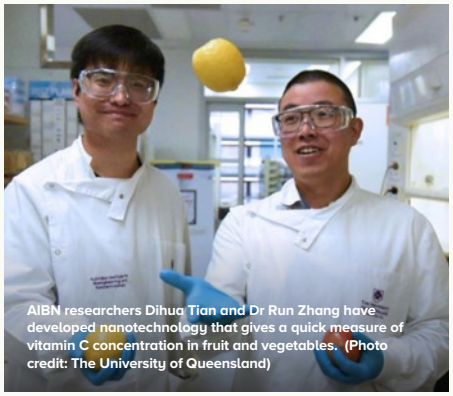
NANOTECH ALLOWS FRUIT AND VEG TO BE SCANNED FOR VITAMIN C

CONSUMERS COULD SOON BE USING THEIR PHONES TO SCAN FRUIT AND VEGETABLES FOR FRESHNESS AND NUTRITION WITH THE AID OF NANOTECHNOLOGY THAT MEASURES VITAMIN C CONCENTRATION.

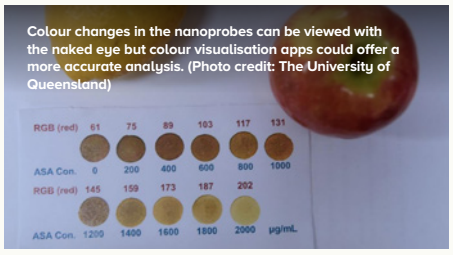
The nanoprobes can be applied to paper testing strips and touched to whole or cut fruit. (Photo credit: The University of Queensland)

KEY POINTS

- Researchers have designed particle-sized probes that change colour to indicate vitamin C concentration in fruit, vegetables, and juices
- The tiny probes can be added to juice samples or applied to paper testing strips that change when touched to whole or cut produce
- Researchers say the colour changes can be viewed with the naked eye but could one day be analysed with a colour visualisation app for a more accurate nutrition reading



AIBN researchers Dihua Tian and Dr Run Zhang have developed nanotechnology that gives a quick measure of vitamin C concentration in fruit and vegetables. (Photo credit: The University of Queensland)



Colour changes in the nanoprobes can be viewed with the naked eye but colour visualisation apps could offer a more accurate analysis. (Photo credit: The University of Queensland)

Vitamin C – also known as ascorbic acid – is a critical antioxidant in most fruits and vegetables. (Photo credit: Vera Kuttelvaserova/Adobe Stock)

University of Queensland researchers have developed a nanoprobe that changes colour to indicate how much vitamin C is in fresh produce and juice.

Dr Run Zhang from UQ's Australian Institute for Bioengineering and Nanotechnology (AIBN) said the technology could be added directly to food and juice samples or applied to paper testing strips that, when touched to cut or intact produce, changed colour to indicate the concentration of vitamin C.

Vitamin C – also known as ascorbic acid – is a critical antioxidant in most fruits and vegetables and can vary significantly depending on the length of journey from the farm to fridge.

"Things like exposure to heat, oxygen, and light all accelerate vitamin C degradation, as does the quality of the soil or pesticide use during the growing process," Dr Zhang said. "Measuring vitamin C is therefore an essential step for producers, regulatory agencies, and consumers who want to simply evaluate food freshness and nutritional content."

The particle-sized probes designed by Dr Zhang's team consist of a metallic core coated with a fluorescent dye.

The coating is designed to break away in the presence of ascorbic acid and the remaining materials change colour to match the strength of vitamin C in a sample of food or juice.

PhD scholar Dihua Tian said the probes coloured yellow to brown when exposed to different fruits, vegetables, and juices, providing a rudimentary indication of freshness and nutrition.

The nanoprobes can be applied to paper testing strips and touched to whole or cut fruit. The simplicity and portability of the technology means a more accurate reading could be possible using a smartphone app.

"We see great potential for more user-friendly analysis," Dihua said. "Ultimately this is technology that could be used in tandem with colour visualiser phone applications that can scan a testing strip coated in our nanoprobes and tell you exactly how fresh and healthy the food is."

Dr Zhang said the nanoprobes also had potential applications in agriculture. By testing plant leaves for vitamin C content, he said producers could gain insights into plant nutrition, stress responses, and optimal agricultural practices. "Ultimately we would be supporting environmental sustainability optimising nutrient management in crops," Dr Zhang said.

