

THE AUSTRALIAN AGRONOMIST

MAGAZINE

SERGOMIL® L60:
COPPER NUTRITION
DESIGNED AROUND
PLANT PHYSIOLOGY

**PREPARING
ALMONDS, MACADAMIAS
AND GINGER
FOR SPRING SUCCESS**

**HIGHLY ANTICIPATED
NEW MULTI-SITE
GRAPE FUNGICIDE
TICKS ALL BOXES**



FRONT FOOT BLACKLEG

NEW



PIONEER®
BRAND • SEEDS

PY433I

Tough new IMI hybrid resists disease and handles harsh conditions.

PY433I earns its place in an already-impressive IMI lineup through strong early growth, staunch blackleg resistance and robust yields under moisture stress. If that sounds right for you, talk to your local Pioneer team for advice on introducing PY433I into your program.



Talk to your agronomist, reseller or
local Pioneer representative.
www.pioneerseeds.com.au/contact-us



PIONEER®
BRAND • SEEDS

CONTENTS



PREPARING ALMONDS, MACADAMIAS AND GINGER FOR SPRING SUCCESS



SERGOMIL® L60: COPPER NUTRITION DESIGNED AROUND PLANT PHYSIOLOGY



HIGHLY ANTICIPATED NEW MULTI-SITE GRAPE FUNGICIDE TICKS ALL BOXES

- | | | |
|--|---|---|
| <p>4 User-friendly drone technology hovers into view for land managers</p> <p>6 Preparing Almonds, Macadamias and Ginger for Spring Success</p> <p>8 Researchers discover genetic secrets of mung bean crops</p> <p>9 The winning choice, proven by growers</p> <p>10 Frost a challenge shaping Australian wheat production</p> <p>11 Former Nufarm CEO, former Namoi Cotton Chairman and AgWorld founder join RLF AgTech Board</p> <p>12 Drought-hardy ryegrass raises new challenge</p> <p>13 Farm focus for second online nutrition course</p> <p>14 Decision time for the future of farming in Australia</p> <p>16 SERGOMIL® L60: copper nutrition designed around plant physiology</p> <p>18 Versys® insecticide now delivers apple dimpling bug control to Australian pome fruit growers</p> <p>20 Engineering a better future for native grains</p> | <p>22 How a unique environment sets Australian chocolate apart</p> <p>24 Highly anticipated new multi-site grape fungicide ticks all boxes</p> <p>26 Promising new approach to controlling insect-spread disease without insecticides</p> <p>28 New digital toolkit to tackle pest management</p> <p>29 SA Grain Legume Project improving pulse agronomy</p> <p>30 Precious drops: SMART SPRAYS lifeline for crop farmers facing declining rainfall</p> <p>32 Key culprit named but no quick fix for almond tree decline</p> <p>33 New extension program to deliver practical, on-farm support for banana growers</p> <p>34 Tomatoes get flavour boost from green bin compost</p> <p>36 How 9000 photos built the foundation for AI-driven crop disease detection</p> <p>37 BASF Agricultural Solutions starts global registration of novel PPO herbicide Replexor™ Active</p> | <p>38 Researchers demonstrate the potential of pangenome-guided breeding for higher yields and adaptability</p> <p>39 Food Agility Congress 2026 Why should you Attend?</p> <p>39 New trials to boost emerging hemp industry</p> <p>40 Is gentle handling the key to better tasting honey?</p> <p>41 Strategic thinking needed for Australian melon industry</p> <p>42 Growers turn to tank mix partner for improved broadleaf weed control</p> <p>44 Murdoch researcher named among world's top agri-food system innovators</p> <p>45 Tickets Now on Sale for the 2026 Australian Melon Conference – Featuring the Return of the National Melon Field Day</p> <p>46 All paths lead to compost!</p> <p>47 New RD&E Plan sets direction for the honey bee and pollination industry</p> |
|--|---|---|

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@regionalreachpublishing.com
 Phone: 0429 301 681

Design & Production

Kate Neal
 Email: kate@regionalreach.com

Administration

Kate Redfearn
 Email: administration@regionalreach.com



USER-FRIENDLY DRONE TECHNOLOGY HOVERS INTO VIEW FOR LAND MANAGERS

LANDHOLDERS ARE CLOSER TO HARNESSING THE BENEFITS OF AI AND MACHINE LEARNING TECHNOLOGIES TO HELP THEM MANAGE AUSTRALIA'S LARGE, DIVERSE, AND SOMETIMES CHALLENGING, LANDSCAPES.

Thanks to a partnership with ACEN Australia, the WeedRemeed™ software platform – developed by the Centre for Invasive Species Solutions (CISS) in partnership with 2pi Software – is easier to use than ever before and poised to reduce labour-intensive manual surveys.

WeedRemeed uses advanced colour picking and Artificial Intelligence (AI)/ Machine Learning (ML) technology to analyse drone imagery to identify and locate target native plants and weed species. The initial project was funded through a Department of Climate Change, Energy, the Environment and Water Saving Native Species Program (Threat Innovation grants).

ACEN Australia's generous support through its Social Investment Program has enabled the first of three planned stages of usability improvements. Delivered ahead of schedule, this critical first stage provides the foundation for further work to simplify model training and make the platform even more accessible.

CISS Chief Executive Shauna Chadlowe said ACEN Australia's support was helping to make advanced technology more practical for everyone responsible for caring for land. "Powerful technology can only make a real difference if people can use it easily and affordably," Ms Chadlowe said.

"For renewable energy companies and others managing large and often complex landscapes, better weed intelligence can support biodiversity protection, environmental compliance and transparent reporting, while helping target resources where they will have the greatest impact."

CISS Business and Science Portfolio Manager, Sean Freney, said the new features are a game changer for the platform.

"They break down useability barriers to help land managers use the technology to detect and map their weeds earlier, monitor changes across landscapes and assess the effectiveness of their management actions, ultimately

supporting better environmental outcomes on the ground," Mr Freney said.

"WeedRemeed makes drone-based AI technology accessible in addressing the challenge of detecting and monitoring both priority weeds as well as endangered native species. Now the platform is easier to use, we're confident more landholders will be able to deploy this technology, allowing them to use their on-ground management resources more effectively."

"The new features allow users to simply create colour detection swatches in minutes. This will significantly improve their experience and enable them to get improved results quickly. It's an exciting moment in the development of the WeedRemeed platform and we're thankful to ACEN Australia for their support."

MORE INFORMATION

Product details and quoting tool: WeedRemeed. Visit: <https://invasives.com.au/our-solutions/weedremeed/>

DON'T GROW ALONE.

Seasol. Naturally Brilliant.

Ask your Agronomist about the seasol range of products to suit your farming enterprise.

Growing crops takes hard work, risk, knowledge, and teamwork.

That's why it's important to have the trials, research and development behind a product that naturally works.

So don't grow alone speak to your agronomist today about the benefits of Seasol. Naturally Brilliant.



For more information, please go to
www.hortag.com.au or call your local area
sales manager on **1800 634 204** (Option 2)

PROUDLY BROUGHT
TO YOU BY





PREPARING ALMONDS, MACADAMIAS AND GINGER FOR SPRING SUCCESS

BY: DR FARANAK NOURBAKHS, TECHNICAL MANAGER, YATES HORT & AG

Spring is one of the most important management periods for high-value horticultural crops. It is when root activity, nutrition demand, irrigation performance, soil biology, flowering, fruit or nut set, and climatic pressures begin to converge. For crops such as almonds, macadamias and ginger, successful spring performance is rarely achieved through a single input. It is built around an integrated agronomic program that starts below ground and supports crop performance throughout the season.

Across Australian horticulture, growers are increasingly being challenged to deliver consistent yield and quality under more variable seasonal conditions. Spring can bring rapid canopy growth, disease pressure, heat spikes, dry winds and increasing nutrient demand. While

these challenges differ between crops, the fundamentals remain consistent: healthy roots, active soils, balanced nutrition, effective irrigation and timely monitoring.

A productive spring program begins in the rootzone. Soil structure, drainage, pH, salinity, organic matter and biological activity all influence nutrient availability and water-use efficiency. Poor drainage or restricted root activity can often appear as nutritional problems, when the underlying issue is actually physical or biological. Understanding soil condition before symptoms appear allows growers to address constraints proactively rather than reactively.

Organic matter and soil biology have become increasingly important components of modern horticulture. Beneficial microbes contribute to

nutrient cycling, root growth and plant resilience, while organic amendments help improve soil function over time. Products such as Yates Dynamic Lifter Pellets and Yates AgriBoost Pellets can be incorporated into soil-management programs to support soil conditioning and provide a source of slow-release nutrition. Where soil testing identifies structural issues, amendments such as gypsum or lime may also help improve soil condition and nutrient availability.

Biostimulants have also become valuable tools for supporting crop resilience during periods of environmental stress. However, their greatest value is achieved when they form part of a planned program rather than being used as rescue treatments. Seaweed-based technologies such as Seasol Commercial, Acadian 100% Soluble Seaweed Extract and Stimplex



are commonly used to support root growth, establishment and plant recovery during challenging growing conditions. The key is matching the product to the objective, whether that is improving root development, supporting soil biological activity or helping crops recover from seasonal stress.

Nutrient decisions should always be guided by testing and crop demand. Soil analysis, water testing, tissue testing and sap monitoring help distinguish true nutrient deficiencies from issues caused by poor uptake, root restriction or environmental stress. Applying nutrition based on evidence improves efficiency and return on investment. Where testing identifies specific deficiencies, targeted nutrition programs can be implemented using products such as the Aminogro MAXi range, which provides options for supplying key nutrients including calcium, boron, zinc and other micronutrients.

For almonds, spring management should be aligned closely with crop phenology. Bloom, fruit set and early kernel development all place significant demands on the tree. Pollination success, irrigation uniformity and timely nutrition play critical roles in determining final yield potential. Most commercial programs focus on maintaining root activity, supporting pollinator health and monitoring nutritional requirements throughout these key growth stages. Water stress during flowering and

kernel development can significantly impact both current-season performance and future productivity.

In macadamias, spring coincides with flowering, pollination and early nut development. As an evergreen crop, tree health must be maintained year-round. Root condition, canopy structure, moisture management and pollinator activity all influence productivity. Well-managed canopies support light penetration, airflow and more effective pest and disease management. Spring programs should integrate orchard-floor health, drainage, monitoring and crop-stage nutrition to support both nut set and overall orchard resilience.

For ginger, spring success begins well before planting. Clean planting material, well-prepared beds and effective drainage are critical foundations for a successful crop. Ginger thrives in friable, well-drained soils with good organic matter and an active soil biology. Because the crop is propagated vegetatively, seed-piece health remains one of the most important factors influencing disease risk. Crop rotation, hygiene, irrigation management and balanced nutrition all contribute to strong establishment and rhizome development throughout the season.

Crop protection decisions should also be integrated within the broader production system. Effective management starts with regular scouting, accurate identification and

an understanding of crop stage, environmental conditions and economic risk. Where appropriate and registered for use, products such as eco-oil, ecocarb PLUS, ecocopper 375 WG, ecosulfur, AzaMax and Synertril Horti Oil can be incorporated into crop protection programs as part of an integrated pest and disease management strategy.

The strongest spring programs are built on a whole-of-system approach. By combining soil health, biological activity, crop monitoring, targeted nutrition, stress management and effective crop protection, growers can improve resilience and make better commercial decisions throughout the season. While individual products have an important place within modern horticulture, long-term success comes from integrating the right tools at the right time to support overall crop performance.

MORE INFORMATION

For technical support, contact Dr Faranak Nourbakhsh, Technical Manager, Yates Hort & Ag, via email at faranak.nourbakhsh@seasol.com.au or phone +61 488 088 166.

Visit Yates Hort & Ag crop specific guides for more information: www.hortag.com.au

RESEARCHERS DISCOVER GENETIC SECRETS OF MUNG BEAN CROPS

RESEARCHERS AT THE CENTRE FOR CROP AND FOOD INNOVATION (CCFI) HAVE MADE A SIGNIFICANT CONTRIBUTION TO A LANDMARK STUDY, UNCOVERING TENS OF THOUSANDS OF PREVIOUSLY HIDDEN STRUCTURAL VARIATIONS INFLUENCING AGRICULTURALLY IMPORTANT TRAITS IN MUNG BEAN.

The study, published in *Nature Genetics* today, presents the world's first graph-based pan-genome for the pulse crop, offering a comprehensive resource for understanding the genetic basis of key agronomic traits and accelerating crop improvement.

The international research team, co-led by researchers at the Chinese Academy of Agricultural Sciences and CCFI, assembled chromosome-scale genomes from genetically diverse mung bean accessions and analysed genomic variation across 580 global accessions. The resulting graph-based pan-genome captures more than 75,000 gene families and identifies over 66,000 structural variants, offering important insights that will help breeders target key agronomic traits and accelerate crop improvement.

In Australia, mung bean is a high-value summer pulse crop that generates over \$100 million annually in export revenue. At roughly three times the price of wheat per tonne, it represents a highly profitable break crop opportunity for Australian growers; however, seasonal rainfall variability continues to drive significant year-to-year swings in the size and value of the crop.

By cataloguing tens of thousands of previously invisible structural variations



and linking them to agronomic traits through genome-wide association analysis, this new genomic resource gives breeders a far more complete map of the genetic variation they can work with.

Globally, where mung bean underpins the diets and incomes of millions of smallholder farmers across Asia and Africa, the study's findings on genes governing seed nutritional compounds and resistance to bruchids, a major storage pest, have direct implications for global food security.

In a statement, CCFI Director and co-corresponding author of the study, Professor Rajeev Varshney FRS FAA, said the research represents a major advance in crop genomics and demonstrates how next-generation genomic technologies are transforming plant breeding.

"Traditional reference genomes capture only part of the genetic diversity within a crop species. By constructing a graph-based pan-genome, we can now identify structural variations that were previously invisible but often have profound effects on important agricultural traits," Professor Varshney FRS FAA said.

These discoveries provide breeders with powerful new genomic tools to accelerate the development of higher-yielding, more nutritious and climate-

resilient mung bean varieties. The genomic resources generated through this work will support marker-assisted breeding, genomic selection and genome editing, enabling breeders to deliver improved varieties to farmers much faster.

Deputy Vice Chancellor Research and Innovation Professor Peter Eastwood said the study highlighted Murdoch University's growing international influence in agricultural genomics, and demonstrated the impact that could be achieved through strategic global partnerships.

"More importantly, it advances fundamental scientific knowledge whilst delivering practical and actionable insights that help support global food security, climate resilience and sustainable agriculture. We are proud that Murdoch researchers continue to deliver valuable contributions in international collaborations that are transforming crop improvement for the benefit of communities worldwide," Professor Eastwood said.

Pro Vice Chancellor Food Futures Institute (FFI) Professor Peter Davies said the FFI was established to develop innovative, science-based solutions for the future of agriculture and food systems.

"By combining cutting-edge genomics with practical breeding solutions, this research will help accelerate the delivery of improved crop varieties that benefit farmers, consumers and food systems around the world," Professor Davies said.

MORE INFORMATION

Visit: <https://www.murdoch.edu.au/>

THE WINNING CHOICE, PROVEN BY GROWERS

WE RECENTLY RAN A SURVEY THAT SAW HUNDREDS OF AUSTRALIAN CEREAL GROWERS SHARE WHAT THEY VALUE MOST ABOUT AXIAL® XTRA HERBICIDE - AND THEIR ANSWERS WERE CLEAR.

Superior control of key grass weeds - wild oats (black) and phalaris - came up again as the standout. But it wasn't just about what it controls - it was how and when.

