2025 Highlights

Tasmanian Institute of Agriculture

UNIVERSITY of TASMANIA

TIA

Tasmanian Institute of Agriculture

Tasmanian Government

TIA is a joint venture of the University of Tasmania and the Tasmanian Government

About TIA

The Tasmanian Institute of Agriculture (TIA) is a leading research, education, and industry engagement institute dedicated to supporting a sustainable future for agriculture and food production.

Our focus is on co-designed research, industry partnerships and education, fostering industry impact and underpinning the growth of the Tasmanian economy.

As a Joint Venture between the University of Tasmania and the Tasmanian Government, we have a clear mandate to ensure our research, education and engagement drive sustainable productivity improvements and growth for Tasmanian farmers and agribusinesses, while continuing to build upon environmental credentials and maintaining community support.

Our research is industry-driven and addresses the critical challenges faced by farmers, food producers, and processors. From improving soil health and crop resilience to advancing sustainable farming practices, we deliver practical science-based solutions that benefit the entire agricultural value chain.

The Joint Venture has enabled significant leverage of funding for both programmatic and targeted research, supporting the delivery of world leading science for Tasmanian agriculture and food innovation. Between 2020 and 2024, $29.8 million in Tasmanian Government investment was leveraged to secure an additional $59.6 million, largely through research grants from Rural Development Corporations, the Australian Government and primary producers.

We operate two nationally significant research farms in North-West Tasmania — the TIA Dairy Research Facility at Elliott and the TIA Vegetable Research Facility at Forthside. These facilities serve as hubs for cutting-edge research and education in collaboration with industry.

In addition, we conduct field trials across commercial orchards, vineyards, and farms across the state, working closely with producers to develop and implement best-practice innovations.

Education and training are central to TIA's mission. As the home of the University of Tasmania's agricultural teaching programs, we deliver undergraduate and postgraduate education, equipping the next generation of agricultural leaders with the knowledge and skills needed for the future.

With a strong commitment to sustainability and innovation, we aim to drive positive change in Tasmania's agricultural sector, ensuring that the state remains a leader in high-quality, productive, and environmentally responsible agriculture and food production.

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◂ Cover: Dr Tamieka Pearce and Dr Asharp Godwin at the TIA Vegetable Research Facility, Forthside.

◂ TIA Vegetable Research Facility, Forthside.

Message From TIA's Director

Welcome to the Tasmanian Institute of Agriculture's Highlights Report for 2025, showcasing a year of strong momentum across our research, teaching and engagement portfolios.

The work of our staff, students and partners is driving innovation across the sector, from improving soil health and water management to enhancing biosecurity and developing climate smart farming systems. These efforts are helping Tasmanian agriculture to adapt, grow and lead.

Some highlights from 2025 include:

Launch of our Strategic Plan

A defining milestone of 2025 was the launch of our Strategic Plan 2026-2031, setting a clear direction for TIA's next phase of growth and impact.

Developed through extensive consultation with industry, government, academia and community partners, the plan reflects a shared vision for the future of cool-climate agriculture and food innovation in Tasmania.

The strategy strengthens our commitment to close industry collaboration, ensuring our research, education and engagement activities are directly aligned with the needs of farmers and the broader agriculture and food sector. Our research will continue to be co-designed with industry to ensure we're addressing the issues that matter most, establishing clear pathways to impact and leveraging co-investment wherever possible.

The strategy responds to complex challenges facing the sector such as climate variability, biosecurity risks, shifting global markets, and growing demand for a skilled workforce. It sets out a clear focus on delivering the world-class research, development, training and education outcomes Tasmanian farmers and industry need to stay competitive and thrive.

Educating the next generation of agricultural professionals

This year we celebrated the first cohort of Agricultural Science students graduating in Launceston, complementing our ongoing delivery of agricultural education in Hobart. This is an important step in strengthening our statewide education footprint and supplying skilled graduates to Tasmania's food and fibre industries.

Our very best wishes follow those graduates as they make their mark on our industry and beyond.

Deepening collaboration on climate resilience

The deepening of the integration of the TAS Farm Innovation Hub with TIA has brought significant benefits. Much more than just being sited in TIA, together, we are delivering on the promise of joined-up industry engagement to support climate change resilience across Tasmanian farming systems, ensuring that research, demonstration and extension are closely aligned with farmer needs.