COLLABORATION AND ACKNOWLEDGEMENTS

The research was completed in collaboration with researchers from UQ's School of Chemistry and Molecular Biosciences (SCMB) and the Queensland Alliance for Agriculture and Food Innovation (QAAFI).

MORE INFORMATION

Visit: news.uq.edu.au

QUEENSLAND'S AGFORCE WELCOMES NIKI FORD AS CHIEF EXECUTIVE OFFICER.

QUEENSLAND'S PEAK REPRESENTATIVE BODY FOR RURAL PRODUCERS AGFORCE HAS ANNOUNCED NIKI FORD AS ITS NEW CHIEF EXECUTIVE OFFICER.

Niki Ford replaces Mike Guerin who stepped down as CEO after eight years in the role.

An experienced growth oriented CEO and board adviser, Niki Ford has held roles as Chair of the Australian Food Network, Board Director of Ag Institute Australia and as CEO of Australian Organic Limited, where she gained experience in leading change, building strong teams and connecting deeply with members. She's also worked as an Agriculture Consultative Industry Representative to the A-CCC.

"Those skills will be invaluable as we modernise AgForce, strengthen its voice and ensure every member feels represented," Ms Ford said.

Growing up on the Darling Downs, Ms Ford's first job was as a chef before going on to a range of experiences in commercial food production and manufacturing. She says these formative experiences have forged her passion and appreciation for food and agriculture, and she looks forward to exploring this further as a leader with AgForce.

She's thrilled to lead AgForce into this exciting new phase of the organisation.

"I've always admired how AgForce stands with producers and advocates on their behalf," Ms Ford said.

"Leading an organisation with a proud 25 year legacy, and helping shape it's next chapter of growth is a deeply exciting opportunity.

"This is a pivotal moment. AgForce has a strong plan, a bold advocacy agenda and new initiatives like AgCarE and AgForce Training that position us to deliver real and lasting value to members."

In her first 100 days as CEO Ms Ford says her first priority "is to listen - to members, to the team and to partners across Queensland."

"At the same time, I'll be focused on strengthening financial resilience and ensuring AgForce is delivering visible value," she said.

"In five years I see AgForce as a respected leader in agricultural advocacy, financially strong and member driven. My role is to help make AgForce modern, agile and influential, while always staying true to its members.

"The big opportunity is showing how agriculture drives sustainability, food security and regional prosperity. AgForce can lead in shaping policy, expanding training and telling the positive story of our producers to Australia and the world."

Photo credit AgForce

Ms Ford is looking forward to starting in the role on September 29 and she looks forward to meeting staff, members and the broader AgForce community from then.

"It's a privilege to serve Queensland producers," she said. "My commitment is to listen, to lead with integrity and to work tirelessly to ensure AgForce remains the leading voice for our members and communities."

Shane McCarthy, General President of AgForce said confirmation of Niki Ford as the new AgForce CEO completes the smooth transition process that Mike Guerin had envisioned when he announced he would leave the role earlier this year.

"We are looking forward to the new CEO coming on board and exciting times ahead with the change in leadership," Mr McCarthy said.

"Niki brings a wealth of knowledge from previous roles that will be advantageous to AgForce going forward.

"We had a lot of nominations for the role and a lot of outstanding nominations but Niki rose to the top."

He also paid tribute to Michael Guerin's contribution and leadership as CEO for the past eight years, and ensuring a smooth handover.

"He's had a substantial impact on the organisation and industry during this time," he said.

"He has been our longest serving CEO and leaves the organisation in strong shape and with our collective best wishes."

BREWING AN AUSTRALIAN FUTURE: THE RISE OF LOCALLY GROWN COFFEE

AUSTRALIANS ARE RENOWNED FOR THEIR LOVE OF COFFEE. FROM THE BUSTLING LANEWAYS OF MELBOURNE TO BEACHSIDE CAFÉS IN BYRON BAY, THE DAILY RITUAL OF THE FLAT WHITE OR LONG BLACK HAS BECOME WOVEN INTO NATIONAL CULTURE. COLLECTIVELY, AUSTRALIANS CONSUME AROUND SIX BILLION CUPS OF COFFEE EACH YEAR. YET, DESPITE THIS OBSESSION, 99% OF THE COFFEE WE DRINK IS IMPORTED FROM OVERSEAS PRODUCERS IN BRAZIL, COLOMBIA, ETHIOPIA AND BEYOND.