GROWERS TOLD US THEY VALUE:

- Targeted grass weed control - reliable knockdown of wild oats (black) and phalaris in wheat and barley, including in tough or marginal conditions where other options fall short
- A wide application window - the flexibility to chase late germinations and spray top to reduce viable seed

numbers, when other options have closed out

- No extra adjuvant needed - the built-in adjuvant means one less thing in the tank, fewer mixing issues, and faster turnaround in the paddock
- Broad tank mix compatibility - the ability to combine with broadleaf herbicides to optimise spray timing and logistics efficiency

As one grower put it:

"The ability to use late in crop for selective spray topping of wild oats while being very soft on our barley



and wheat - also no need for any additional adjuvant, is a big bonus."

That's the kind of confidence growers said AXIAL® Xtra gives them.

MORE INFORMATION

If you haven't tried AXIAL® Xtra in your program yet, or want to explore where it fits this season, get in touch with your local Syngenta representative or visit: <https://www.syngenta.com.au/axialxtra>

VIBRANCE®. Healthier yields start with healthier roots.

With three modes of action, VIBRANCE® provides the broadest available protection against smuts, bunts, rhizoctonia and pythium.

To help refine your cereal program for the season ahead, talk to your Syngenta representative, farm advisor or local retailer or visit [syngenta.com.au/vibrance](https://www.syngenta.com.au/vibrance)



syngenta.



© Registered trademark of Syngenta Group Company. © 2026 Syngenta. AD 26-225.



Dr Dreccer and her team are researching how best to build frost tolerance in wheat. Photo Credit: CSIRO



Under best management conditions, frost remained a major constraint on wheat yield. Photo Credit: Dr Felicity Harris/Charles Sturt University

FROST A CHALLENGE SHAPING AUSTRALIAN WHEAT PRODUCTION

REDUCING CROP SENSITIVITY TO FROST CAN DELIVER MEANINGFUL GAINS, PARTICULARLY IN ADVERSE SEASONS.

Australia's wheat producers are facing increasing pressure on yields as climate variability reshapes production decisions, with frost playing an increasingly challenging role.

A new study from CSIRO, Australia's national science agency, shows changing climate conditions are extending and intensifying the window of time for risk of frost damage.

Frost can cause up to \$360 million annually in wheat production losses with the study, supported by the Grains Research and Development Corporation (GRDC), showing that late spring frost and earlier heat continued to challenge producers.

Wheat is the major winter crop grown in Australia with sowing starting in autumn and harvesting usually occurring in spring and summer.

CSIRO lead author Dr Fernanda Dreccer said the study examined how well current best-practice management is performing.

"Growers have access to a range of strategies including cultivar selection and sowing time so crops flower within the optimal flowering period," said Dr Dreccer.

"That is the window where yield is maximised by balancing frost, heat and water stress, with adequate nitrogen fertilisation.

"But our study asked the question: what are the limits of these best management

strategies under increasing climate variability?"

To answer this, the research team ran long-term simulations across the Australian wheatbelt at 83 locations using climate data dating back to 1970 and a wide range of wheat cultivars.

The results showed that even under these best management conditions, frost remained a major constraint on yield even when flowering occurred within the optimal window.

Dr Dreccer said the study also highlights how management decisions for growers can involve unavoidable trade-offs between competing climate risks.

"As seasonal conditions vary, attempts to avoid heat and drought can increase exposure of frost during sensitive stages, with impacts compounded by late spring frost and the biggest impacts occurring when frost and heat stresses co-occur," Dr Dreccer added.

Dr Dreccer said the findings show that while phenology (the study of recurring biological events in plant life cycles) remains a critical tool, it is no longer sufficient on its own, with yields still constrained despite advances in agronomy and cultivar selection.

"The results show that reducing crop sensitivity to frost can deliver meaningful gains, particularly in adverse seasons," she said.

Over the past two years Dr Dreccer and her team have been researching how best to build frost tolerance in wheat, with a focus on evaluating genetically diverse wheat lines across multiple environments, including sites in New South Wales, South Australia and Western Australia, to better understand

frost damage and the conditions that drive it.

"As part of this work, we are also improving understanding of the environmental conditions associated with frost events, particularly the role of humidity and dew formation, which are key drivers of frost type and damage," she said.

"This highlights an important gap in current approaches, which often rely on air temperature alone and do not fully capture canopy-level conditions that influence whether damage occurs.

"While progress in managing frost has been slow, this improved understanding is helping to better assess risk and guide both agronomic strategies and the development of crops with reduced sensitivity during critical growth stages."

You can learn more about the research paper - Shifting prospects for wheat production: Long-term simulation-based insights under best management in Australia – at: <https://www.sciencedirect.com/science/article/pii/S0308521X26002052>

MORE ON CSIRO'S WORK ON THE EFFECTS OF FROST ON WHEAT:

- Frontiers | Challenges in modelling the impact of frost and heat stress on the yield of cool-season annual grain crops. <https://www.frontiersin.org/journals/plant-science/articles/10.3389/fpls.2025.1613432/full>
- Event-based frost and heat damage functions improve yield predictions of APSIM canola and wheat: formulation, calibration, and evaluation - Science Direct <https://www.sciencedirect.com/science/article/pii/S0168192326002248>

FORMER NUFARM CEO, FORMER NAMOI COTTON CHAIRMAN AND AGWORLD FOUNDER JOIN RLF AGTECH BOARD



RLF AgTech's Executive Chairman Ben Barlow.
Photo Credit: RLF AgTech Ltd



RLF AgTech's Chief Executive Officer Stuart Upton.
Photo Credit: RLF AgTech Ltd

RLF AgTech Ltd (RLF or the Company) (ASX: RLF) is pleased to announce the appointment of three highly respected Australian agribusiness leaders to its Board as Non-Executive Directors, significantly strengthening the Company's commercial, strategic and governance capability as it executes its next phase of growth.

Joining the Board are former Nufarm Limited Chief Executive Officer and Managing Director Greg Hunt, former Namoi Cotton Executive Chairman Tim Watson, and AgWorld founder Christopher Ramsey. Collectively, they bring extensive experience leading global agribusinesses, ASX-listed companies, agricultural technology businesses and large-scale farming enterprises.

The appointments form part of RLF's ongoing strategy to strengthen the Board with proven industry leaders who can help accelerate commercial execution, expand market opportunities and support the Company's long-term growth ambitions. In addition to their executive and board experience,

the new directors contribute deep domestic and international industry relationships, broad commercial expertise and successful track records in strategy, governance, capital allocation and value creation.

The appointments are effective from 1 October 2026 and have been approved by the Board of Directors.

RLF AgTech's Executive Chairman Ben Barlow said: "The calibre of directors joining RLF AgTech speaks volumes about the opportunity they see in our business and the direction we are taking as a company."

"We've been focused on building a stronger business with the right foundations for long-term growth. The appointment of Greg, Tim and Chris is another important step in that journey and reflects our commitment to surrounding the business with exceptional leadership as we execute our strategy."

"Collectively, they have led some of Australia's most respected agribusinesses, agricultural technology companies and ASX-listed organisations. Their commercial

HIGHLIGHTS

Former Nufarm CEO & Managing Director Greg Hunt, former Namoi Cotton Executive Chairman Tim Watson and AgWorld founder Christopher Ramsey appointed as Non-Executive Directors.

Appointments form part of RLF AgTech's strategy to strengthen the business and support its next phase of commercial growth.

Collectively, the new directors bring decades of leadership across global agribusiness, ASX-listed companies, agricultural technology and large-scale farming, together with extensive domestic and international industry networks.

experience, strategic insight and extensive industry networks will be invaluable as we accelerate commercial execution, expand market opportunities and continue creating long-term value for our shareholders."

ABOUT RLF AGTECH LTD (ASX: RLF)

RLF AgTech Ltd (ASX: RLF) manufactures high-analysis liquid fertilisers and seed treatments that build stronger root systems, the foundation for better nutrient uptake, crop quality and yield. Backed by more than 30 years of technical and agronomic expertise, RLF's products are designed to deliver measurable return on investment at the farm gate.

Visit: rlfagtech.com

MR. GREG HUNT

Greg Hunt has more than 35 years' leadership experience across agriculture, agribusiness and industrial sectors. He previously served as Chief Executive Officer and Managing Director of Nufarm Limited and Managing Director of Elders Limited. Greg has also served as a non-executive director and Chairman across a range of listed and private companies. He has extensive experience in strategy, capital allocation, international market development, governance and value creation, and has also served as a non-executive director and chairman across a range of listed and private companies.

TIM WATSON

Tim Watson brings extensive commercial farming and listed company experience, having spent more than 30 years developing and managing Sunland Agriculture, a leading broadacre irrigated cropping and horticulture business in southern New South Wales. He later served as Non-Executive Director, Chairman and Executive Chairman of ASX-listed Namoi Cotton, where he led the company through its successful acquisition by Louis Dreyfus Company. Tim also has extensive experience in agricultural policy and corporate governance. He has also contributed to agricultural policy and industry development, including as Chair of the Lower Lachlan Water Users Association, and is a member of the Australian Institute of Company Directors.

CHRISTOPHER RAMSEY

Christopher Ramsey is the founder of AgWorld and has more than 35 years' experience across agribusiness, agricultural technology, sales, marketing and commercial strategy. He has founded and built multiple businesses, developed extensive industry relationships across Australia's agricultural sector and worked with boards and executive teams to drive commercial growth and strategic execution.

DROUGHT-HARDY RYEGRASS RAISES NEW CHALLENGE

A STUDY BY LA TROBE UNIVERSITY RESEARCHERS HAS FOUND ANNUAL RYEGRASS, THE MOST DAMAGING WEED IN AUSTRALIAN GRAIN SYSTEMS, CAN ADJUST ITS GROWTH AND REPRODUCTION TO SURVIVE UNDER DROUGHT STRESS, MAKING IT POTENTIALLY HARDER TO MANAGE AS CLIMATE CONDITIONS BECOME MORE VARIABLE.



Annual ryegrass (*Lolium rigidum*) has evolved into the most problematic and economically damaging weed in Australia because of its competitiveness, prolific seed production and widespread herbicide resistance. It is estimated to cost grain growers \$93 million each year including grain yield losses and control expenses.

To better understand how the weed adapts to drought stress, researchers at the La Trobe Institute for Sustainable Agriculture and Food (LISAF) and the School of Agriculture, Biomedicine and Environment (SABE), examined how herbicide-resistant and herbicide-susceptible populations of ryegrass responded to various soil moisture levels under controlled glasshouse conditions.

They found that moderate water limitation did not simply suppress ryegrass growth, but in some cases stimulated the weed's development, with the resistant population producing up to 132 per cent more leaves and 153 per cent more tillers compared with saturated conditions.

And while severe drought reduced plant height, root and shoot biomass, and seed production of the herbicide-resistant ryegrass population by up to 50 per cent, the plants were still able to survive and reproduce.

In addition, the annual ryegrass showed greater flexibility in flowering time and maintained higher leaf water content

under stress, suggesting it may be better equipped to persist in water-limited environments.

This suggests annual ryegrass may remain a serious threat even in drier seasons, particularly where herbicide-resistant populations already occur.

The research, Morphological and physiological adaptations underpin drought resilience in contrasting populations of annual ryegrass (*Lolium rigidum*), has been published in the journal Scientific Reports.

Lead author Dr Ali Bajwa, Senior Lecturer in Weed Science and Agronomy, said the findings highlighted the need to rethink weed management in the face of climate variability.

"Annual ryegrass is already one of the most difficult weeds for Australian grain growers to control, and our study shows it has a strong capacity to adjust to moisture stress," Dr Bajwa said.

"The fact that the resistant populations can grow more vigorously under moderate drought and still produce seed under severe stress means growers need management strategies that are tailored to local weed populations and seasonal conditions. Resistant population did not show any major fitness cost and in fact, performed better under stress, which could be a double whammy for grain growers who are having to deal with herbicide resistant plants that are also drought hardy".

Dr Bajwa said the findings reinforced that there was no one-size-fits-all solution to managing annual ryegrass.

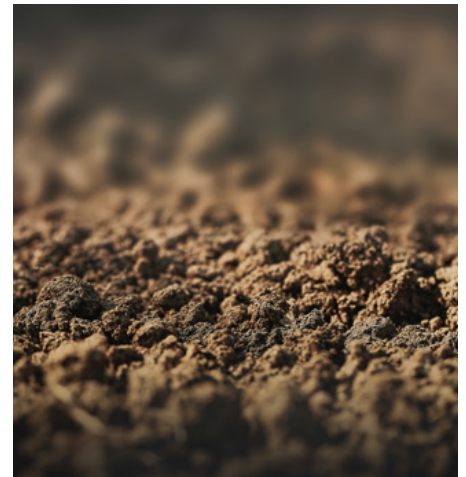
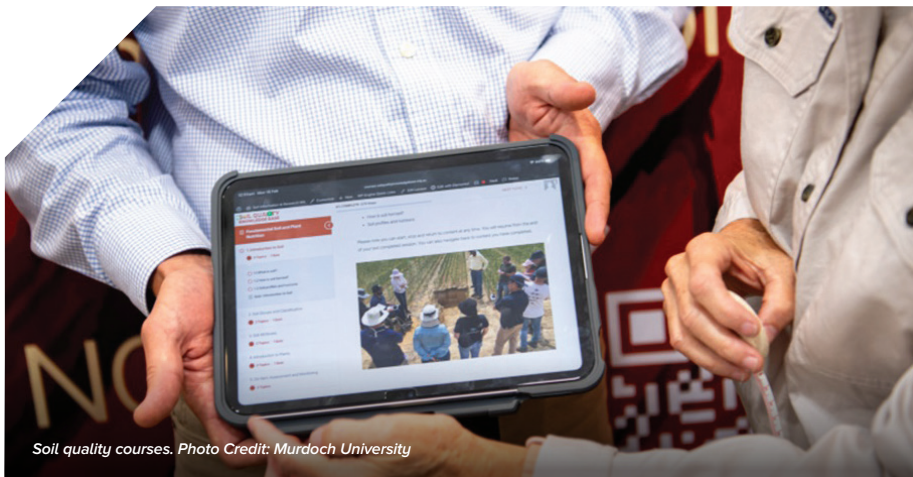
"Understanding how different ryegrass populations respond to drought can help growers and advisers design more targeted strategies to reduce seedbank build-up and limit the spread of difficult-to-control populations."

"We need further research on greater number of populations under field conditions in order to future proof our weed management programs in grain production in the wake of seasonal variabilities and changing climate." said Dr Bajwa.

The research was conducted by Roshell Warnakulasuriya, Babar Shahzad, Muhammad Adnan, Aakansha Chadha, Muhammad Farooq and Dr Ali Bajwa.

MORE INFORMATION

Visit: <https://www.latrobe.edu.au/>



FARM FOCUS FOR SECOND ONLINE NUTRITION COURSE

THE SECOND COURSE IN A FREE ONLINE LEARNING PLATFORM BY SOILSWEST AT MURDOCH UNIVERSITY, WITH CO-INVESTMENT FROM GRAINS RESEARCH AND DEVELOPMENT CORPORATION (GRDC), WILL GIVE LANDHOLDERS AND PRODUCERS KNOWLEDGE TO MAKE CRITICAL FARM MANAGEMENT DECISIONS.

Understanding Soil and Plant Nutrition builds on concepts introduced in the first of the Soil Quality Courses, Fundamental Soil and Plant Nutrition, which has attracted more than 300 users since its launch in February 2026.