Supporting the potato industry through science and diagnostics

Now that potato mop top virus is known to be endemic in Tasmania, Doug Clark, manager at TIA's Vegetable Research Facility at Forthside, has worked with industry and Biosecurity Tasmania to navigate the issues, while Professor Calum Wilson and team is enabling rapid testing and improved management of the disease and advancing our broader understanding of potato diseases that affect growers across the state.

Demonstrating pathways to low-emissions horticulture

Also at Forthside, the Zero Net Emissions Demonstration Farm has commenced trials, making it Australia's first dedicated zero net emissions horticultural demonstration farm. The first trials will test low-emissions solutions and practical tools that can help farmers reduce their emissions while maintaining productivity and profitability.

Engaging industry, schools and the public

In a very packed schedule, highlights include the Let it Grow school engagement initiative, the Science Behind Your Plate dinner as part of agriCULTURED festival, and the well-attended field days at our research facilities at Elliott and Forthside. These activities are vital in connecting science with practice, inspiring the next generation, and sharing research outcomes with our industry and the public more widely.

Optimising pasture-based dairy systems for the future

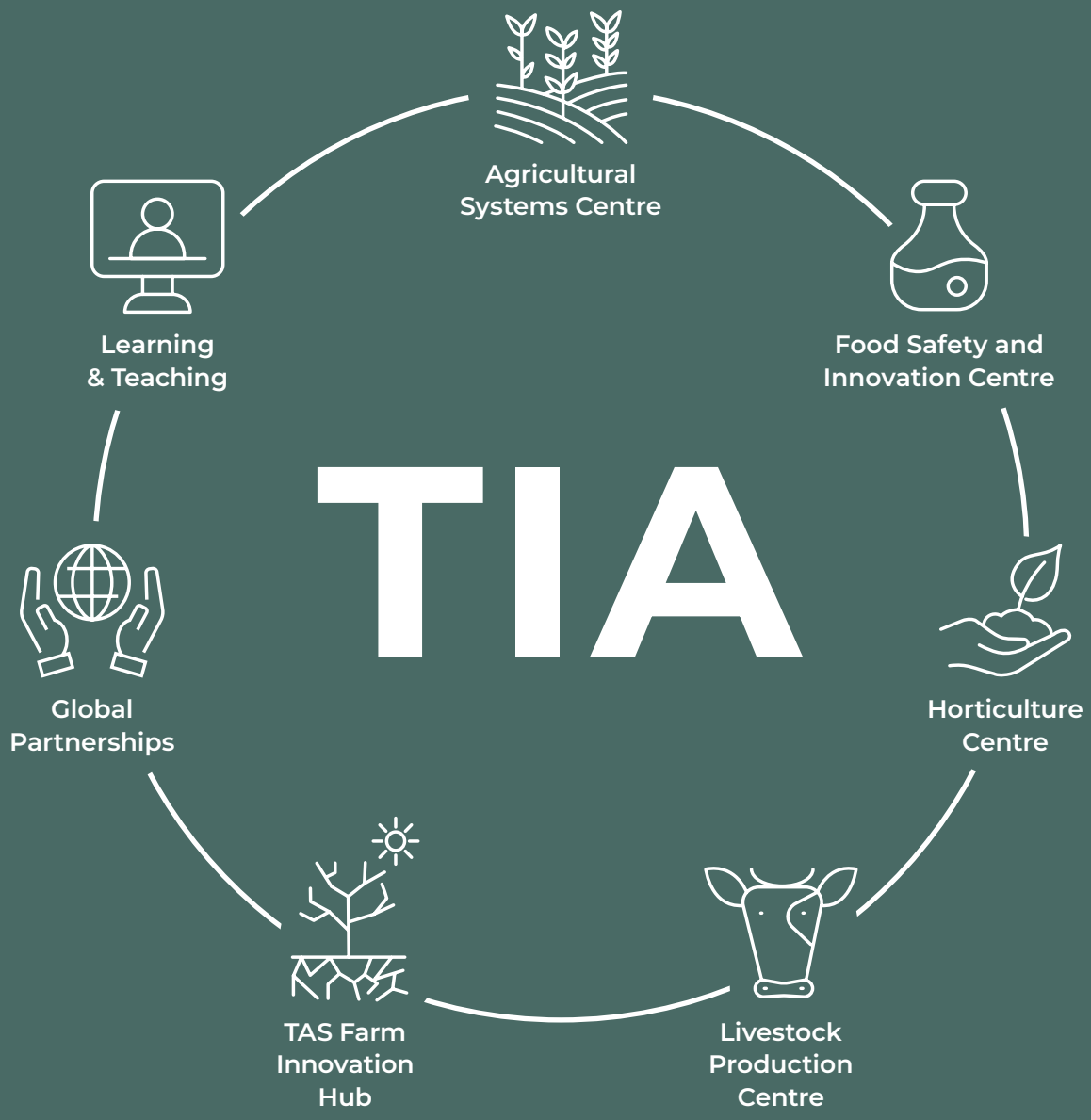
At the TIA Dairy Research Facility, the Dairy HIGH2 farmlet trial, co-funded by Dairy Australia and TIA, has been extended for an additional 12 months, until September 2026. This flagship program is testing how pasture-based dairy systems can be optimised for productivity, sustainability and profitability in a changing climate, with some very encouraging results.