Australian-grown coffee is a rarity—even in Melbourne, often called the nation's coffee capital. But a growing band of producers, scientists and roasters are determined to change that.

FROM FRUIT TO CUP

For many coffee lovers, the journey from fruit to cup remains little understood.

"About 90- 95% of consumers don't know that your cup of coffee starts with a fruit that grows on a tree," explains Simon Gautherin, Coffee Excellence Manager at Zest Specialty Coffee Roasters.

A certified Q Grader—the highest qualification in sensory coffee evaluation—Gautherin likens his role to that of a master sommelier in wine.

"There's a universal standard for cupping coffee. Whether in Melbourne or Brazil, we assess the same attributes: aroma, acidity, sweetness, body and aftertaste. It's a way of giving coffee a value."

When it comes to Australian beans, the reactions he sees are mixed.

"People are excited to hear that Australian coffee is available. But often they think 'Australian coffee' just means roasted here, not actually grown here."

A PIONEER'S JOURNEY

Commercial coffee growing in Australia is still young. The first commercial plantation was established in the late 1970s near Mareeba, QLD by Nat and Linda Jaques, who migrated from Africa.

"The hardest part in the early days was convincing anyone that Australian coffee was good coffee," Nat recalls.

"Most people were drinking instant coffee back then, so consumers were still on the learning curve."

The Jaques family faced hardships, with high interest rates forcing them into liquidation. At one point, Nat built his own coffee roaster out of a cement mixer to keep the business alive.

"We've had to restart our business several times, but we always believed the industry was viable," he says.

Today, their plantation on the Atherton Tablelands benefits from high rainfall, sandy soils and altitude—ideal conditions for Arabica coffee. Their unique pruning system, cutting trees back to the stump every six years, has since been adopted more widely and included in the Australian Coffee Growers Manual, a comprehensive resource funded by AgriFutures Australia.

SCIENCE MEETS COFFEE

Further south in northern New South Wales, research is helping to overcome longstanding barriers to expansion. Professor Tobias Kretzschmar from Southern Cross University has been working with World Coffee Research to trial new varietals better suited to Australian conditions.

"One of the biggest issues growers faced was the K7 variety," he explains.

"It's high-quality, but it grows too tall. Our farmers machine harvest and when trees outgrow the machines, yields drop and costs rise. What they wanted was a semi-dwarf variety that matched or exceeded K7 in yield and cup quality, while also offering basic disease resistance."

The trials, funded by AgriFutures Australia and supported by the Australian Grown Coffee Association, began in 2020 with sites in Queensland and New South

Wales. The results have been promising: three new open-access varietals that outperform K7 in both productivity and taste.

"They beat K7 on all fronts—yield, disease resistance and cupping scores," says Kretzschmar.

"And because they're open access, farmers don't have to pay royalties. It's a win on every level, and it makes entering the industry much more attractive."

MOMENTUM BUILDS

For Rebecca Zentveld, a grower-roaster near Byron Bay and President of the Australian Grown Coffee Association, this progress marks a turning point.

"It's the most exciting time we've had since the early 1990s," she says.

"Potential landowners are ringing us wanting to plant these new varieties. The demand for quality beans—locally and globally—is only increasing."

Currently, Australian production is tiny —less than 300 tonnes annually. That leaves enormous room for growth.

"There are so few of us," Zentveld says.

> *"There's potential not just to meet domestic demand but to create a premium export market for Australian coffee."*

Interest is now spreading beyond the east coast. Early plantings are underway in Western Australia, and if successful, could extend coffee's geographic footprint.

A PLACE ON THE WORLD STAGE

Back in Melbourne, Gautherin has become an unlikely ambassador for Australian coffee, working with growers to refine processing and elevate quality.

"Ten years ago, everyone thought it was impossible for Australia to grow great coffee," he says.

"Even three or four years ago, we didn't have proof. But in 2021, we cupped an Australian coffee that scored 84 points—that's specialty grade. Today, some are going even higher."

THE SIGNIFICANCE ISN'T LOST ON HIM.

"Australia grows some of the best fruits and wines in the world. Now we can add coffee to that list. The message is clear: not only can Australian producers grow outstanding coffee, but Australia can also be a real player on the global specialty scene."

BREWING THE FUTURE

From pioneers who refused to give up, to researchers unlocking new varietals, to passionate roasters championing local beans, the story of Australian coffee is one of resilience and renewal.