While the courses are open to learners from all backgrounds – advisors, researchers, agricultural workers and tertiary students included – SoilsWest Director and project manager Associate Professor Fran Hoyle believes the new materials will resonate with those seeking practical application.

“The intent of course two is to support users with understanding what their soil might be telling them, particularly when it comes to nutrient cycling and its influence on plant growth,” she said.

“We step through designing fit-for-purpose sample plans, interpreting soil and plant tissue test reports, using benchmarks and indicators to assess soil characteristics and performance, and running on-farm trials.

“We hope that by the end of this course, users will have the confidence to put their learnings into practice.”

GRDC Grower Relations Manager – West Luke Dawson said Understanding Soil and Plant Nutrition would build on the platform’s value for existing participants while also accommodating experienced growers and industry professionals.

“By making these courses freely available online, we are helping more growers and advisors access practical, research-backed information they can use to support better nutrition decisions on-farm,” Mr Dawson said.

“The project was identified as a priority through GRDC National Grower Network forums and responds directly to

the need for accessible information on the links between soil, nutrition and plant performance.

“It draws on cutting-edge research from national soils and nutrition projects, as well as insights generated through recent GRDC investments across the western region, to support stronger understanding and wider adoption.”

The platform has been designed so users with prior knowledge can bypass the fundamental course by successfully completing a 30-question assessment. They can then start with the more applied understanding of course two.

Understanding Soil and Plant Nutrition includes around seven hours of self-paced lessons. It continues to bring together enriched and visual content sourced from existing publications and evidence-based websites, including the Soil Quality eBook series and Soil Quality Knowledge Base.

The third and final course, Managing Soil and Plant Nutrition, is scheduled for release later this year, while ongoing delivery also includes a program of regional workshops.

MORE INFORMATION

Expressions of interest in hosting a workshop are welcomed to soilswest@murdoch.edu.au

Soil Quality Courses can be found at <https://courses.soilqualityknowledgebase.org.au>

Project funding (UMU2411-003SAX) is supported through a co-investment between GRDC and Murdoch University.



DECISION TIME FOR THE FUTURE OF FARMING IN AUSTRALIA

AG2050 NEXT STEPS – SCENARIOS TO DECISIONS IDENTIFIES THE NEAR-TERM DECISIONS, UNCERTAINTIES AND PRACTICAL ACTIONS THAT WILL SHAPE AUSTRALIAN AGRICULTURE IN THE COMING YEARS

Australian agriculture is facing important decisions that will shape its productivity, profitability and sustainability towards 2050, according to a new discussion paper released by CSIRO, Australia's national science agency, and the Australian Farm Institute.

Ag2050 next steps – scenarios to decisions identifies the near-term decisions, uncertainties and practical actions that will shape Australian agriculture in the coming years in the areas of sovereign security, resilience, trusted sustainability reporting and agricultural innovation.

CSIRO Program Lead Dr Rose Roche said the discussion paper was the next step in a multi-year program aimed at supporting Australian farms to be profitable, productive and sustainable by 2050.

"We started in 2024 working with industry to co-design four evidence-based future scenarios for Australian farming systems, exploring their benefits and trade-offs, which we presented in the Ag2050 Scenarios Report," said Dr Roche.

"The four scenarios were then used as a lens during an Ag2050 roundtable in March this year involving government, industry, research, regional and Indigenous organisations to identify near-term decisions shaping Australian agriculture."

THE FOUR FUTURE SCENARIOS ARE:

- **Regional Ag capitals** - a consolidated and technologically advanced sector focused on productivity gains, food and fibre production, and growth in select regional centres.
- **Landscape stewardship** - a diversified sector balancing food and fibre production with carbon sequestration, biodiversity, ecosystem services and energy production.
- **Climate survival** - a sector relying on incremental adaptation and diversification to manage climate impacts rather than pursuing transformative change.
- **System decline** - a sector facing declining productivity and resilience due to delayed and fragmented responses to growing challenges.

Dr Katherine Wynn, who led the development of the scenarios and stakeholder meeting, said the roundtable helped identify where uncertainty was slowing action and where greater coordination, evidence and investment could support better decision-making.

"When the Ag2050 scenarios were developed, many of these challenges were still emerging," said Dr Wynn.

"Today they are embedded in decision-making across government

and industry, making it more important than ever to understand how today's choices are shaping Australia's agricultural future."

Australian Farm Institute Executive Director Katie McRobert said the Ag2050 program of work was providing key insights to help guide the future success of Australia's farm sector.

"The strategic choices that we make today are going to have significant impact in the years leading to 2050," said Ms McRobert.

"From productivity to land and water use to climate impacts and the growing use of technology to support decision making - there is a lot for the sector to consider."

The discussion paper which you can see at: <https://www.csiro.au/en/work-with-us/services/consultancy-strategic-advice-services/CSIRO-futures/Agriculture-and-Food/Ag2050-next-steps-scenarios-to-decisions> will support further conversations with government, industry, research, regional and Indigenous organisations about the decisions, evidence and coordination needed for the future.

MORE INFORMATION

Visit: <https://www.csiro.au/>



Don't Just Fix Nitrogen. Build The System That Delivers It.

Co-inoculate with **NoduleN** and **LALRISE START SC** to accelerate root growth, strengthen nodulation and improve nitrogen fixation.

FOR MORE
INFORMATION
CALL US ON:
02 6025 0044



BUILT BY LISTENING. BACKED BY SCIENCE.

3 Moloney Drive, Wodonga Vic 3690, Australia.
+61 2 6025 0044 www.nem.com.au



SERGOMIL® L60: COPPER NUTRITION DESIGNED AROUND PLANT PHYSIOLOGY

COPPER PLAYS A SMALL BUT INDISPENSABLE ROLE IN CROP NUTRITION. IT CONTRIBUTES TO PHOTOSYNTHESIS, ENZYME ACTIVITY, LIGNIN FORMATION AND SEVERAL METABOLIC PROCESSES THAT INFLUENCE PLANT GROWTH AND STRUCTURAL INTEGRITY. HOW COPPER IS FORMULATED, HOWEVER, CAN INFLUENCE ITS AVAILABILITY, UPTAKE AND MOVEMENT WITHIN THE PLANT.

SERGOMIL® L60 is Agreva's specialised copper monogluconate formulation, developed by Spanish agricultural bioscience company Servalesa. It contains 7.1% w/v copper complexed with a proprietary consortium of saccharide derivatives, principally monogluconic and galacturonic acids extracted and purified from plant-derived materials.

This formulation is the product of more than 40 years of Servalesa research and refinement. Today, SERGOMIL® L60 is used in more than 50 countries, with Agreva providing the product, technical support and local agronomic interpretation for Australian and New Zealand production systems.

MORE THAN A SOURCE OF COPPER

Monogluconic acid forms a stable complex with copper, supporting its availability and absorption by the plant. Its relatively simple molecular structure and stability across a useful range of pH conditions make it well suited to delivering copper through foliar or root uptake.

The galacturonic-acid component adds another dimension to the formulation. Galacturonic acid is derived from natural pectins and is associated with plant metabolic activity and cell-wall processes. Consequently, SERGOMIL® L60 has been studied not only as a source of copper nutrition, but also for the

physiological responses associated with its complete formulation.

Research undertaken in Spain, including work involving the Spanish National Research Council's Zaidín Experimental Station, has examined copper uptake and systemic movement in treated plants, alongside increased stem lignification, callose deposition and expression of genes linked to plant defence pathways.

Experimental work has also reported increased expression of LAC4, a gene associated with lignin biosynthesis, together with greater lignin deposition in treated stem tissue.

Lignin provides rigidity and structural strength within plant cell walls.



Complementary microscopy work has observed increased callose deposition in treated leaves. Callose is a polysaccharide deposited by plants at cell walls and other strategic sites as part of their response to physical, environmental and biological stresses.

Together, these responses support stronger plant structure and may enhance the plant's natural resilience to environmental and biological stress.

Importantly, these physiological responses should not be interpreted as direct disease-control claims. SERGOMIL® L60 is registered in Australia as a copper-based fertiliser to support general plant health, not as a fungicide or agricultural chemical for pest or disease control.

SERGOMIL® L60 IN AUSTRALIAN POTATO RESEARCH

SERGOMIL® L60 has also been used in Tasmanian potato field research involving the University of Tasmania and Simplot as part of work investigating integrated approaches to powdery scab management.

SERGOMIL® L60 was the copper gluconate formulation used in these field trials. Identifying the specific

formulation is important because a number of copper gluconate products are commercially available, and differences in formulation may influence plant uptake and physiological response.

The research program has investigated SERGOMIL® L60 alongside other management approaches under replicated and semi-commercial field conditions across Tasmanian potato-growing regions.

The work remains research in progress. Results should therefore not be interpreted as evidence that SERGOMIL® L60 controls powdery scab, nor as a replacement for registered crop-protection products or established integrated disease-management practices.

The distinction between product-specific and broader copper-gluconate responses will also be an important area for future research. Comparing different formulations may help establish whether responses observed with SERGOMIL® L60 are specific to its formulation or representative of copper gluconates more broadly.

For Agreva, this combination of international physiological research and independent Australian field evaluation is particularly valuable. It allows SERGOMIL® L60 to be assessed not simply on copper concentration, but on how the formulation behaves within the plant and how it may contribute to plant nutrition, structure and resilience under commercial growing conditions.

SERGOMIL® L60 is registered in Australia as a copper-based fertiliser to support general plant health. Applications should follow the product label and form part of an agronomically sound crop-nutrition program.

MORE INFORMATION

To discuss SERGOMIL® L60 and its use within crop nutrition programs, contact Agreva or your local agricultural retailer. Visit: www.agreva.com

VERSYS® INSECTICIDE NOW DELIVERS APPLE DIMPLING BUG CONTROL TO AUSTRALIAN POME FRUIT GROWERS



Photo Credit: BASF



Australian apple and pear growers now have a new option for managing apple dimpling bug in pome fruit, following approval by the Australian Pesticides and Veterinary Medicines Authority (APVMA) of a label extension for Versys insecticide.

Already established across a range of horticultural crops, Versys delivers effective apple dimpling bug control at low use rates through its unique Group 9D mode of action, supporting insecticide resistance management. By rapidly stopping feeding activity of apple dimpling bug, Versys significantly reduces damage during critical stages of crop development.

“Apple dimpling bug can have a significant impact on fruit quality, damaging fruit and causing deformities. We’re pleased to bring Versys to the pome fruit market, providing growers with effective control during flowering and a strong fit within Integrated Pest Management

(IPM) programs,” said Parvana Wali, Head of Agricultural Solutions, BASF Australia and New Zealand.

Suitable for use in pome fruit during flowering, a critical stage for crop development and pollination, Versys offers flexible application timing during a period when apple dimpling bugs are most active. Its low risk to beneficial insects and pollinators, when used according to label directions, makes it an ideal addition to IPM programs.

This registration further demonstrates BASF's commitment to delivering innovative crop protection solutions that help growers protect crop quality and maximise productivity.

For more information on Versys insecticide, contact your local BASF representatives or visit the BASF Agricultural Solutions website: www.basf.com.



KEY POINTS

- Versys insecticide, a Group 9D mode of action, delivers effective apple dimpling bug control at low use rates
- Rapid feeding cessation helps minimise crop damage and protect fruit quality
- Strong fit within Integrated Pest Management (IPM) programs, with low risk to beneficial insects and pollinators when used according to label directions

ABOUT BASF AGRICULTURAL SOLUTIONS

Everything we do, we do for the love of farming. Farming is fundamental to provide sufficient 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 €990 million in 2025, we invest in a strong R&D pipeline, and 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 stakeholders along the value chain. In 2025, our business generated sales of €9.6 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 €318 million in Australia and New Zealand in 2025. As of the end of 2025, the company had 319 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.

ABOUT BASF

At BASF, we create chemistry for a sustainable future. Our ambition: We want to be the preferred chemical company to enable our customers' green transformation. We combine economic success with environmental protection and social responsibility. Around 95,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises, as core businesses, the segments Chemicals, Materials, Industrial Solutions, and Nutrition & Care; our standalone businesses are bundled in the segments Surface Technologies and Agricultural Solutions. BASF generated sales of around €60 billion in 2025. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States. Further information at www.basf.com.

ENGINEERING A BETTER FUTURE FOR NATIVE GRAINS

SPECIALISED PROCESSING FOR UNIQUE AUSTRALIAN CROPS

Inside the University of Sydney's Faculty of Engineering, a team of researchers are solving a challenge: how do you build machines to process native Australian grains that are smaller and more delicate than their European counterparts?

The answer is being developed by Professor Salah Sukkarieh and his engineering team, thanks to a transformative gift from the Ian & Shirley Norman Foundation — the Foundation's first to the University. Designed in close collaboration with Gamilaraay and Yuwalarraay stakeholders, the donation is enabling the creation of Australia's first commercial-grade native grain threshing and cleaning systems, built in partnership with Indigenous leaders and communities.

"Most of the threshing technology used in agriculture today is designed for European crops which are not suitable for native grains," explains Professor Sukkarieh. "So, we've set out to create something from the ground up working with Gamilaraay and Yuwalarraay stakeholders who are sharing their cultural knowledge."

SMALL GRAINS, BIG POTENTIAL

Native grains like Native Millet and Mitchell Grass hold immense potential for sustainable farming and land regeneration and are culturally significant to many Indigenous communities who traditionally hand-thresh the grains. However, the machinery needed to process them simply doesn't exist — until now.

Professor Sukkarieh's team is working on four integrated solutions. First, they're building technology that fits within the existing Narrabri research site, a facility already used by Indigenous custodians for growing native grains. Second, they're developing data-enabled systems to not only process the grain but collect insights that can support ongoing agricultural research. Third,

they're designing a mobile, trailer-based unit that can be transported to remote communities. And fourth, they're working toward an open-access model so Indigenous communities can build and adapt the technology themselves, with full ownership over how it's used.

"This is about creating engineering systems that work in real environments," says Professor Sukkarieh. "But it's also about making sure those systems are scalable, accessible, and culturally appropriate — especially as we begin to collaborate with remote communities."

CO-DESIGN AT THE CENTRE OF INNOVATION

To do that responsibly, the team is moving with care, with community co-design being intentionally paced.

"We didn't want to just build something and hand it over," Professor Sukkarieh says. "The goal is to co-design the next stages directly with community, and that takes time, relationships, and the right people in the room."

For the Ian & Shirley Norman Foundation (ISNF), that approach is exactly why they chose to support this work.

"This project brings together some of the most important things we care about — environmental sustainability, Indigenous self-determination, and innovation," says Tracy Norman, Founder and Chair of ISNF. "And Salah's leadership has been crucial. He's collaborative, thoughtful, and brings a real sense of purpose to the work."

One of the things philanthropy does best is allow you to be flexible. With this funding, we've been able to take on challenges that wouldn't necessarily attract traditional research grants." Professor Salah Sukkarieh, Faculty of Engineering

ISNF is known for its bold, time-limited approach to philanthropy. Rather than operating indefinitely, it has committed to distributing its full corpus over ten years, investing in transformational change here and now.

"We're not interested in legacy for the sake of legacy," Tracy says. "We're interested in action. That's what drives us — finding people who are doing the work and backing them to do it well."

Coralie Nichols, ISNF's Chief Executive Officer, adds that working with Salah and his team has been uniquely rewarding.

"He's an extraordinary communicator," she says. "He films conversations with his team to explain technical updates and it means we're really brought into the process. We're not just observers, we're partners."

That partnership model has proven especially important in a complex project like this, where the technology, the cultural context, and the long-term economic aspirations must all align.

"One of the things philanthropy does best is allow you to be flexible," says Professor Sukkarieh. "With this funding, we've been able to take on challenges that wouldn't necessarily attract traditional research grants."