These are just some of the achievements made possible through the collaboration of industry, government and others with TIA. I am immensely proud of our staff, students and partners, and deeply appreciative of the trust you place in us.

Thank you once again for working with us to support a vibrant, sustainable and innovative Tasmanian agriculture sector.

Professor Mike Rose
TIA Director

Organisational structure



▸ Students at The Shed, Inveresk campus.

Message from the Minister

It was a privilege to be appointed Minister for Primary Industries and Water in 2025. As a farmer, I know for a fact that Tasmania's agriculture sector is world-class, full of potential, and vital to our State's future.

I believe that Tasmania can be the cool climate agricultural research and innovation capital of Australia. Research, development and extension (RD&E) are essential for lifting agricultural productivity and meeting our goal to sustainably grow the annual farm gate value of Tasmanian agriculture to $10 billion by 2050.

The Tasmanian Institute of Agriculture (TIA) is at the heart of this work. TIA strengthens our farming sector by boosting productivity, supporting sustainable practices, and helping farmers adopt new, science-driven innovations.

The Tasmanian Government recently committed an additional $1.5 million to establish the Agriculture Research and Development Fund which will further support Tasmanian agricultural RD&E. This adds to the $8 million already invested in recent years through the Agricultural Development Fund and Agricultural Innovation Fund. This is in addition to the more than $5 million in annual core funding the State provides to TIA, and the co-investment from the University of Tasmania.

Research also underpins our biosecurity system, by improving how we detect, prepare for, and respond to threats. In 2025, TIA and industry responded quickly and partnered to develop a new research program focussed on the management of Potato Mop-Top Virus. I am proud of how we as an industry navigated this challenge in partnership with government.

The Government is now working with farmers and agribusinesses to develop a new long-term agriculture strategy for Tasmania. Research, innovation and adoption will be important central parts of the new strategy.

I would like to thank Professor Mike Rose for his exceptional leadership as TIA Director, and to acknowledge the dedication of TIA staff, whose commitment to high quality, innovative and sustainable RD&E continues to drive the growth and resilience of Tasmania's agri food sector.

Hon Gavin Pearce MP
Minister for Primary Industries and Water

Message from TIA's Advisory Board

The Advisory Board of the Tasmanian Institute of Agriculture (TIA) brings together representatives from the University of Tasmania, the Tasmanian Government and the agricultural sector. The Board provides strategic guidance for TIA's research, development, and extension (RD&E) activities.

It remains a privilege to serve as Chair, working alongside Board members who play an essential role in shaping TIA's strategic direction. The contributions of our four industry members are particularly valuable in ensuring that the strategic interests of the State's agricultural sector are represented on the Board.

I would like to acknowledge the Board's valuable insights in developing the 2026-31 TIA strategic plan, released in December 2025. The plan sets clear priorities to boost agricultural competitiveness and support Tasmania's long-term economic growth.