Challenges remain—chief among them the cost of suitable land—but optimism is strong. With new varieties on the horizon and growing consumer curiosity, the once-far-fetched idea of sipping Australian coffee may soon become everyday reality.

As Zentveld notes, "So many Australian consumers still haven't tasted Australian coffee. We've got a lot of cups to fill—but the future has never looked brighter."

MORE INFORMATION

Visit: agrifutures.com.au

USP Masters student Unaisi Tikoemoturiki, UQ's Dr Oladipupo Adiamo and USP's Dr Rupa Raju at UQ.


Breadfruit genotype samples brought to UQ by USP representatives

HEALTH GOALS BRING PACIFIC BREADFRUIT TO UQ

A CLIMATE RESILIENT CROP THAT COULD IMPROVE HEALTH IN THE PACIFIC IS THE FOCUS OF A COLLABORATION BETWEEN SCIENTISTS AT THE UNIVERSITY OF QUEENSLAND AND THE UNIVERSITY OF THE SOUTH PACIFIC (USP).

Two researchers from USP have brought 5 varieties of breadfruit to UQ's Queensland Alliance for Agriculture and Food Innovation to learn more about the traditional staple food.

USP Research Fellow Dr Rupantri Raju said breadfruit was extremely important in the region.

"It's a starchy native crop widely eaten in rural communities either boiled or roasted, and its nutritional properties and climate resilience mean it has a great deal of potential," Dr Raju said.

"But in Fiji there's a growing dependence on imported commodities and a limited availability of native foods alongside a rise in health problems such as diabetes and heart disease.

"Breadfruit can be used in both savoury and sweet foods and could address some of these problems.

"We've come to QAAFI's Centre for Nutrition and Food Sciences because we want to know more about the starch composition of breadfruit and how it can contribute to good health as a replacement for other starchy foods.

"We also suspect there is some nutritional value in the skin, which is rarely consumed, and the seeds, which are seen as a delicacy.

"Breadfruit could also be used as an ingredient in new food products."

UQ Early Career Research Fellow Dr Oladipupo Adiamo said it was rewarding to use the QAAFI team's expertise on such an important staple.

"Our team has already worked extensively with a number of bushfoods native to Australia, and we can use this expertise for the breadfruit project," Dr Adiamo said.

"We want to determine which of the 5 genotypes is best in terms of nutrients, and how traditional methods of processing it affect the nutrients."

He said the collaboration could be the start of a wider relationship between the 2 universities.

"There are so many crops in Fiji that need more research and that's why collaborating with UQ is a good way of moving things forward," Dr Adiamo said.

"A lot of work is being done on kava and other varieties of root crop that are endemic to different parts of the Pacific but there is a lot of scope for further research," Dr Raju said.

"We also hope to generate a food database for the nutritional composition of native foods to inform and design further research."

The project is funded by the Rockefeller Foundation through the American Heart Association (AHA) under the Periodic Table of Food Initiative (PTFI), hosted through the USP Centre of Sustainable Futures, Institute of Applied Sciences

MORE INFORMATION

Visit: **qaafi.uq.edu.au**

The Queensland Alliance for Agriculture and Food Innovation is a research institute at The University of Queensland established with and supported by the Department of Primary Industries.

THE SINGLE ANSWER FOR ALL DOWNY MILDEW QUESTIONS

WITH PREDICTIONS OF A WETTER THAN NORMAL END TO THE YEAR, DOWNY MILDEW IS ONE DISEASE VINEYARD MANAGERS WILL BE KEEPING A CLOSE WATCH OUT FOR.

Downy mildew can devastate your crop very quickly. KEYBRI® Ultra fungicide is a robust product that provides fast, effective and long-lasting control without having to worry about mixing partners, adjuvants, residues, rainfall or re-entry issues.

Syngenta Viticulture & Fruit Portfolio Lead, Scott Mathew, says in the run up to Christmas, his phone runs hot with many people seeking his advice about how to manage downy mildew in various scenarios. This year, his answer will not rely on specifics of each situation...

"The answer to downy mildew is KEYBRI® Ultra fungicide," said Scott. "If you're hoping to get away with one application for downy, use the best, KEYBRI® Ultra. If you need extended residual control so you can get away for a break, KEYBRI® Ultra will give you up to 21 days. If the forecast is bringing rain, KEYBRI® Ultra has one-hour rainfastness. Managing downy mildew has now become a very simple answer."

With registration at the start of the season, supply is en route to Australia and will reach retail shelves soon.