UNLOCKING INDIGENOUS-LED ENTERPRISE

And those outcomes could be far-reaching. By enabling communities to process and commercialise native grains, this work has the potential to open up new models of Indigenous-led enterprise, connect people to Country through food and culture, and support regenerative land management across the continent.

"It's not our role to define what the future of native grains looks like," says Professor Sukkarieh. "What we're trying to do is facilitate. So, the hope is that there's a wider range of Indigenous communities that are using the technology."



(Photo credit: Brendon Thorne/ University of Sydney.)

ISNF is staying closely involved to support the project as it grows and evolves.

“We want to see the work used, owned, and led by the communities it was built for,” Tracy says. “That’s what real impact looks like to us.”

In a world where agriculture, technology and culture often move in separate directions, this project shows what can happen when they converge thoughtfully and with purpose.

It’s a story of engineering innovation, but more than that, it’s a story of what’s possible when philanthropy

enables people to design and deliver something that’s not just great for the community but the country at large

MORE INFORMATION

Visit: www.sydney.edu.au

Kill **EVERY** insect you hit

With *Natural Pyrethrum*



All Thrips

All Whiteflies

All Aphids



5L of Py-Bo makes 5,000L
\$0.21/L of ready-to-use spray

No
Resistance

No Bio-
accumulation

1 Day
Withholding

Spray tonight
Pick tomorrow

Fruit, veg, cut flowers & ornamental - Thrips, whiteflies, aphids, ants, cabbage moths, caterpillars, earwigs & leafhoppers.

1800 12345 7

py-bo.com.au



(Photo credit: Charley's Chocolate Factory)



The cocoa pods are opened to remove the cocoa beans within a week to 10 days after harvesting. There are typically between thirty to forty beans in each pod. (Photo credit: Charley's Chocolate Factory)

HOW A UNIQUE ENVIRONMENT SETS AUSTRALIAN CHOCOLATE APART

UNIVERSITY OF QUEENSLAND RESEARCH HAS SHOWN MICROBES COULD GIVE AUSTRALIAN-GROWN CHOCOLATE AN EDGE IN THE GLOBAL MARKET.

Working with growers in Far North Queensland, scientists found the cocoa fermentation process may have a bigger influence on the flavour of chocolate than the cocoa tree itself.

Food chemist Dr Marlize Bekker compared the aroma, flavour, and composition of crushed cacao beans, called nibs, from Fishery Falls, Mt Etna, and Shannonvale.

Dr Bekker said in this study the method and location of fermentation played a greater role in the taste of chocolate than the location of the farm or type of cocoa tree.

"We had different types of cocoa trees and we thought that would have a big impact on the flavour but the tree's genotype had a much smaller role to play than the fermentation process itself," Dr Bekker said.

"Whatever is in the environment drives the natural fermentation – nothing is introduced – and we know it is critically important for flavour and quality."

Dr Bekker said understanding the driving forces behind unique flavours allowed producers to control it.

"Cocoa can display a remarkable diversity of flavour characteristics, ranging from classic chocolate and roasted notes to buttery and even tropical aromas," she said.

"By understanding Australia's unique fermentation environment, we can intervene during the process and start to direct those flavour profiles."

Dr Bekker said the study could help bolster the Australian chocolate industry.

"This is a preliminary study, and we are hoping to do more work, so we can position Australia on the world stage and show the unique characteristics Australia has," she said.

"We don't want to compete with the mass-produced chocolates; it is about



The cocoa pods are opened to remove the cocoa beans within a week to 10 days after harvesting. There are typically between thirty to forty beans in each pod. (Photo credit: Charley's Chocolate Factory)

| 23

HIGHLY ANTICIPATED NEW MULTI-SITE GRAPE FUNGICIDE TICKS ALL BOXES

AUSTRALIAN GRAPE GROWERS ARE NOW ARMED WITH A UNIQUE MULTI-SITE FUNGICIDE THAT IS ALREADY WIDELY USED AROUND THE WORLD FOR ITS MINIMAL IMPACT ON BENEFICIAL INSECTS, PLUS ITS ABILITY TO PREVENT THE BUILD-UP OF RESISTANCE OF FUNGAL STRAINS TO SINGLE SITE MODE OF ACTION FUNGICIDE GROUPS.



Daniel Polson, Market Development Manager - Horticulture with ADAMA Australia. Photo Credit: ADAMA



AUSTRALIAN grape growers are now armed with a unique multi-site fungicide that is already widely used around the world for its minimal impact on beneficial insects, plus its ability to prevent the build-up of resistance of fungal strains to single site mode of action fungicide groups.

With registration approved for this season, Folpan® 800 WG is a Group M04 fungicide containing folpet as the active ingredient, providing preventative control for downy mildew and botrytis plus other key diseases.

Viticultural advisors and growers have already seen the new fungicide working across vineyard trial sites throughout Australia's major growing regions and have been impressed with the results.

Developed by global crop protection supplier, ADAMA Australia, Folpan will ideally be applied as a protectant cover spray in preventative programs and it has excellent compatibility with single site, systemic partner fungicides.

Daniel Polson, Market Development Manager - Horticulture with ADAMA Australia, said it had been several decades since an alternate multi-site fungicide had been launched in Australia.

He said some multi-site molecules had recently been banned in the European Union and other export markets, while

others remained under review, which could limit the multi-site fungicide options available for Australian producers.

"The good news is that folpet has recently been approved out to 2039 through the EU's stringent assessment process, and it already has established export MRL (maximum residue limit) status in Australian export markets," Daniel said.

"Extensive wine fermentation and sensory studies have also been completed in Australia as part of the local trial work.

"Folpan has the benefit of containing a new, unique active ingredient that acts across different cellular levels, which will help prolong the life of single site fungicide products when used strategically in combination across the growing season."

He said Folpan would be a cost-effective option for growers early in the season to protect against powdery and downy mildew, and, with activity extending to botrytis as well, it would be used over flowering with minimal impact on key beneficial insects including honey bees, lacewing, parasitic wasps, predatory mites and ladybirds.



ADAMA Australia team pictured with Elders at the Folpan trial site at Faraday in Victoria's Harcourt Valley. Photo Credit: ADAMA

Courtney Lean, Horticultural Agronomist with Nutrien at Berri in South Australia's Riverland region, saw Folpan applied with low and high rates of sulphur at a trial site at Faraday in Victoria's Macedon Ranges under high powdery mildew pressure and was impressed with its performance at the lower sulphur rates.

Courtney said numerous Riverland growers have used high rates of sulphur in their programs in recent seasons as an affordable option against powdery mildew and its impact on beneficial insects may have contributed to higher populations of mealybug and scale.

She said the ability to use lower rates of sulphur with Folpan could be a potential option to help reduce the impact of sulphur on beneficial insects in crop canopies whilst maintaining strong control of powdery mildew.

"The information presented at Faraday included the low impact of the product on beneficial arthropods," Courtney said.

She said hot conditions in the Riverland in recent years also resulted in some late-season sulphur burn on sensitive varieties, so the option to use Folpan™ 800 WG and reduce sulphur rates to prevent damage associated with phytotoxicity, particularly in high-value white varieties, could be a major benefit.

Adrian Utter, Horticultural Agronomist with Muirs in Victoria's Yarra Valley, said the differences between the untreated area and the Folpan applications at the Faraday trial were strong.

Adrian said high rainfall and humidity in the Yarra Valley region can often result in high powdery mildew and downy mildew pressure, and, hence, a new mode of action, multi-site fungicide such as Folpan, which can help reduce resistance development to important systemic and curative fungicides, would be appealing.

"We definitely see a fit for mixing an affordable multi-site fungicide, that's not going to build-up resistance, into our programs," Adrian said.

He said increased awareness of copper build-up in soils and greater restrictions on the use of Captan and mancozeb also had left a gap in multi-site alternatives for control of downy mildew.

MORE INFORMATION

Visit: www.adama.com

PROMISING NEW APPROACH TO CONTROLLING INSECT-SPREAD DISEASE WITHOUT INSECTICIDES

GLASSHOUSE TRIALS ARE UNDERWAY TO VALIDATE A 3-IN-1 APPROACH TO CONTROL VIRAL DISEASES OF GRAIN CROPS. THE NON-GM APPROACH IS APPLIED AS A SPRAY DESIGNED TO BLOCK VIRUSES FROM REPLICATING, BOOST PLANT IMMUNITY AND TARGET INSECT VECTORS SUCH AS APHIDS.

BY: DR GIO BRAIDOTTI, SENIOR WRITER, GROUNDCOVER SUPPLEMENT EDITOR GRDC GROUNDCOVER

An innovative new approach to protecting crops from viral diseases by activating plants' natural defences could significantly reduce the reliance on insecticides to control the insect vectors.

A University of Queensland team, led by Dr Karl Robinson, is validating the technology in glasshouse trials. The approach disrupts the disease cycle at 3 key leverage points: boosting plant immunity, disrupting viral replication, and targeting the insect populations that transmit the virus.

The concept came to light when Dr Robinson deliberately set out to induce plant defences without the use of gene modification (GM) technologies. "While GM has been used successfully to combat viruses in high-value crops such as cotton, it can be viewed controversially and may also be subject to costly regulatory restrictions," he says.

Instead, we asked: what if we could mimic the virus protection seen in GM crops but without altering the plant's genome?

THE VIRAL THREAT

Trials to work up this technology targeted the 'yellow viruses'. These included barley yellow dwarf virus (BYDV) and turnip yellows virus (TuYV). These cause significant grain yield and grain quality losses.

"What makes these infections particularly damaging is their stealth," says Dr Robinson. "Symptoms are subtle or entirely absent and often mistaken for nutrient deficiencies, making diagnosis and timely treatment difficult."

Since these viruses are spread primarily by aphids, insecticides are used to manage the diseases. Aphids, however, are developing resistance. This is a familiar cycle – increasing chemical use and costs while lowering returns as the targeted organism uses its genetic resources to evade the chemical mode of action.

Consequently, Dr Robinson and his team are looking for new tools to protect yields, profitability and sustainability.

NATURAL DEFENCES

One of the most powerful ways that plants defend themselves against viruses is called RNA interference (RNAi). It works by detecting and silencing the RNA molecules produced when viral genes are expressed.

The RNAi mechanism is present across plant and animal kingdoms, often to help regulate gene expression. In plants, however, it doubles up as part of the immune system.

The university team is targeting viruses that produce distinctive RNA structures when they replicate. The distinction relates to the number of molecular strands. DNA typically involves 2 strands (that coil around each other in a double helix), normal RNA molecules are single-stranded.

The viruses targeted by plant defences stand out because they are double-stranded RNA (dsRNA).

"When the plant detects these unusual double-stranded RNA, it recognises

it as a threat and activates a defence response," Dr Robinson says. "The plant produces proteins that break down the viral RNA, effectively stopping the virus from multiplying."

While GM has been used successfully to combat viruses in high-value crops such as cotton, it can be viewed controversially and may also be subject to costly regulatory restrictions. Instead, we asked: what if we could mimic the virus protection seen in GM crops but without altering the plant's genome?

NATURAL DEFENCES STRENGTHENED

Despite being powerful, RNAi can be overwhelmed. Viruses are always evolving and some can suppress or evade the plant's defences. As such, Dr Robinson wanted to take a 'whole system approach' that disrupts the virus's replication process at 3 levels: the plant, the virus and the insect vector. The aim is to break the virus life cycle rather than just respond when an infection is underway.

The technology platform deployed has the ability to make double-stranded RNA molecules synthetically and to order. This avoids the need to introduce genes into the plant as the source of the interfering dsRNA. Instead, the dsRNA concoction is sprayed directly onto plants.

Dr Robinson's team has designed specific dsRNA molecules to mount a 3-tiered attack to:

- stop the virus replicating in the plant
- prevent the virus from being transmitted by aphids



Glasshouse trial at the Queensland Alliance for Agriculture and Food Innovation to test an RNAi spray designed to prevent viral diseases, such as barley yellow dwarf virus. Photo Credit: UQ Megan Pope.

- target essential genes in aphids themselves to reduce pest populations over time.

“This approach doesn’t just protect crops from immediate threats, it also works to break the virus’s life cycle and reduce its spread between plants, while lowering insect population numbers,” Dr Robinson says.

Since both plants and aphids can be targeted this way, a startling new possibility may be on the horizon:

What is exciting about this research is its potential to lessen, and perhaps one day eliminate, reliance on insecticides.

LOOKING AHEAD

Researchers in a broader collaborative team are already at work to bring a new generation of crop protection technologies to growers. Included are Dr Ben Congdon

of the WA Department of Primary Industries and Regional Development, Dr Piotr Trebicki of Macquarie University and Dr Murray Sharman of the Department of Primary Industries – Queensland.

The dsRNA strategy is attractive as it offers a new generation of benefits – reduced reliance on chemical insecticides plus yield and crop quality gains that are achieved with lowered input costs. Dr Robinson notes that while RNAi technology is not yet commercially available in Australia, glasshouse trials are paving the way to field trial work.

“The potential is clear: a safer, smarter and more sustainable way to protect crops from emerging threats,” he says. “If successful, RNAi-based crop protection could help to further align Australian grain production with environmentally

sustainable practices that nonetheless help growers by improving profits.”

The Effective virus management in grain crops (C2) project is funded by the Grains Research and Development Corporation and the Department of Primary Industries. (Code: UOQ2306-011RTX)

MORE INFORMATION

Visit: <https://www.uq.edu.au>

This article was written by Gio Braidotti and published in GRDC's Groundcover magazine. Read original article.

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

You'll stick with
All Clear[®] DS
Spray Tank Cleaner and Decontaminator
Because little else does!



    agnova.com.au

*Registered trademarks. 240207

AgNova
TECHNOLOGIES

An American Vanguard Company



Farmers have the ongoing challenge of managing pests and diseases in their crops. Photo Credit: CSIRO



The collective knowledge of farmers and local communities has been incorporated into the new Pest READI tools. Photo Credit: CSIRO



CSIRO researchers worked with a range of different industries in developing the new tools. Photo Credit: CSIRO

NEW DIGITAL TOOLKIT TO TACKLE PEST MANAGEMENT

THE PEST READI DIGITAL TOOLKIT ALLOWS GROWERS TO ASSESS THEIR FARMS AND ENSURE THEY ARE FULLY PREPARED FOR PEST AND DISEASE THREATS.

Australian fruit and vegetable growers will have access to a suite of new digital tools to help them manage the increasing challenge of pests and diseases, currently costing the sector around \$3 billion each year.

A team from CSIRO, Australia's national science agency, has been working on a \$12-million, 5-year collaborative project for Hort Frontiers to develop the new Pest READI (Regionally-Enabled Agroecological Decision Intelligence) tools which they will share for the first time at Hort Connections this week in Adelaide.

CSIRO project lead Dr Hazel Parry said farmers in regional Australia faced a range of challenges when it comes to managing pest and disease outbreaks on their properties.

"We went directly to local communities to understand what changes in pest management they were thinking about and what they needed to make those changes. Reduced reliance on chemicals and the reinforcement of beneficial insect populations that support healthy productive farming environments were top of mind," Dr Parry said.

The Pest READI digital toolkit, which directly responds to what growers said would help them make changes, allows growers to assess their farms and ensure they are fully prepared for pest and disease threats. They include:

- The Pest READI IPM Module in Hort360 - a benchmarking tool that growers can complete to determine how their Integrated Pest Management (IPM) practices weigh up against other growers and develop action plans to improve.
- Pest READI Terrain - a tool to help growers and advisors undertake monitoring and surveillance in their farm landscape.
- Pest READI IPM Advisor - an AI chatbot designed to provide tailored pest management advice.