Biosecurity has remained a focus at our meetings this year. Together with the TAS Farm Innovation Hub, TIA has strengthened Tasmania's biosecurity through the appointment of a Biosecurity Engagement Lead. This role focuses on identifying priorities, guiding research and improving preparedness for emerging pest and disease threats. It also supports strengthened collaboration with the Department of Natural Resources and Environment Tasmania through training, simulation and research activities. This partnership will serve us well, as we continue to face new biosecurity challenges.

As we reflect on the year, I extend my sincere thanks to Professor Mike Rose for his leadership throughout 2025 and to TIA staff for their exceptional RD&E achievements. Their commitment to innovation, excellence and strong industry partnerships is a credit to TIA.

Looking ahead, I am confident the Advisory Board will continue to provide strategic guidance that supports high quality RD&E for Tasmania. As we develop Tasmania's next Agriculture strategy, the Board and our partnership with TIA will prove even more critical to a contemporary approach and look forward to building on the strength of this innovative collaboration between my department and the University of Tasmania.

Mr Jason Jacobi
Chair, TIA Advisory Board
Secretary, Department of Natural Resources
and Environment Tasmania

Agricultural Systems Centre

Agricultural Systems Centre

We use systems approaches to analyse complex challenges and, in collaboration with industry partners, identify opportunities to enhance the productivity and resilience of Tasmania's agricultural industries.

Our focus areas include:

- Soil and water management, including irrigation, soil advocacy, and exploring indigenous women's participation in water management and governance.
- The AgTech Innovation Studio, focussing on development and proof-of-concept testing of agricultural technology.
- Agricultural systems modelling with a focus on reducing greenhouse gas emissions, adapting to hotter climates, improving drought resilience, and improving carbon storage in vegetation and soils.
- Breeding and crop physiology for resilient plants, including addressing waterlogging, increasing heat tolerance and improving phosphorous use efficiency.

Boosting biosecurity efforts in Tasmania

TIA and the TAS Farm Innovation Hub strengthened their focus on biosecurity efforts with the joint appointment of a Biosecurity Engagement Lead – a new position with a focus on safeguarding Tasmania's agriculture industry from emerging pests and diseases.

Mr Craig Elliott was appointed to the role, bringing a strong background in national and international biosecurity risk management, emergency preparedness, surveillance and certification, policy, industry engagement and emergency response management.

"A key part of my role is working with industry and government to help identify the biosecurity priorities and how TIA and the TAS Farm Innovation Hub can meet those needs to prepare Tasmania for current and emerging pest and disease threats," Mr Elliott said.

◂ TIA Vegetable Research Facility, Forthside.

▴ Mr Craig Elliott was appointed as Biosecurity Engagement Lead in 2025.

> "I'll be focusing on identifying research priorities to strengthen our ability to respond to biosecurity threats. This will include boosting our capability through training and simulation exercises that will enhance the state's ability to respond to biosecurity threats and TIA's role during biosecurity emergencies."

The role will complement the Biosecurity Operational Plan which sets out how TIA works with the Department of Natural Resources and Environment to contribute to pest and disease prevention, preparedness, response and recovery.

TIA Director Professor Mike Rose said the appointment would help to support Tasmanian farmers and the wider industry from the threat of incursions.

"Our food and fibre producers depend on strong biosecurity to protect their livelihoods and Tasmania's reputation. In strengthening the biosecurity capability of TIA and our ability to work with Biosecurity Tasmania, we are helping to safeguard our industry's future."

TAS Farm Innovation Hub Director Sandra Knowles said the appointment was a vital step in protecting our local agricultural communities and strengthening their resilience.

"As our climate changes and becomes more unpredictable, the risks posed by pests, diseases, and other biosecurity threats to Tasmanian farmers are increasing," she said.

"This role will ensure farmers have timely access to expert advice and resources to safeguard their businesses. By working collaboratively, we are supporting Tasmanian farmers to adapt, thrive, and secure the long-term sustainability of our agricultural sector."