KEYBRI® ULTRA FUNGICIDE HIGHLIGHTS

- A complete formulation, with two specialised actives, delivering class leading, cost effective protection against downy mildew.
- KEYBRI® Ultra incorporates two modes of action, targeting the disease at multiple life stages and strengthening resistance management.
- Translaminar activity and exceptional rainfastness ensures effective control, even during wet periods.
- Extended residual protection up to 21 days, offering confidence when vineyard access or spray timing is compromised.

MORE INFORMATION

Want to know more about our KEYBRI® Ultra? Speak with your local Syngenta representative for more information and to check on product availability for this season. Visit: **www.syngenta.com.au**

QUEENSLAND FARMER HAMISH MCINTYRE ELECTED NEW NFF PRESIDENT

QUEENSLAND FARMER HAMISH MCINTYRE HAS BEEN ELECTED AS THE PRESIDENT OF THE NATIONAL FARMERS' FEDERATION (NFF).

Elected by NFF Members as the organisation's 15th President, Mr McIntyre takes the reins from outgoing President and Victorian farmer David 'DJ' Jochinke.

Mr McIntyre runs a family owned, irrigated and dryland farming, cattle breeding, beef feedlot and broiler chicken meat business in the St George, Dirranbandi, Quilpie and Beaudesert districts in Queensland. Mr McIntyre was elected as an NFF Director in October 2023 and his broad involvement in agriculture includes serving as Cotton Australia Chair and as a Director on the Australian Wagyu Association and Agsafe Boards.

"I am honoured to be elected as the NFF President. I look forward to working with our members to advance Australian agriculture. My priority will be making sure farmers are front and centre in policy discussions in Canberra," Mr McIntyre said.

Mr McIntyre paid tribute to outgoing President Mr Jochinke, who has served the maximum 12-year term on the NFF board, the past two as President following six years as Vice President. He was the first Victorian Farmers' Federation organisation President to also serve as NFF President.

"DJ leaves a legacy of strong farm advocacy. He stood up for what was right and had access to leaders and decision makers at the highest level. Under his leadership, the NFF has delivered significant wins for farmers, including scrapping two taxes – the Biosecurity Protection Levy and the Super Tax.

"But at the heart of what DJ strived to achieve was putting people first. Under

his leadership, farmer mental health, wellbeing and safety became key priorities for the NFF. This focus led to the creation of a national mental health coalition supported by more than 50 organisations across agriculture, health and rural sectors."

BRIGHT OUTLOOK FOR AUSTRALIAN TABLE GRAPES

AUSTRALIA HAS ACHIEVED ITS SECOND-BEST TABLE GRAPE SEASON ON RECORD, ACCORDING TO A NEW RESEARCH REPORT BY AGRIBUSINESS BANKING SPECIALIST RABOBANK

In the report, Table grape update 2025, the bank's RaboResearch division found Australia produced over 230,000 metric tonnes of the fruit in 2024/25 – a 20 per cent increase from the 2023/24 season.

RaboResearch analyst Pia Piggott said the jump in production was thanks to higher yields and younger vineyards reaching full maturity.

Ms Piggott said Australian domestic consumption of table grapes (grapes grown for fresh consumption) rose by 11 per cent in the latest season, while exports reached a five-year high of 148,300 metric tonnes.

"Exports of Australian table grapes to China grew by 36 per cent, to 53,000 metric tonnes – although this remains nine per cent below the averages of the late 2010s," she said.

Other markets for Australian table grapes, including South Korea, the Philippines and New Zealand, showed stronger growth than Japan, Vietnam and Thailand, Ms Piggott said.

Looking ahead, she said, there is optimism for the 2025/26 season as new planting areas enter full production and a neutral El Nino outlook supports stable yields.

"And lower shipping costs, a favourable market window in China and strong demand across Asia could lead to improved returns for Australian growers," Ms Piggott said.

GLOBAL TRADE

The Rabobank report found a significant shift within the global table grape industry, with Peru overtaking Chile to become the world's leading exporter, while China is rapidly positioning itself as a formidable contender.

Report lead author, RaboResearch fresh produce senior analyst Gonzalo Salinas said with China's exports projected to exceed 100 million boxes, the global landscape is poised for transformation by the end of the decade. "This development opens up new avenues for market diversification and strategic growth, particularly in Southeast Asia," he said.