CSIRO's Dr Tracey Steinrucken who lead stakeholder engagement on the project said Pest READI saw researchers partner with farmers in the NSW Northern Rivers and industry representatives to co-design the tools.

"We were really focussed on getting collective local knowledge and experience from landholders and other stakeholders to build digital tools that would allow farmers to transform the way pests are prepared for and managed at the farm and regional levels," Dr Steinrucken said.

"The Northern Rivers is home to a diverse mix of crops, farms and industries, providing the perfect context to build the toolkit which can be adapted to any horticulture area in Australia."

Project collaborator Growcom's Scott Wallace said the Pest READI IPM Module

that allows growers to benchmark their IPM practices, is a valuable and practical tool for growers and agricultural advisors.

"It's important that management of pests and diseases is seen at the regional level, rather than individual property level, to understand where the most significant risks lie," Mr Wallace said.

"Sustainable Integrated Pest Management starts with informed decisions – only using chemicals when strategically required and exploring other non-chemical options."

Dr Parry said the team had been working with growers from a range of horticultural industries – including macadamia, avocado, berries, banana, coffee, and custard apple – many of whom face the same pest and disease challenges.

Pest READI is funded through Hort Innovation Frontiers with co-investment from CSIRO, Macquarie University, NSW Department of Primary Industries and Regional Development, Queensland Department of Primary Industries, Growcom, Jagun Alliance Aboriginal Corporation and contributions from the Australian Government.

MORE INFORMATION

For more information: research.csiro.au/pestreadi/

SA GRAIN LEGUME PROJECT IMPROVING PULSE AGRONOMY

HIGH GRAIN PRICES, IMPROVED VARIETIES AND AGRONOMIC BENEFITS FOR FARMING SYSTEMS HAVE SEEN PULSE PRODUCTION EXPAND SUBSTANTIALLY ACROSS THE SOUTHERN REGION IN RECENT YEARS.

There is currently an estimated 40 per cent yield gap between average grain legume yields and water-limited yield potential.

The South Australian Research and Development Institute (SARDI), and Adelaide University are overseeing delivery of the GRDC investment ‘Development and extension to close the economic yield gap and maximise farming systems benefits from grain legume production in South Australia’.

Known as the SA Grain Legume Project, it aims to significantly improve growers’ understanding of pulse agronomy across a wide range of South Australian farming systems to address the yield gap using a ‘hub’ and ‘spoke’ model.

SARDI has collaborated with EPAG Research, Field Applied Research (FAR) Australia, Frontier Farming Systems and Trengove Consulting to conduct research trials across SA. SARDI also partnered with Agricultural Innovation and Research Eyre Peninsula (AIR EP), Upper North Farming Systems, Hart Field-Site Group, Mid North High Rainfall Zone Group, Mallee Sustainable Farming and AgCommunicators to manage communications and extension activities.

Since the project began in 2021, more than 155 trials have been run across SA’s cropping regions, including replicated trials as well as demonstration plots. The trials were designed to address issues local to each area and refine agronomic strategies for grain legumes in the different cropping regions.

SARDI Senior Research Scientist and Project Lead Dr Jamal Khan said trials across SA included larger hub sites at Tooligie/Lock, Hart and Loxton and smaller spoke sites at Millicent, Lameroo/Commandook, Melrose, Riverton, Kulpara/Bute, Maitland, Pinnaroo, Kimba, Cummins and Mt Hope.

“The multi-year, multi-location research program has investigated various agronomic management options for

grain legume crops, including diseases and weeds,” Dr Khan said.

“Soil amelioration, including deep ripping and liming, have also been examined, as well as strategies to reduce pod loss.

“Lentil and field pea variety trials were also included to see how these pulses are adapting to expansion on medium to low-rainfall environments.”

Engagement with growers has been a priority throughout the project with events run by project partners providing great learning opportunities between growers, advisers, researchers and technical experts.

Project results have been shared at major field days, crop walks and sticky beak days at field sites across SA.

Findings and insights have also been shared via a range of other events and outputs including GRDC Updates, GRDC GroundCover, fact sheets and podcasts.

MSF Communication and Extension Manager Sarah Day, who manages communication and extension for the project said the hub and spoke sites have been valuable for introducing best-practice principles, as well as refining and demonstrating the benefits and limitations of grain legumes at the local level in each region.

“High rates of engagement is a sign of how keen growers are to see local research supporting adoption of grain legumes and learn about improved practices for closing the yield gap,” she said.

Monitoring the adoption of improved practices has also been integral to the project and was conducted by Meaningful Social Research.

In 2025, focus groups were run with growers to evaluate five of the most promising improved practices identified in the project. These included deep ripping, liming, early sowing, improved

fungicides for beans, and metribuzin-tolerant lentils.

It also helped the project team understand why some practices have been adopted and why some have not.

“For example, even when the potential yield benefits of sowing lentils after deep ripping have been demonstrated, growers are still unsure about sowing lentils into soil disturbed by deep ripping, are concerned about high upfront costs of ripping and want more information on how to manage soil erosion risk,” Ms Day said.

“The research also demonstrated increases in yield and gross margin from early sowing of pulses, but growers still had concerns around frost risk at flowering for early sown faba beans and lentils, uncertainty around rainfall and lack of clarity around which varieties are suited to early sowing.”

“The focus groups help us understand where longer term or larger scale trials are needed to improve grower confidence in adopting improved practices.”

In 2026, the SA grain legume project was extended for a further year with 18 trials this season focusing on pulse nutrition and the legacy effects of soil amelioration and amendments. The project extension aims to develop improved nutrient management strategies for grain legume production in a range of challenging soil types.

MORE INFORMATION

Further project and pulse agronomy information can be found at SA Grain Legume project investment page (<https://grdc.com.au/grdc-investments/investments/investment?code=UOA2105-013RTX>) and Grain Legume Production in South Australia - Mallee Sustainable Farming (<https://msfp.org.au/projects/grain-legume-production-in-south-australia/>)

PRECIOUS DROPS: SMART SPRAYS LIFELINE FOR CROP FARMERS FACING DECLINING RAINFALL

A SPRAY MADE FROM A BIODEGRADABLE POLYMER CAPABLE OF CAPTURING AND REDIRECTING WATER TO CROP SEEDS COULD BE THE KEY TO DROUGHT-PROOFING WESTERN AUSTRALIAN FARMS.

A potential gamechanger for farmers battling declining rainfall, Murdoch University researchers have already demonstrated SMART SPRAYS on WA farms and aim to develop a commercially viable concept over the next few years.

Western Australia is home to a multi-billion-dollar agriculture industry, however, increasing drought due to climate change is wreaking havoc on crops and undermining food security, as well as the livelihoods and mental health of farmers.

Experts from Murdoch University's Bioplastics Innovation Hub said in the Wheatbelt alone, winter rainfall had reduced by 20% over the past 25 years, foreshadowing real concerns about the region's ability to produce vital food crops into the future.

Murdoch University Professor of Soil Microbiology and SMART SPRAYS, Maximising the Benefits from Rainfall project lead Daniel Murphy said

helping farmers better capture rainfall could be hugely beneficial.

"If we can help increase water availability around plant roots, we could assist farmers in boosting crop productivity," Professor Murphy said.

"Our drying climate is already presenting a big challenge for farmers and sadly we know this is only going to get worse."

"There is still more work to do, but SMART SPRAYS are showing potential as helpful innovation for farmers and we're grateful for their interest in this project."

SMART SPRAYS, Maximising the Benefits from Rainfall research officer, Cheryl Rimmer from Murdoch University's Bioplastics Innovation Hub, said climate change was now one of the biggest challenges currently facing



Cheryl Rimmer from Murdoch University's bioplastics-innovation hub demonstrating smart sprays in a field.
Photo Credit: Murdoch University



Western Australian broadacre farmers.

She said the SMART SPRAYS use a polymer derived from naturally occurring bacteria that helps soils capture rainfall that would otherwise be lost due to evaporation.

"WA produces about 45% of Australia's wheat, and if we do get the declining rainfall duration and intensity that is predicted in the future, we potentially won't be able to produce wheat," she said.

"The substance used in the SMART SPRAYS naturally repels water. So, we're using those characteristics to form a spray to allow the rainwater to roll down the mound into the furrow."

Samantha Viljoen, a PhD student at Murdoch University's Bioplastics Innovation Hub, said the spray was completely biodegradable.

"They're from a natural product and we're just harnessing nature's ability," she said.



“We are not putting any synthetic plastics into the soil, leaving no lasting legacy of microplastics or any chemical additives that are traditionally found in plastic mulches.”

Quarry Farms principal farmer Andrew Crook said producers needed to maximise every millimetre of precious rain that fell on their fields.

“Statistically, as most people would know, we are receiving less winter rainfall and more summer rainfall,” he said.

“The challenge has been how to harvest that summer rainfall event and store that moisture to make up the deterioration in winter rainfall, particularly in that transition spring-autumn period, where you’re changing from summer to winter and the ideal time to plant our crops.

“That was a big challenge, adjusting all of those to better make use of rainfall events.”

Led by Murdoch University, the SMART SPRAYS, Maximising the Benefits from Rainfall project was supported by the Growers Group Alliance’s South-West WA Drought Resilience Adoption and Innovation Hub (SW WA Hub), through funding from the Australian Government’s Future Drought Fund, the WA Agricultural Research Collaboration (WAARC) and Murdoch University. This funding allowed the team to demonstrate the concept to farmers and confirmed their interest in the project.

Tanya Kilminster from the SW WA Hub said the SMART SPRAYS had the potential to be transformative for farmers.

“We’ve dropped nearly 20% of our winter rainfall in just this region alone in the last 25 years. So, if we’ve got

technology or an innovation that can harvest more water and reduce evaporation to get the seeding bed right to grow more plants, biomass, and then yield, that’s a winner,” she said.

Now that the demonstration phase is complete, Murdoch University researchers, with support from the Grains Research and Development Corporation (GRDC), will begin developing a commercially viable product that can be made available to broadacre farmers.

MORE INFORMATION

Visit: <https://www.murdoch.edu.au/>

KEY CULPRIT NAMED BUT NO QUICK FIX FOR ALMOND TREE DECLINE



Researcher Brittany Oswald during sampling in an almond orchard. Photo Credit: The University of Queensland



Gumming on the trunk of a mature almond tree caused by a Phytophthora infection. (Photo credit: Brittany Oswald)

RESEARCHERS HAVE IDENTIFIED AN AGGRESSIVE PATHOGEN CONTRIBUTING TO THE WIDESPREAD TREE DEATH AND PRODUCTION LOSSES IN ALMOND ORCHARDS ACROSS AUSTRALIA.

PhD candidate and plant pathologist, Brittany Oswald at The University of Queensland's Queensland Alliance for Agriculture and Food Innovation said while multiple pathogens were causing root and trunk rot, one soilborne pathogen was a more significant problem.

"Phytophthora became a major focus for us once we started sampling," Ms Oswald said.

"It's extremely aggressive, attacking the roots, weakening the tree and even killing it within a year or 2."

Initial orchard surveys for the national Almond Integrated Disease Management project found fungal trunk diseases *Botryosphaeria* cankers were widespread but not as severe as *Phytophthora*.

Symptoms caused by the pathogens include branch dieback, trees oozing sap and large patches of dead trees in orchards with no clear explanation.

Ms Oswald said the challenge for growers was the disease causing the greatest impact changed year to year and region to region.

"After flooding in late 2022, *Phytophthora* dominated," she said.

"More recently, we're seeing a resurgence of branch dieback caused by the fungal trunk diseases, so there is no one-size-fits-all solution."

The research has also showed management strategies effective against one disease can worsen another.

"Reducing irrigation can lead to fewer fungal infections but more severe *Phytophthora*," Ms Oswald said.

"That's why a blanket recommendation like reducing irrigation by 25 per cent can backfire."

Ms Oswald said prevention would be critical to mitigate future losses, particularly as the industry continued to expand.

"One of the biggest opportunities is stopping these diseases from entering orchards in the first place," she said.

"We need to understand whether pathogens are already present in young nursery trees before they're planted.

"If we could identify infected trees before they reach the orchard, we could potentially prevent new disease introductions right at the start.

"Our work has highlighted key areas

and provided the industry with a much stronger foundation.

"We are now considering an integrated approach to managing trunk diseases that could lead to changes in practice.

"Targeted solutions to ensure the long-term sustainability of the almond industry are a critical component of future research."

COLLABORATION AND ACKNOWLEDGEMENTS

This research is funded by Hort Innovation, using the Almond Fund research and development levy, and contributions from the Australian Government. It is led by Agriculture Victoria with support from South Australian Research and Development Institute and The University of Queensland for the PhD study.

Hort Innovation is a not-for-profit, grower-owned company that advances Australia's \$17 billion horticulture industry by investing in research and development, marketing and trade to build a prosperous and sustainable future for growers. 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.uq.edu.au



NEW EXTENSION PROGRAM TO DELIVER PRACTICAL, ON-FARM SUPPORT FOR BANANA GROWERS

AUSTRALIAN BANANA GROWERS NATIONWIDE ARE SET TO BENEFIT FROM A NEW PROJECT PRIORITISING PRACTICAL, ON-FARM SUPPORT TO LIFT PRODUCTIVITY, PROFITABILITY AND SUSTAINABILITY.

Funded by Hort Innovation and delivered by the Queensland Department of Primary Industries (QDPI), the project will deliver an industry-led extension program across all growing regions, helping growers adopt proven practices.

Anthony Kachenko, General Manager of Sustainability and Production R&D at Hort Innovation, expressed how the program provides practical support as the industry navigates increasing production, market and sustainability challenges.

“This project is about working alongside growers to help them apply tested research and development findings in ways that make sense for their individual farms,” said Mr Kachenko.

“By providing direct support, local demonstrations and clear information, this program will help growers make confident changes to improve performance and profitability on farm.”

The extension program will include on-farm innovation trials designed to test how practices perform under commercial conditions. Trial topics will be guided by industry to ensure they address priority issues growers are confronted with.

Stephen Lowe, banana grower and Deputy Chair of the Australian Banana Growers' Council, said extension plays a critical role in helping growers turn information into action on farm.

“Extension is a critical part of modern farming. While there’s a wealth of information available on pest, disease and nutrition, there’s no substitute for face-to-face support from experienced extension officers,” said Mr Lowe.

Outcomes from extension activities and demonstration trials will be shared widely through industry publications, events and online platforms, such as Better Bananas (<https://betterbananas.com.au/>). This approach ensures learnings are accessible to the broader banana industry and support the wider adoption of best management practices.

If you would like to see a previous iteration of the program, please refer to: National banana development and extension program (BA19004). (<https://www.horticulture.com.au/information-hub/our-projects/project-reports/ba19004>)

This project (BA25001) is funded by Hort Innovation, using the banana research and development levy and contributions from the Australian Government.

MORE INFORMATION

Visit: <https://www.horticulture.com.au/>



TOMATOES GET FLAVOUR BOOST FROM GREEN BIN COMPOST

COMMERCIALY-FARMED TOMATOES TASTE SWEETER WHEN FOOD AND GARDEN WASTE COMPOST IS ADDED TO THEIR SOIL, A UNIVERSITY OF QUEENSLAND STUDY HAS FOUND.

Researchers in the School of Agriculture and Food Sustainability grew tomatoes in South East Queensland with and without the compost and put the resulting crops through chemical and sensory analysis.

Dr Nicole Robinson said the results delivered scientific evidence that food organics and garden organics (FOGO) compost improved food quality.