Carbon Storage Partnership

Project: Sustainable Pathways to CN30 (part of the Carbon Storage Partnership)

Funding body: Meat & Livestock Australia, Australian Wool Innovation Limited
Partners: University of Melbourne, Integrity Ag & Environment, Rabobank, The Mullion Group, Australian National University, RMCG, South Coast NRM, New South Wales Department of Primary Industries, CSIRO, Agrimix, Queensland University of Technology, QLD Department of Agriculture and Fisheries, Cloud Agronomics
Research team: Harrison M, Christie-Whitehead K, Liu K, Chapagain R, Miranda B, Ash R, McDonald S, Badgery W, Eckard R, Bhattarai G, Muleke A, Lucas D, Drake A, Chen C, Mokany K, O'Grady T, Mendham D, Doran-Browne N, Cainzos F, Sinclair K, McBeth S, Smith A, Burley H, Robert G, Waterworth R, Reinke H

The Carbon Storage Partnership (CSP) is an initiative of Meat & Livestock Australia (MLA) that aims to build the capability and capacity of Australia's livestock sector to become carbon neutral by 2030 (CN30) in a way that maintains productivity, improves farm profit and enhances environmental stewardship.

A key focus of the partnership is assisting and supporting producers to learn about the opportunities for carbon neutrality, and developing a pathway that is profitable, environmentally sustainable and socially acceptable.

As part of this project, a TIA research team led by Professor Matthew Harrison published a study in the prestigious journal Nature Communications, which quantified the cost that livestock producers are likely to incur if they were to change practices to obtain net-zero emissions in a changing climate. The study revealed that farmers can reduce greenhouse gas emissions while simultaneously boosting production and profit.

> "One of the greatest challenges of our time is how to decouple the link between agricultural productivity and greenhouse gas emissions," said Professor Harrison.

Their modelling found that the cost of reducing emissions, depending on the approaches used, can range from more than half of a farm's annual income to no cost if a productivity gain is achieved and multiple interventions are stacked together.

▲ Professor Matthew Harrison.

The key is to combine multiple mitigation strategies. Substantial and continuing reductions in farm emissions can be achieved by stacking interventions (management practices). A single practice change is not able to entirely counterbalance farm GHG emissions, much less maintain profit.

The top three practice changes (mitigation strategies) that farmers can combine include improving animal breeding to enhance the efficiency of conversion of feed into meat and milk, feeding cattle and sheep in ways that reduce methane from enteric fermentation (ie exhaled), and sequestering carbon from the atmosphere and storing it in soils and trees.

The greatest mitigation came from combining anti-methanogenic feed supplements and planting trees, while the greatest profit came from revenue diversification with wind turbines and adoption of livestock genotypes with enhanced feed-conversion efficiency.

The intervention with the lowest community acceptance, continuing the status quo and purchasing carbon credits to offset emissions, was also the most costly pathway to transition to net-zero.

However, Professor Harrison noted it would be difficult for the livestock industry to achieve absolute net-zero emissions. He said it was more realistic to focus on incremental improvements in emissions reductions each year.

"Farmers should focus on practices that reduce emissions and improve profit relative to their own business last year. They should not be comparing absolute or relative changes in emissions across farms, as all farms are different, as are those drivers of emissions, production and profit," Professor Harrison said.

Learn more

Ag-Tech Innovation Studio

Project: **Ag-Tech Innovation Studio**

Research team: Edwards S, Hardie M, Powell S, Boucher C, Gardner D, Mohammed C, Edwards C

The Ag-Tech Innovation Studio continues to operate as a strategic business unit within TIA, focused on translating research into practical, deployable technologies for the Tasmanian agricultural sector.

Over the past year, the Studio has strengthened its role in bridging research and real-world adoption, with a clear focus on building field-ready systems, supporting major research programs, and enabling pathways to commercialisation.

A key area of progress has been the advancement of soil sensing and biological monitoring capabilities through the Microbial Activity Sensor System (MASS) program. The Studio has supported the development of sensing systems, data pipelines, and modelling approaches that capture soil biological activity and system response at high temporal resolution.

Work has continued on a Tasmanian Government funded project, focused on monitoring microbial process interactions and carbon dynamics in-field using electronic nose (e-nose) and sensor fusion approaches. In parallel, the assignment of the Soil CRC Quoll® IP to the University of Tasmania was completed, positioning TIA to take greater ownership of the technology and its future development and commercial pathways.

The Studio is working with commercial partners to finalise a market-ready version of the Soil CRC Bilby® technology developed by TIA, while also completing prototype builds of the Bandicoot® soil surveying tool for deployment within Soil CRC long-term trials.