RAPID GROWTH

Mr Salinas said Peru's rise to the top of the global table grape export market marks a pivotal moment for the industry. "This achievement is underscored by the robust growth in global exports, which reached an unprecedented 4.6 million metric tonnes in 2024/25. Peru's success reflects the sector's evolving competitiveness and highlights the potential for strategic repositioning among leading exporters," he said.

Meanwhile, Mr Salinas said, China is emerging as a key player, with its exports fuelling both supply and demand across Southeast Asia. "Driven by a rising middle class and shifting consumer preferences, China's influence is reshaping the global table grape market. As China becomes more self-sufficient, it relies less on imports, further solidifying its position in the industry."

US AND MEXICO

Mr Salinas said, in North America, US table grape exports are stabilising, with notable growth in markets such as Mexico.

"This growth is supported by retail expansion and promotional efforts, which have boosted demand. Mexico's table grape industry remains resilient, benefiting from steady demand in both the US and domestic markets," he said. "Despite previous weather disruptions, South American exports have rebounded, reaching a record 1.3 million metric tonnes, setting the stage for continued growth in 2025/26."

EU AND US

The Rabobank report said the European Union and the United States continue to dominate as the largest importers of table grapes, accounting for 43 per cent of global volume.

"Over the past decade, imports in these markets have grown steadily at an annual rate of two per cent. In the US, per capita consumption is on the rise, averaging 8.2 pounds per person per year over the past 10 years, with projections to reach a record nine pounds (3.7 kilograms) in 2025/26," it said.

SOUTHEAST ASIA

"As China becomes more self-sufficient," Mr Salinas said, "Southeast Asia is emerging as an attractive alternative for market diversification across the industry.

"The region's growing demand presents untapped opportunities for exporters seeking strategic growth in new destinations," he said.

ABOUT RABOBANK AUS & NZ

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 125 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 more than nine 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 87 branches throughout Australia and New Zealand.

AUSTRALIA'S CHERRY EXPORTS SET TO BLOSSOM UNDER NEW STRATEGIC INITIATIVE

WITH PRODUCTION SET TO INCREASE AND A CONTINUED FOCUS ON QUALITY, AUSTRALIA'S CHERRY INDUSTRY IS POISED TO SCALE EXPORTS OF THE PREMIUM FRUIT.

With targets to export one third of all Australian cherry production by 2030, a new strategic initiative, funded by Hort Innovation, aims to unlock this potential by addressing key export barriers and positioning Australian cherries as the premium choice in high-value global markets.

Through targeted investments in quality assurance, market access improvements, market intelligence, market development, and grower capacity-building, the initiative will position Australian cherries as the premium choice for international consumers.

Brett Fifield, CEO at Hort Innovation, explained why it this is an important opportunity for the industry: "Australian cherries are already recognised globally for their exceptional quality, but we know there's untapped potential. This project is about giving growers the tools, access, and insights they need to scale exports sustainably and profitably."

"By investing in quality standards, market access support, and grower support, we're helping the industry build resilience and strengthen its competitive edge. This is about long-term growth and ensuring Australian cherries continue to shine on the world stage," concluded Fifield.

THE PROJECT WILL FOCUS ON:

- **Quality:** Promoting consistent export-grade fruit across the supply chain.
- **Export capacity:** Empowering growers with training and tools for export success.
- **Market access support:** Advising on commercially viable protocols to best support the Australian cherry industry in maintaining freshness.
- **Market development:** Increasing market share in existing and emerging regions.
- **Market insights:** Delivering intelligence to guide strategic export decisions.

Penny Measham, CEO of Cherry Growers Australia says "Our Australian industry has a strong reputation for delivering premium quality fruit from all production regions, testament to an industry that consistently delivers for consumers. Production of quality fruit is very much front of mind. This project ensures our industry not only maintains this reputation for healthy premium produce, but builds on it through expanded export opportunities."

This work will build on the Cherry Export Strategy delivered through the recently completed Cherry Trade Development Project 2022-2025 (CY21001). The Strategy delivered identified key priorities for the industry across areas including quality assurance, market access, branding, data insights, and structural efficiency.

This project will continue the work laid out in the strategy alongside other key projects such as: developing a national cherry brand, setting export-grade quality standards (CY25002), Cherry Trade Development and Market Access CY24006), researching environmental impacts (CY24005), and supporting protected cropping decisions (CY24004).

This project is funded by Hort Innovation using the cherry research and development levy and contributions from the Australian Government.

MORE INFORMATION

Visit: horticulture.com.au

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