“Previous studies looked at the impact of FOGO compost on crop yield but hadn’t considered consumer preferences in taste, visual appeal and smell,” Dr Robinson said.

“In our tests, tomatoes grown with FOGO were more closely associated with positive eating-quality descriptors while the others were more frequently associated with less desirable appearance or flavour attributes, particularly after storage.”

Groups of volunteers examined, smelt and tasted both groups of farm-grown tomatoes (*Solanum lycopersicum* cv. Ninja), firstly 5 days after picking and then after they’d been in storage for a further week.

Dr Robinson said the time gap mimics the supply chain a tomato travels along between farm, shop and dinner plate.

“The tomatoes achieved similar ratings at the first sensory analysis but by the second round the FOGO tomatoes were

twice as likely to be identified as sweet than the control tomatoes, which were described as bland,” she said.

“The FOGO tomatoes were also described as looking better with a more pleasant smell.

“The standard tomatoes were more often described as being pale and lacking in aroma which are common criticisms of commercial tomatoes when compared with historic or homegrown fruit.”

The chemical analysis confirmed a higher sugar-related content in the FOGO tomatoes and reduced malic acid which can contribute to sourness.

By the second round of testing after storage, the analysis showed the FOGO tomatoes had higher levels of the amino acids which contribute to savoury or umami tastes.

Dr Robinson said incorporating FOGO in food production aligns with Australia’s National Food Waste Strategy.

“Keeping organic waste out of landfill where it creates greenhouse gases and using it to grow better food is a win for the environment and us,” Dr Robinson said.

“We sourced the FOGO compost from a commercial supplier who makes it from green bin waste from homes and businesses.

“It was incorporated into the soil for half the crop, and both groups were otherwise grown under exactly the same commercial production conditions in the ground, then handled the same at picking, transport and storage.

“While there was no noticeable difference in yield or the size and look of the tomatoes at harvest, the chemical and sensory analysis shows FOGO can give a producer an edge through a better flavoured and looking product by the time it reaches consumers.”

Food chemist Dr Marlice Bekker led the chemical analysis, with UQ student Jia Wang also contributing.

COLLABORATION AND ACKNOWLEDGEMENTS

This work has been supported by the End Food Waste Cooperative Research Centre whose activities are funded by the Australian Government’s Cooperative Research Centre Program.

MORE INFORMATION

Visit: <https://uq.edu.au/>
Read the research in npj science of food here: <https://www.nature.com/articles/s41538-026-00907-3>

EXPAND YOUR KNOWLEDGE WITH THE AUSTRALIAN AGRONOMIST MAGAZINE.

The Australian Agronomist is the only agronomy publication of its kind, ensuring agronomists and consultants across all industry sectors stay up to date with the latest information and news.

SCAN
BELOW TO
SUBSCRIBE



SUBSCRIPTION OPTIONS

MAIL

Fortuna Villa, 22 Chum Street,
Golden Square VIC 3555 Australia

EMAIL

info@theaustralianagronomist.com

ONLINE

www.theaustralianagronomist.com

**YOU
COULD WIN
A GIFT PACK
OF ELLIS WINES
FROM HEATHCOTE
SUBSCRIBE
TODAY!**



Subscribe today for only

\$65 for 4 issues \$110 for 8 issues

(1 year subscription)

(2 year subscription)

Personal details

Name

Address

Postcode

Telephone

Email

Payment:

☐ PAYPAL Subscribe online via our website

☐ CHEQUE To be made out to Regional Reach Pty Ltd

☐ CREDIT CARD Please fill in the details below:

☐ VISA

☐ MASTERCARD

Expiry Date: /

Card Number:

Security Code (CVC): last three digits on signature strip

Number of issues:

☐ **\$65** - 4 issues

☐ **\$110** - 8 issues

TERMS AND CONDITIONS: Your subscription will start with the next available issue. You will receive either 4 or 8 issues. Minimum term of 12 months.

HOW 9000 PHOTOS BUILT THE FOUNDATION FOR AI-DRIVEN CROP DISEASE DETECTION

A BREAKTHROUGH IN AI-DRIVEN CROP DISEASE DETECTION IS SET TO REDUCE HARVEST LOSSES AND CHEMICAL-RELATED HEALTH RISKS THANKS TO A FIRST-OF-ITS-KIND TOMATO LEAF DATASET COMPRISING ALMOST 9000 IMAGES OF TOMATO IMAGES.

The Sri Lankan In-Field Tomato (SLIF-Tomato) dataset – built by academics from Charles Darwin University (CDU), the University of Peradeniya (UoP), and more – is the first complete in-field dataset comprising class labels and bounding box annotations collected under diverse real-world conditions.

The dataset includes 890 raw photos of tomato leaves featuring eight classes, healthy and seven diseases – bacterial spot, early blight, mosaic, powdery mildew, septoria, wilt, and late blight – which were then augmented through two phases to produce a total of 8,934 images.

The images are then assessed using an AI algorithm called Inverted Residual Convolutional Block Attention Module (IR-CBAM) that tells the AI scanners what to focus on reducing the complexity of the image.

Research supervisor Dr Thuseethan Selvarajah, a CDU Lecturer in Information Technology, said the technology taught AI-based disease recognition models to focus like a trained eye, as opposed to scanning every part of an image equally.

“First, it figures out what kind of clues matter most such as colour, texture, and edges, and turns up the focus on those,” Dr Selvarajah said.

“Then, it figures out where in the photo to look, zooming in on the actual diseased spot and ignoring soil, shadows, and background leaves. It does this in a lightweight, efficient way so it can still run fast on things like phones.

“This matters because field photos are

messy. Unlike clean lab images, they're full of background clutter. Teaching the model to filter out the noise and focus on the disease itself is exactly why accuracy improved significantly.”

The dataset allows farmers to detect diseases in their crops early and with more than 99 per cent accuracy. Previous studies indicated this was only achievable in controlled settings.

Sri Lanka's tomato yield averaged 18.9 tons per hectare as of 2018, contributing to national income and export revenue. It also generates employment, boosts household income, and supports national nutrition.

UoP PhD candidate and study lead author Romiyal George said undetected or misdiagnosed tomato leaf diseases cause substantial yield losses, while excessive chemical use posed risks to human health and the environment.

Mr Romiyal said traditional disease detection often depended on manual inspection from farmers or agricultural experts, a time-consuming process that could delay treatment decisions and result in profit losses.

“The lightweight AI models developed in this research can enable rapid disease identification using resource-constrained devices such as mobile phones or embedded systems,” he said.

“This can reduce dependency on continuous expert support, minimize crop losses through early detection, and help farmers apply treatments more efficiently.

“In the long term, this technology can contribute to precision agriculture by



Dr Thuseethan Selvarajah, a CDU Lecturer in Information Technology, said the technology taught AI-based disease recognition models to focus like a trained eye. Photo Credit: Charles Darwin University

enabling data-driven decision-making and more sustainable use of agricultural resources.”

Mr Romiyal said the next step was taking their findings from a research setting to the real world for deployment and expanding the available datasets to include a broader range of crops and diseases.

He said AI had a major role to play in the future of agriculture.

“This research is a step towards bridging the gap between advanced AI technologies and practical agricultural applications,” Mr Romiyal said.

“By combining lightweight deep learning models with realistic field data, we can move closer to creating affordable and sustainable solutions that benefit farming communities, particularly in regions where access to agricultural expertise is limited.”

MORE INFORMATION

Visit: <https://www.cdu.edu.au/>

Published in Neural Computing and Applications journal, this research supports Australia's agricultural innovation priorities through AI-based crop disease detection, improved productivity, and enhanced biosecurity.



KEY POINTS

- Regulatory dossiers for Replexor Active submitted in Brazil and Australia; US and Argentina to follow in 2027
- Rounding out weed control spectrum, Replexor Active strengthens integrated PPO herbicide portfolio, helping growers maximize the value of their weed management programs
- Start of Replexor Active's registration marks another sign of strong crop protection innovation pipeline of Replexor Active's registration marks another sign of strong crop protection innovation pipeline

BASF AGRICULTURAL SOLUTIONS STARTS GLOBAL REGISTRATION OF NOVEL PPO HERBICIDE REPLEXOR™ ACTIVE

BASF AGRICULTURAL SOLUTIONS HAS BEGUN THE REGISTRATION PROCESS FOR REPLEXOR™ ACTIVE (FENDIOXYPYRACIL), A NOVEL HERBICIDE ACTIVE INGREDIENT FROM ITS PROTOPORPHYRINOGEN OXIDASE (PPO) INNOVATION PIPELINE WITH BROAD-SPECTRUM ACTIVITY ON BOTH BROADLEAF WEEDS AND GRASSES.

At peak adoption, Replexor Active could support weed management programs covering more than 50 million hectares globally. First regulatory dossiers are being submitted in Brazil and Australia in July 2026, with filings in the United States and Argentina planned for 2027. Pending approvals, BASF targets first market introductions of Replexor Active around 2030.

Herbicide-resistant weeds are a growing challenge for farmers of major crops such as soybean, corn, and cotton. At the same time, regulatory pressure is reducing the number of available active ingredients, further limiting effective control options.

In this context, PPO herbicides have been a reliable cornerstone of resistance management for more than 50 years. With Replexor Active, BASF extends that portfolio – which includes Kixor® Active and Tirexor® Active – with a new level of weed control. While most existing PPO herbicides primarily target broadleaf weeds, Replexor Active also controls key annual grasses such as Eleusine indica, Echinochloa spp., and Setaria spp. With PPO resistance in grasses remaining rare, Replexor Active adds a valuable new option for managing resistant grass weeds. “Replexor Active fills a genuine gap in the PPO space,” said Maximilian Becker, Member of the Management Board of BASF

Agricultural Solutions, in charge of Business. “Growers have had very few new tools for resistant grasses in recent years. Replexor Active addresses that directly and fits into the resistance management programs growers are already building with our PPO portfolio.”

In addition to its broad-spectrum activity, Replexor Active offers compelling benefits: it delivers fast-acting weed control and enables no-till farming practices, helping to minimize soil erosion. Furthermore, it is effective at low use rates, making it easier to handle while reducing the amount of active ingredient per hectare.

“The start of Replexor Active’s registration process is another sign of our strong innovation pipeline,” added Melanie Bausen-Wiens Member of the Management Board of BASF Agricultural Solutions, in charge of Technology. “It reflects our position as a leading player in crop protection and our ability to translate sustained R&D investment into new tools that address real challenges for growers. And with the PPO herbicide-tolerant traits we are developing, growers will have even more flexibility in how and when they apply Replexor Active.”

MORE INFORMATION

Visit: <https://agriculture.basf.com/au/en>

RESEARCHERS DEMONSTRATE THE POTENTIAL OF PANGENOME-GUIDED BREEDING FOR HIGHER YIELDS AND ADAPTABILITY

SCIENTISTS FROM THE CENTRE FOR CROP AND FOOD INNOVATION HAVE PARTICIPATED IN A LANDMARK PROOF-OF-CONCEPT RESEARCH PROJECT SHOWING HOW PANGENOME-GUIDED BREEDING STRATEGIES CAN REUNITE TWO TRAITS THAT ARE USUALLY TRADE-OFFS - STRESS TOLERANCE AND YIELD.

In a new study published in *Cell*, the international research team, led by the Chinese Academy of Agricultural Science and spanning 22 research institutions across 10 countries, has shown that building a pangenome enables breeders to identify and reintroduce beneficial genes and structural DNA variants that were lost when crops were first domesticated.

As a proof of concept, they produced a candidate breeding line of Tartary Buckwheat that includes beneficial alleles from wild species and landraces that both withstand high-altitude stress and produce larger seeds.

In general, genomics-assisted breeding relies heavily on single-nucleotide polymorphisms (SNPs) measured against a single reference genome. That approach is largely blind to structural variation, which can have large effects on traits. Because domestication tended to discard genes useful only in the wildest environments, many beneficial variants survive today only in a crop's wild relatives.

In the study, the team assembled a graph-based pangenome from 16 genomes and catalogued 123,131 structural variants across the species. The pangenome revealed a wild-specific gene that enhances high-altitude adaptability and a specific genetic area that contributes to seed-size variation across wild buckwheat and landraces. Leveraging these superior traits, they developed buckwheat lines with enhanced high-altitude adaptability and improved yields across test sites.

The authors describe the result as a generalisable strategy for integrating beneficial alleles, including copy-number variants, from both wild relatives and local landraces to accelerate elite crop improvement. Given that all major crops have wild relatives and landraces holding variation that single-reference approaches overlook, the researchers argue that the method transfers well beyond the crop they tested.

In a statement, CCFI Director and co-corresponding author of the study, Professor Rajeev Varshney FRS FAA, explained:

“Most modern breeding compares a crop's genome against a single reference, which is like judging a language by a single dictionary. A pangenome captures the whole vocabulary, including the words a crop lost along the way. And that's where a lot of the useful genetics for resilience is hiding.”

“Resilience and yield are usually a trade-off, meaning that when you increase one, you lose the other. What the pangenome lets us do is identify the specific DNA segments underlying each trait and deliberately stack them. That's a template other breeding programmes can follow,” he said.

The team chose Tartary buckwheat (*Fagopyrum tataricum*), a hardy, nutrient-dense grain native to the Himalayas and important for food security in high-altitude communities, because its wild relatives survive conditions, including intense UV-B radiation and cold, that most crops cannot.

They then built a gap-free (telomere-to-telomere) reference genome, integrated genetic data from 994 accessions across 15 countries, and assembled a 16-genome pangenome spanning wild Himalayan populations and globally distributed landraces.

The pangenome revealed a gene, *FtRNH*, present in high-altitude wild plants but absent from all cultivated varieties, that helps plants repair UV-B-induced DNA damage. It also pinpointed a second locus, *FtPLATZ*, where extra

gene copies and a small promoter insertion are linked to larger seeds. By crossing these variants together and using marker-assisted selection, the team produced a stacked candidate line carrying both the wild stress-adaptation gene and the large-seed variants. In high-altitude field trials, it showed better growth and significantly higher yield than the standard variety while also producing larger seeds.

Murdoch University Deputy Vice Chancellor Research and Innovation, Professor Peter Eastwood, said:

“This is a landmark study that demonstrates how data-led breeding strategies can be applied to major staple crop breeding programs to deliver varieties tailored to specific growing conditions. What's most important is the applicability of this approach to crops bred in regions where food-security pressure is greatest, and I look forward to seeing this strategy applied in other CCFI-led projects in Australia and abroad. My congratulations to all the authors for this important piece of research.”

Murdoch University Pro-Vice Chancellor, Professor Peter Davies, added:

“CCFI researchers continue to lead the way for genomics-led research that improves grower profitability and food security. But more than that, it's fantastic to see the team go beyond the delivery of genomics resources and establish a replicable, evidence-based breeding strategy that breeders can adopt.”

MORE INFORMATION

Visit: <https://www.murdoch.edu.au/>

Note: The full study and implications of the *Cell* paper: Pangenome-guided breeding restores high-altitude adaptation and improves yield in Tartary buckwheat can be read at [https://www.cell.com/cell/abstract/S0092-8674\(26\)00867-6](https://www.cell.com/cell/abstract/S0092-8674(26)00867-6)

FOOD AGILITY CONGRESS 2026

WHY SHOULD YOU ATTEND?



JOIN THE PEOPLE SHAPING THE FUTURE OF AUSTRALIA'S AGRIFOOD INDUSTRY.

The Food Agility Congress is more than a celebration of a decade of impact. It's a unique opportunity to connect with the innovators, researchers, industry leaders and decision-makers driving transformation across the agrifood sector.