The Studio has also contributed to a range of applied research projects across TIA through the design and delivery of bespoke sensing and data systems, including development and deployment of light and microclimate sensing capability within the Effect of Rain Covers on Microclimate, Leaf Physiology and Fruit Quality project.

The team is providing targeted sensor and data engineering support to the Growing Value from Irrigation Project, delivering fit-for-purpose monitoring systems to improve water management insights and decision-making. In the Dairy HIGH2 long-term trials, the Studio is supporting emerging research into soil volatiles and biological activity through the integration of gas sensing technologies and associated data pipelines.

Collaboration remains central to the Studio's approach. The team continues to work closely with the TAS Farm Innovation Hub, contributing to technology evaluation, engagement activities, and the development of the Tasmanian Ag-Tech Guide as a resource for growers.

The Studio prioritises co-design with researchers, growers, and industry to ensure technologies are practical, robust, and suited to real farm environments. This includes a strong emphasis on portability, durability, and ease of use, addressing known limitations of many existing ag-tech solutions.

With a multidisciplinary team spanning agricultural science, engineering, and data systems, supported by dedicated prototyping facilities, the Studio can rapidly move from concept to validated field systems. This capability is increasingly being applied not only to research delivery, but also to defining scalable products and services that extend the impact of TIA's research beyond the project lifecycle.

We invite growers, researchers, industry partners, and innovators to partner with the Studio to advance sustainable, resilient, and productive agricultural practices through effective technologies and applied science.

Find out more

▾ Ag-Tech Innovation Studio team conducting a field trial with the QUOLL e-nose.

Circular Nutrient Economies for Climate Resilient Soils

Project: **Circular Nutrient Economies for Climate Resilient Soils**

Funding body: Australian Government through funding from the Climate-Smart Agriculture program under the Natural Heritage Trust
Partners: NRM North, Launceston City Council
Research team: Das B

This two-year project aims to improve soil health in Tasmania and included three free, hands-on workshops delivered in 2025 to empower land managers to care for their soil.

The project supports the transition to a circular economy by using surplus organic products including biochar, food organics and garden organics (FOGO) composts to benefit soil health and improve plant tolerance to drought and waterlogging.

The project aims to empower farmers and land managers to monitor longer-term changes in soil health after applying organic products to their soil and to demonstrate their potential to improve soil health," lead researcher Dr Bianca Das said.

In 2025, two workshops were held, in the Tamar Valley and Huon Valley. The hands-on sessions were attended by 50 participants who received an introduction to soil health and soil description, practical training in soil assessment, instructions on how to assess soil and the role of biowastes. One of the workshops focussed on Caring for Country with biochar.

"Healthy soils have better ability to store and drain water, making them more resilient to drought and flooding," Dr Das said.

> "By working with local councils and groups we can provide information about the use of organic waste on soil."

The workshops have been designed to ensure that farmers, landholders and community groups will have increased knowledge and skills in sustainable agriculture.

Additional workshops will be held in 2026.

Read more

▾ Participants at a soil workshop at Legana in northern Tasmania.

▲ TIA soil scientist Dr Ana Avila.

Growing value from irrigation for Tasmanian agriculture

Project: **Growing value from irrigation for Tasmanian agriculture**

Funding body: This project is funded by the Tasmanian Government through the Agricultural Innovation Fund
Partners: Tasmanian Irrigation
Contributors: This project is a collaboration with government, industry and farmers.
Research team: Swarts N, Hills J, Mohammed C, Ives S, Hardie M, Daugaard D, Ahadzie R M, Williams L, Kangogo M, Overman O, Avila A

This three-year project aims to improve sustainability and profitability for Tasmanian farmers through the efficient use of irrigation.

With significant recent investment in irrigation across the state, the project is assessing the value of these schemes at both a state and a farm level. Researchers are analysing the economic returns generated from irrigation, while also exploring the potential benefits of future investment for Tasmania's agriculture sector and individual farming businesses.

A key outcome of the project is the development of a farm-level financial model to quantify farm gate value derived from irrigation investment, created through collaboration between agricultural scientists, economics and industry specialists. This model will be used to support on farm irrigation investment and management, helping farmers maximise returns on water use.