Reflect on what we've achieved together through more than 60 research projects and 120 industry and research partners, and discover the lessons, breakthroughs and innovations that are creating real-world impact across the country.

Hear directly from the people behind our most successful initiatives. Learn what worked, what didn't, and what it takes to turn ambitious ideas into lasting change.

Whether you're looking to expand your network, uncover new opportunities, or gain insights into the latest research and industry trends, our Congress brings together the people best placed to help you navigate the challenges and opportunities ahead.

You'll connect with leaders from industry, government, research and our growing community of HDR alumni, building relationships that can spark future collaborations and career opportunities.

And while we'll celebrate a decade of achievement, our focus is firmly on the future. Together, we'll explore the next wave of innovation, identify emerging opportunities, and forge the partnerships needed to create a more productive, sustainable and resilient agrifood sector.

Don't miss your chance to be part of the conversation that will help shape the next decade of agrifood innovation. Secure your ticket today.

MORE INFORMATION

Visit: <https://events.humanitix.com/food-agility-congress>

NEW TRIALS TO BOOST EMERGING HEMP INDUSTRY

The Malinauskas Government is investing \$500,000 to support industrial hemp production in South Australia through new trials and industry support grants.

Industrial hemp is a Cannabis genus plant that is distinct from medicinal and illicit cannabis due to its low-tetrahydrocannabinol (THC) levels – less than one per cent.

Importantly, the fibre, pulp, seed and oil from this crop can be used to produce a wide range of goods, including:

- Industrial and consumer textiles
- Paper and building materials
- Cosmetics
- Food products

The Weatherill Labor Government legalised industrial hemp in South Australia as a regulated industry from 2017,

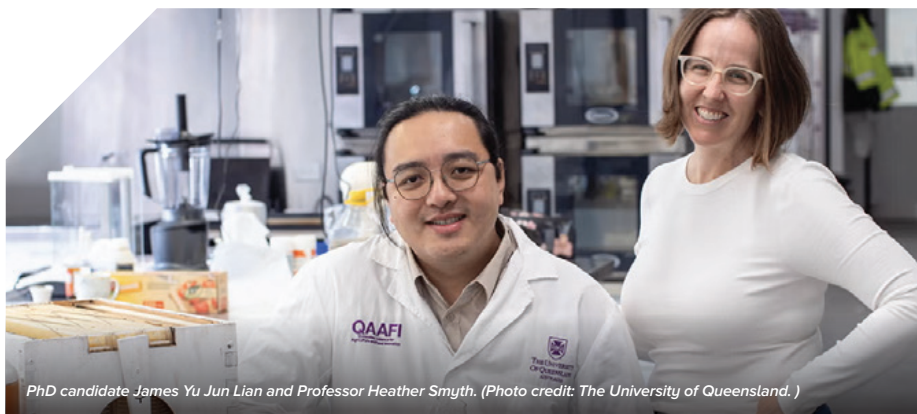
establishing a licencing scheme for cultivation, processing and research. Since then, trials held in the Riverland and Limestone Coast identified the latter region as particularly suitable for growing industrial hemp.

As part of the Malinauskas Government's new \$500,000 investment in the industry, new trials will be conducted to identify hemp varieties with low water requirements, potentially enabling it to be more widely grown in South Australia, including the Riverland.

A portion of the investment will also be provided to industrial hemp producers in the form of small grants to help fund infrastructure costs.

MORE INFORMATION

Visit: <https://pir.sa.gov.au/>



PhD candidate James Yu Jun Lian and Professor Heather Smyth. (Photo credit: The University of Queensland.)



(Photo credit: The University of Queensland.)

IS GENTLE HANDLING THE KEY TO BETTER TASTING HONEY?

RESEARCH AT THE UNIVERSITY OF QUEENSLAND IS DETERMINING WHETHER THE WAY HONEY IS HARVESTED AND STORED CAN AFFECT THE TASTE AND QUALITY OF THE PRODUCT.

Queensland Alliance for Agriculture and Food Innovation PhD candidate James Yu Jun Lian said his work aimed to safeguard the future of premium Australian honeys.

“This is the first detailed look at how gentle extraction may preserve Australia’s unique botanical flavours,” Mr Lian said.

“It opens the door to defining what freshness means in honey, which is something the industry has never formally measured.”

The research compared honey from 3 locations across South East Queensland and Northern New South Wales using 2 extraction methods – the traditional Langstroth hive and the Australian made Flow Hive – followed by commercial processing.

“The processes used for the past century with the Langstroth hive expose honey to heat, oxygenation and vibrations,” Mr Lian said.

“Heating and spinning honey to extract it from the frames means different honeys can become similar in flavour, rather than distinctive.

“Those processes can damage the beautiful botanical notes that give

Australian honeys a unique bouquet, thus reducing their intrinsic value.

“The Flow Hive minimises any disturbance to the hive while allowing the honey to flow naturally with no extra heat and minimal agitation.”

Mr Lian said honeys extracted from the Flow Hive had a lighter colour and lower levels of hydroxymethylfurfural or HMF, a compound used to measure the quality of heat exposure of honey.

“Lower HMF and lighter colour signals reduced chemical damage to the honey,” Mr Lian said.

“We’ve also compared the aroma and flavour of heated and aged honeys, which became more caramelised and medicinal in taste, proving that heat and oxygen detrimentally affected their flavour.”

Sensory scientist Professor Heather Smyth said work was underway to find ways to show and measure a honey had been damaged.

“There’s huge interest globally in understanding honey freshness and how different processing methods influence quality,” Professor Smyth said.

“Honey lacks the well developed freshness metrics found in industries like wine and coffee and this work is helping establish those foundations.

“This includes things like the colour, texture and physical properties of the honey but also its composition in terms of sugar content and flavour.

“Odour compounds can tell us

something has been bruised or damaged, like the acetaldehyde note of a bruised apple tells us something has been lost.”

The team plans to track how honey changes post-harvest, aiming to pinpoint when key quality shifts occur and how different extraction methods can influence flavour, aroma and texture.

“We want to take advantage of the varieties of boutique Australian honeys compared to other countries and open opportunities for high value gastronomic applications,” Mr Lian said.

“Our honeys should be valued for their unique aroma profiles and the flavour linked to our native plants.”

COLLABORATION AND ACKNOWLEDGEMENTS

This research was supported by the Australian Government Research Training Program tuition fee scholarship and funded by the Australian Research Council Industrial Transformation Training Centre for Uniquely Australian Foods, UQ and Beeinventive.

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.uq.edu.au

STRATEGIC THINKING NEEDED FOR AUSTRALIAN MELON INDUSTRY

AUSTRALIA'S MELON INDUSTRY IS GRAPPLING WITH A MIX OF MARKET VOLATILITY, WEATHER DISRUPTIONS AND RISING COSTS, BUT ACCORDING TO MELONS AUSTRALIA CHIEF EXECUTIVE JOHNATHON DAVEY, THE SECTOR IS ALSO BEGINNING TO THINK MORE STRATEGICALLY ABOUT ITS FUTURE.



"We've got weather conditions that are throwing out supply channels and seeing a really frantic boom-and-bust market in operation at the moment, which is giving no one certainty and is making people really consider what they do and where they go in the future," he says.

Davey says growers are facing pressure from several directions at once. Weather remains a major factor, but it is far from the only challenge.

"It's weather-related, it's disruption with the Middle East crisis, it's the strengthening of the Aussie dollar against the yen. That's putting pressure on exports to Japan," he says. "There are shortages in plastic mulch and drip tape to actually set up to grow crops, there's this ever-increasing burden of compliance and input costs. People just aren't making a dollar growing fresh produce."

The stronger Australian dollar has made exports less competitive, resulting in more produce being directed back into the domestic market.

"That in turn is seeing more produce in the local market and an oversupply at times, which just drives the market price down even further," Davey says.

Rather than offering quick fixes, Davey says the industry is working through a broader strategic process aimed at giving growers greater certainty.

"We've been working with our industry around the creation of a new strategy.

Where do we want to go and what do we want to do and what work are we going to do to make that possible?" he says.

That discussion will continue at the industry's October conference. "We will have people sitting around the table working through what the priorities are, what can we do, and how do we as an industry emerge from the position where we are now.

"Whether that is marketing and promotions, tighter reins on how much we're producing, when we're producing it, and a more coordinated approach to the industry in general, whether that's local supply, export or otherwise, we'll need to make sure that those are decisions based on data."

One area attracting increasing attention is traceability. Davey believes the melon industry can learn from sectors such as citrus and table grapes, where products can often be tracked more effectively through the supply chain.

"I think the whole concept of fruit going into the open market and then no real traceability as to where it goes from then creates a real barrier for us in terms of a clear understanding of what is and isn't possible," he says.

Branding presents another challenge, particularly for watermelon, which is frequently processed before reaching consumers.

"When you look at watermelon as a line, 80-odd percent of it goes into

retail and is cut into quarters," Davey says. "How do you brand something that's going to be processed when it hits the retail shelf?"

The industry has already experimented with solutions. A 2023 trial used QR-coded labels designed to maintain traceability after fruit was cut and repackaged.

"That did give traceability through, and the numbers and feedback we got were great, but the sheer cost behind bringing that to life was not something that was going to be viable moving forward," he says.

Despite the challenges, Davey remains focused on opportunities to grow demand and strengthen the industry's position.

"We're looking towards driving consumption and giving our growers the confidence that there is still a food security story but also a consumer demand for melons," he says. "There's three or four pieces of work that we are considering, to occur side by side, and this is something that we haven't really done as an industry before."

For Davey, the future lies in better coordination, stronger consumer engagement and more informed decision-making. In an environment shaped by weather, global events and rising costs, he believes a more strategic approach will be essential if the Australian melon industry is to thrive.

MORE INFORMATION

Visit: www.melonsaustralia.org.au



Pictured shows the control provided by a tank-mix application of Priority® and Quadrant® post-emergent herbicides in an ADAMA Australia trial near Roseworthy in SA. Photo Credit: ADAMA

GROWERS TURN TO TANK MIX PARTNER FOR IMPROVED BROADLEAF WEED CONTROL

HERBICIDE TANK MIX PARTNERS DESIGNED TO BOOST CONTROL OF TREATMENTS AGAINST WEEDS ARE BECOMING A STRONGER OPTION FOR MANY GROWERS TO HELP MANAGE DIFFICULT POPULATIONS.

HERBICIDE tank mix partners designed to boost control of treatments against weeds are becoming a stronger option for many growers to help manage difficult populations.

One of the more powerful tank mix partners emerging in recent seasons, providing significantly improved broadleaf weed control from a range of herbicides in cereal crops, is the Group 2 post-emergent herbicide, Priority®, from ADAMA Australia.

Priority is a flexible and cost-effective tank mix partner that is helping to broaden the control of broadleaf weeds, as well as volunteer pulses and canola, and it is being praised by growers, particularly on hard-to-control weeds.

ADAMA Australia Portfolio Manager – Herbicides, Rob Walker, said Priority was an ideal choice in tank mixtures to improve the weed spectrum, targeting more than 60 broadleaf weeds depending on the tank-mix partner utilised, and to control volunteer canola and non-imidazoline tolerant varieties of canola. Importantly, it also offered excellent crop safety and allayed residue concerns in oaten hay and following crops and pastures.

Priority contains florasulam, an acetolactate synthase (ALS) inhibitor, in a suspension concentrate formulation and once absorbed via weed foliage, it is translocated to the growing points via the xylem and phloem.

“An important benefit of florasulam is that it does not bind to stubble or plant material and has a relatively

short half-life in the soil. Reduced soil residual enables greater flexibility for rotation crop options compared with other Group 2 herbicides such as metsulfuron or clopyralid (Group 4),” Rob said.

Priority is effective against susceptible weeds from the two to eight-leaf stage, depending on the weed species and/or weed size.

It can be applied with registered tank mix partners including LVE MCPA 570, Marathon®, Triathlon®, Picoflex®, MCPA 750, Quadrant®, Zulu® XT, 2,4-D Amine, 2,4-D Ester, Flagship™ 400 and Bronco® MA-X between the three and flag leaf crop stages (GS13-37).

Steve Fischer, Market Development

Manager with ADAMA Australia in Victoria, said Priority had shown strong capability to be mixed with various herbicides for improved control of key broadleaf weeds in cereals, including volunteer pulses, wild radish and other brassica weeds.

“Priority can now be applied in a tank mix with Affinity® Force and MCPA 750 herbicides without a wetter. This mix also can be used to target the difficult bifora weed, which is more prevalent around Horsham, as can new tank mixes with Quadrant® and Triathlon® herbicides,” Steve said.

Paul Castor, with Northern New South Wales and Southern Queensland consultancy group, Michael Castor and Associates (MCA), said the scheduled use of residual herbicides had become a critical component of fallow weed management in the region.

“This has provided much better management of fallow weeds with resistance to key fallow knockdown herbicides. However, fallow residuals will never manage the full spectrum of fallow weeds. One key weed group which is not well managed with fallow residuals is volunteer legumes. Chickpeas are our most common grain legume, but growers can also be chasing volunteers of faba bean and mungbean,” Paul said.

“Traditionally, metsulfuron herbicide mixtures have been used for management of volunteer legumes. However, it can hang around on our high pH soils, particularly in dry conditions, and that can create problems with re-cropping

intervals. Summer crops have particularly long re-cropping intervals following the use of metsulfuron. It can throw things out of whack.”

He said the industry had needed fallow herbicide options with shorter residual control than metsulfuron and it had fortunately arrived in the form of the tank-mix partner, Priority, which had proved ideal in mixes with glyphosate and fluroxypyr.

“It offers a nice weed control spectrum, it works well with fluroxypyr for other weeds, we know it’s very active on volunteer legumes and it’s a lot easier to use than other herbicides over summer.”

“It also mixes well with glyphosate and does not impact glyphosate activity on other target weeds.”

Paul said Priority also had provided another option to reduce the use of phenoxy herbicides in northern fallow knockdown programs.

“Off-target drift of phenoxy is a particular concern over summer in cotton growing regions.”

He said in winter cereal crops, Priority was increasingly being used with picloram and MCPA herbicide applications.

“Sowthistle is a key target and metsulfuron was previously used in these mixes to broaden the weed control spectrum, however varietal crop tolerance work has shown it can be risky. Priority, however, appears safer to use in-crop, as well as having the much shorter period for re-cropping.”

Jim O’Connor, Market Development Manager with ADAMA Australia in Southern Queensland, said in winter

cereals, post-emergent tank mixes of LVE MCPA and Priority, and in some cases Picoflex® (picloram) or Flagship™ (fluroxypyr), also were targeting brassica weeds as well as volunteer pulses.

“Priority is good on radish and turnips and the control spectrum also includes Mexican poppy, climbing buckwheat and sowthistle. We don’t have much Group 2-resistant wild radish, so Priority has very good efficacy on these weeds, however we still have to carefully manage our Group 2 applications,” Jim said.

He said Priority was an ideal spike with LVE MCPA tank mixes to broaden the weed control spectrum without compromising plantback flexibility.

“LVE MCPA and Picoflex is a popular mix where growers also may be comfortable with the plantback – and Priority won’t alter that. If growers are conscious of re-cropping intervals and the ability for double cropping, Priority is a great fit with their post-emergent herbicide mixes.”

MORE INFORMATION

For further information on the use of Priority post-emergent herbicide as a tank-mix partner against broadleaf weeds in cereal crops, growers can contact their local ADAMA Australia representative or visit ADAMA.com.



ADAMA Australia Portfolio Manager – Herbicides, Rob Walker, said Priority was an ideal choice in tank mixtures to improve the weed spectrum, targeting more than 60 broadleaf weeds depending on the tank-mix partner utilised, and to control volunteer pulses and non-imidazoline tolerant varieties of canola. Photo Credit: ADAMA



Steve Fischer, Market Development Manager with ADAMA Australia in Victoria. Photo Credit: ADAMA



Jim O'Connor, Market Development Manager with ADAMA Australia in Southern Queensland. Photo Credit: ADAMA

MURDOCH RESEARCHER NAMED AMONG WORLD'S TOP AGRI-FOOD SYSTEM INNOVATORS

A MURDOCH UNIVERSITY RESEARCHER WHOSE WORK HAS SUPPORTED 25 MILLION SMALLHOLDER FARMERS ACROSS AFRICA AND SOUTH ASIA HAS BEEN RECOGNISED AS A 2026 TOP AGRI-FOOD PIONEER BY THE WORLD FOOD PRIZE FOUNDATION.



Professor Rajeev Varshney FRS FAA.
Photo Credit: Murdoch University

Professor Rajeev Varshney FRS FAA, Director of the Centre for Crop and Food Innovation (CCFI), the WA State Agricultural Biotechnology Centre (SABC), and the University's International Chair in Agriculture and Food Security, is one of just four Australians named to the list since its launch in 2024.

The 2026 cohort comprises 40 innovators from 30 countries across six continents, from scientists and policymakers to farmers and entrepreneurs.

Professor Varshney was recognised for his innovation in Genomics-assisted Breeding, which has transformed a theoretical promise into an operational tool for national programs in Asia and Africa. As Principal Investigator of the

Gates Foundation-backed Tropical Legumes Project, he contributed to the delivery of 266 improved legume varieties and nearly 500,000 tonnes of certified seed to farmers in South Asia and Sub-Saharan Africa.

The Foundation also highlighted his work to lower one of the biggest barriers to genomics-assisted breeding in low-income countries: developing high-throughput genotyping platforms that modern breeding relies on at a fraction of their usual market cost, putting methods once confined to well-funded research institutes within the reach of breeders in the developing world.

In a statement, Murdoch University Vice Chancellor, Professor Andrew Deeks, said:

"Professor Varshney has always been passionate about delivering tangible research results that support efforts to usher in a globally food-secure future. As only the fourth Australian to be recognised as a Top Agri-food Pioneer, Prof Varshney has established himself as one of Australia's most exceptional agricultural researchers, whose impact on breeders, farmers and consumers continues to shape outcomes across the globe. I warmly congratulate him on another well-deserved recognition."

Murdoch University Deputy Vice Chancellor, Research and Innovation, Professor Peter Eastwood, added:

"Professor Varshney's recognition as a Top Agri-food Pioneer reflects both his scientific excellence and his commitment to developing innovative solutions to global food security challenges. Through his leadership at Murdoch University's

Centre for Crop and Food Innovation, he continues to drive research that delivers real benefits for farmers, food systems, and communities in Australia and around the world. We are immensely proud of his achievements and this well-deserved international recognition."

CCFI and SABC Director, Professor Varshney, said:

"Dr Norman Borlaug is one of my biggest inspirations and played a significant role in my decision to dedicate my career to applying genomics and genetics in the fight against global food insecurity. To be recognised by the Foundation he established is an incredible honour.

"My sincere thanks to Murdoch University's senior leadership team, as well as my peers, colleagues, and collaborators from Murdoch University, ICRISAT and partnering organisations, as well as various funding agencies for their continued faith, support, and guidance. I consider this recognition to be a reflection of our collective efforts to enhance food security, agricultural sustainability, and farmer prosperity."

TAP honourees will be recognised at the Norman E. Borlaug International Dialogue in Des Moines, Iowa, in October 2026.

ABOUT THE WORLD FOOD PRIZE FOUNDATION:

The World Food Prize was founded by Dr. Norman E. Borlaug, recipient of the 1970 Nobel Peace Prize, to honour those who improve the quality, quantity, or availability of food worldwide.

ABOUT THE TAP LIST:

Now in its third year, the TAP list honours individuals driving bold and innovative solutions to the most pressing challenges in global food security.

MORE INFORMATION

Visit: <https://www.murdoch.edu.au/>

TICKETS NOW ON SALE FOR THE 2026 AUSTRALIAN MELON CONFERENCE – FEATURING THE RETURN OF THE NATIONAL MELON FIELD DAY

THE AUSTRALIAN MELON INDUSTRY IS GEARING UP FOR ITS BIGGEST EVENT IN YEARS, WITH TICKETS OFFICIALLY ON SALE FOR THE 2026 AUSTRALIAN MELON CONFERENCE AND THE HIGHLY ANTICIPATED RETURN OF THE NATIONAL MELON FIELD DAY. THE THREE-DAY EVENT WILL BE HELD FROM 7–9 OCTOBER 2026 ACROSS TOWNSVILLE AND AYR IN NORTH QUEENSLAND.



Bringing together growers, researchers, seed companies, agribusinesses, retailers and industry stakeholders from across Australia, the conference promises three days of innovation, networking, industry insights and hands-on learning designed to help shape the future of the Australian melon industry.

Part of the three-day event will include a Melon Field Day, taking place at the Queensland Department of Primary Industries' Ayr Research Station. Delegates will have the opportunity to experience first-hand demonstrations, variety trials, chemistry trials, automation technologies and the latest research and development initiatives driving productivity and profitability in melon production.

Melons Australia Chief Executive Officer Johnathon Davey said the return of

the conference and field day marks an exciting milestone for the industry.

Hosted across The Ville Resort-Casino and the Townsville Entertainment & Convention Centre, the conference program has been designed to deliver something for every part of the supply chain, especially melon growers. Delegates will hear from leading experts, participate in interactive strategic workshops, explore emerging trends in marketing, exports and sustainability, and connect with industry peers from around the country and abroad.

The event will also feature a two-day trade show showcasing the latest products, services and technologies available to melon growers, alongside networking opportunities including a Welcome Event and Gala Dinner.

With North Queensland's strong agricultural heritage and Townsville's

growing reputation as a destination for major industry events, organisers expect strong attendance from across Australia. The event is expected to attract growers and industry representatives from all major melon-producing regions, making it one of the most significant melon industry gatherings in recent years.

EVENT DETAILS

2026 Australian Melon Conference
& National Melon Field Day
7–9 October 2026
Townsville and Ayr, Queensland

TICKETS AND INFORMATION

2026 Australian Melon Conference
Tickets Available at:
<https://events.humanitix.com/australian-melon-conference-2026>

ALL PATHS LEAD TO COMPOST!

GLOBAL THEME FOR INTERNATIONAL COMPOST AWARENESS WEEK 2027 ANNOUNCED.

The members of the International Compost Alliance (ICA), including the Australian Organics Recycling Association (AORA), are pleased to announce 'ALL PATHS LEAD TO COMPOST' as the global theme for International Compost Awareness Week (ICAW) 2027, taking place May 2 – 8, 2027.

Compost advocates, communities, businesses and organisations around the world are invited to mark their calendars, plan and join this annual celebration of compost and organics recycling, highlighting how compost helps build healthier soil, stronger communities and a more sustainable future.

The 2027 theme aligns with United Nations Sustainable Development Goal 9 – Industry, Innovation and Infrastructure, recognizing the essential role that innovation and investment play in creating a thriving circular bioeconomy at both the local and global levels.

As countries work to reduce waste, conserve natural resources and tackle climate change, composting and anaerobic digestion are proven technologies that transform organic waste into valuable products to improve soil health, recycle nutrients and reduce reliance on fossil fuel-intensive fertilizers. Every individual can contribute to this effort. Involvement combined with the power of continued innovation, infrastructure and investment will help unlock even greater environmental, economic and social benefits.

The work of our industry of compost advocates and practitioners in returning organic matter to the soil through compost supports every sustainability target including:

- **Reducing greenhouse gas emissions** by keeping organics out of landfills and incinerations
- **Building healthier, carbon-rich soils** that improve food production and climate resilience

- **Recycling valuable nutrients** and reducing dependence on fossil-based mineral fertilizers
- **Supporting biodiversity and ecosystem restoration**
- **Improving soil's ability to retain water and be resistant to droughts**
- **Empowering communities** to take practical, low-cost climate action.

"Whether at home, work, or in our communities, recycling organic resources into compost is one of the simplest and most effective actions we can all take for the environment" said John McKew, AORA National Executive Officer. "This year's theme reminds us that there are many different routes to a more sustainable future, but they all lead to compost. We encourage compost advocates across Australia to plan to celebrate International Compost Awareness Week 2027, and showcase how composting is helping protect our climate, enrich our soils and strengthen our communities".

JOIN THE CELEBRATION!

Every year, International Compost Awareness week inspires thousands of activities around the world including composting workshops, open houses, demonstrations, school events, community garden projects and many other types of events. Individuals can also get involved by starting their own composting system at home, at work or in their community, getting to know the important workings at a local composting facility and by adding compost to their soil to improve their garden's productivity and climate-resiliency.

Here are just some suggestions as to how to celebrate this important week:

- **Host facility open houses** — tours of compost sites, transfer stations or community gardens.
- **Host** a "how to compost" event or facility tour
- **Promote your compost**, showcasing it in local community gardens,

farmers' markets or other gatherings

- **Organize a "Feed the Soil" challenge** — encourage households, businesses, schools and other locations to track their organic residuals for one week to show how they add up and can make a meaningful environmental difference in reducing greenhouse gas emissions and creating healthier soil
- **Request** your municipality to officially recognize May 2 – 8, 2027 as International Compost Awareness Week.
- **Share** reminders of proper sorting with "What Goes Where" guides and tips on how to use quality compost for healthy soil
- **Celebrate** your Compost! story, showcasing your and your team's work and community contributions
- **Feature** composting in farmers' markets — booths, soil displays, kids' activities.

THANK YOU TO COMPOST CHAMPIONS EVERYWHERE!

Creating lasting change takes persistence, collaboration and commitment. The International Compost Alliance (ICA) would like to recognise and thank the thousands of compost advocates around the world for your steady, determined efforts to shift habits, inspire communities and champion the regenerative practices our planet urgently needs. Your dedication — whether through community programs, education, research or simply leading by example — is helping make positive change happen - for our climate, our communities and our future. THANK YOU, both today, tomorrow and always.

Together, all paths lead to compost.

MORE INFORMATION

Contact: John McKew, AORA National Executive Office (E: john@ora.org.au)

NEW RD&E PLAN SETS DIRECTION FOR THE HONEY BEE AND POLLINATION INDUSTRY

THE AGRIFUTURES HONEY BEE & POLLINATION PROGRAM RD&E PLAN 2026–31 HAS BEEN RELEASED, PROVIDING A ROADMAP DEVELOPED IN CLOSE PARTNERSHIP WITH INDUSTRY TO GUIDE RD&E INVESTMENT OVER THE NEXT FIVE YEARS. THE PLAN SETS OUT A CLEAR DIRECTION FOR INVESTMENT, TARGETING THE PRIORITIES, CHALLENGES AND OPPORTUNITIES FACING AUSTRALIA'S HONEY BEE AND POLLINATION SECTOR.

AgriFutures Australia General Manager, Levied and Emerging Industries, **Samantha Beresford**, said the Plan provides a practical roadmap for investment at an important time for the industry.

“Developed in consultation with industry, this Plan provides a clear framework for investing in RD&E that supports beekeepers today while helping the industry prepare for future challenges and opportunities,” Ms Beresford said.

“The establishment of Varroa destructor in Australia, alongside other biosecurity, environmental and market challenges, highlights the importance of targeted RD&E investment.

“This Plan prioritises research and innovation that will help beekeepers respond to emerging issues while building the productivity, profitability and resilience of the industry,” she said.

A CLEAR FRAMEWORK FOR INVESTMENT

The RD&E Plan provides a structured framework to guide how levy funds are directed over the next five years. It identifies five priority areas for investment:

- Bee health, resilience and production
- New and emerging pests and diseases
- Agricultural integration and income diversification
- Floral resources and environmental conditions
- Product differentiation and new products

A strong emphasis of the RD&E Plan is ensuring that research delivers practical on-farm value. This includes a focus on developing tools, technologies and practices that are readily adopted by beekeepers, as well as strengthening pathways for extension and knowledge transfer.

SHAPED WITH INDUSTRY INPUT

The RD&E Plan has been informed by a comprehensive consultation process, ensuring it reflects both current priorities and future opportunities for the sector.

More than 2,000 industry members were invited to contribute through a national survey, providing insights into key opportunities, challenges and emerging trends. This was complemented by targeted engagement with key stakeholders and the AgriFutures Honey Bee & Pollination Advisory Panel. Scenario planning workshops held in Queensland and South Australia brought industry representatives together to test potential directions and explore future scenarios. Ongoing engagement with the Australian Honey Bee Industry Council (AHBIC) further strengthened and refined the Plan as it evolved. A draft Plan was also shared more broadly, including through a webinar, allowing stakeholders across the industry to provide feedback prior to finalisation.

AHBIC Chair Jon Lockwood said RD&E remained critical to the long-term success of Australia's honey bee and pollination industry.

“RD&E plays a vital role in helping Australian beekeepers respond to current challenges and remain competitive and resilient into the future. This Plan sets a clear direction for investment in the priorities that matter most to industry, ensuring levy funds are directed towards outcomes that strengthen productivity, resilience and long-term sustainability,” Mr Lockwood said.

He said the extensive consultation process had helped ensure the Plan reflected the needs and aspirations of beekeepers and the broader industry.

“One of the strengths of this Plan is that

OVERVIEW

A new five-year research, development and extension (RD&E) Plan will guide investment in RD&E for the honey bee and pollination industry.

The Plan prioritises practical solutions to support bee health, productivity, resilience and industry sustainability.

More than 2,000 industry members helped shape the Plan's priorities through a comprehensive consultation process.

it has been shaped by industry. Beekeepers, pollination providers and industry representatives have had opportunities to share their views throughout the process, helping ensure the priorities identified in the Plan reflect the challenges, opportunities and needs of the sector both now and into the future.”

CURRENT RESEARCH OPPORTUNITIES

Alongside setting strategic direction, the RD&E Plan also outlines how future investment opportunities will be delivered. This approach will enable investment in priority areas to continue while establishing a more consistent cycle for future funding opportunities.

The release of the RD&E Plan is already driving investment in priority areas. Two Requests for Quote (RFQs) are currently open on the AgriFutures website, focusing on the development of a workforce strategy for the honey bee and pollination industry and improving understanding of industry impacts. These projects will help build the evidence base needed to support future industry growth, capability and investment decisions.

The Program will also hold an Open Call in February 2027, with the aim of maintaining an annual call around this time each year. Further investment opportunities aligned with the Plan's priorities will be released over time, ensuring ongoing collaboration between industry, researchers and service providers.

LOOKING AHEAD

The AgriFutures Honey Bee & Pollination Program RD&E Plan 2026–31 represents an important step in shaping the future of research investment for the industry.

Find out more visit: <https://agrifutures.com.au/>

The Smartest COPPER for your Spuds!

SERGOMIL L60
Neostim

Sergomil L60 delivers optimal copper uptake, mobility and performance when your crop needs it most.



EFFICIENT COPPER NUTRITION

Mono-gluconic chelation for absorption by roots and foliage



ENHANCED MOBILITY

Moves where your crop needs it most



PROVEN PERFORMANCE

Supports stronger, healthier plants for higher quality yields



SMART COPPER

Biostimulant benefits that go beyond basic nutrition

agreva[®]
Sustainable Agriculture



SERVALESA
by DSG