In 2025, the research team delivered the first of two macro-economic reports into determining how much has been invested into irrigation across the state. This report will be followed by a second report comparing investment and projected returns to ABS and ABARES productivity data and agricultural revenues.

The second part of the project is focussed on understanding the impact on soils, benchmarking soils under pivot irrigators across Tasmania's major agricultural regions. The research team is developing a methodology to determine how much of the irrigation water being applied to soils is being effectively used and how much is being lost to factors such as wind, deep drainage or runoff.

Methodology testing and initial benchmarking trials sites were successfully undertaken during the 2025/2026 growing season in the Coal Valley and the Central Highlands. An additional three sites will be established in 2026/2027 in Tasmania's North and North West.

Understanding and quantifying runoff, wind and deep drainage will improve understanding about how the financial investment into irrigation is being used and converted into high value crops, helping farmers improve pivot design and irrigation scheduling.

"We are addressing a key knowledge gap in irrigation science. Despite decades of research there is still no clear quantification of the real effectiveness of centre-pivot irrigation systems in the field," TIA soil scientist Dr Ana Avila said.

> "Our goal is to quantify how much of the water applied by centre pivots truly reaches the crop root zone. By understanding where and why losses occur, we can help farms make every megalitre count."

The team is working closely with the TAS Farm Innovation Hub to engage farmer groups and agricultural organisations. Resources will be developed to demonstrate best practice and ways to minimise water loss in irrigated systems, to ensure Tasmanian growers are maximising their investment into irrigation.

Read more

Drought Resilience Adoption and Innovation Hub (TAS Farm Innovation Hub)

Funding body: Department of Agriculture Forestry and Fisheries, and other contributing Australian Government grants.

Industry partners: Beanstalk Agtech Pty Ltd; Cradle Coast NRM; Horticulture Innovation Australia; Hydro Tasmania; NRM North; NRM South; Private Forests Tasmania; Rural Business Tasmania; Southern Cross University; Tasmanian Institute of Agriculture; TasFarmers; Tasmanian Agricultural Productivity Group; Tasmanian Irrigation; Tasmanian Land Conservancy; Tasmanian Women in Agriculture Inc; TasWater; and The Derwent Catchment Project.

Delivery partners: Ag Logic; Cradle Coast NRM; Coal River Products Association; East Coast Primary Producers Association; King Island Beef Producers Group; Landcare Tasmania; NRM North; NRM South; Optimum Standard; Pinion Advisory; Private Forests Tasmania; Rural Business Tasmania Inc; Regenerative Agriculture Network Tasmania; Soil First Tasmania; TasFarmers; Tamar Valley Farm Discussion Group; The Derwent Catchment Project; and Tasmanian Land Conservancy.

TAS Farm Innovation Hub Staff: Sandra Knowles; Prof Caroline Mohammed; Dr Liana Williams; Tony Vaea; Melissa Lewarn; Marcus James; Brian Field; Prof Kathy Evans; Sophie Folder; Hannah Lewis; Erin Hughes; Sue Hinton; Maria Ortiz Rodriguez; Alex Russell; Belinda Nielsen; Alison Demuth; Jane Battersby; Dr Saideepa Kumar; Rohan Borojevic; and Renai Skurrie.

2025 was a year of strengthening connections and supporting farmer-led innovation for the TAS Farm Innovation Hub, with a focus on building networks and practical capacity across Tasmania's agricultural sector.

With seasonal variability continuing to challenge farming systems across the state, the Hub focused on helping farmers adapt through collaboration, shared learning, and practical tools to build long-term climate resilience.

Director Sandra Knowles said one of the highlights for the year was the Hub's investment in farmer groups. "Farmers tell us they really benefit from learning from each other," she said.

> **"This year saw a strong focus on supporting farmer groups at all stages - from those just getting started or meeting informally, through to established groups looking to expand their impact. These networks are critical for sharing knowledge, testing new ideas, and supporting one another through change."**

To support this, the Hub delivered several new initiatives. The Farmer Group Support Pilot and Farmer Group Sponsorship Program were designed to strengthen the capacity and on-ground impact of existing groups.

"The pilot combines hands-on facilitation with flexible funding, enabling groups to grow stronger, lead with confidence, and play a meaningful role in building a more resilient farming future," Sandra said.

▾ King Island beef property.

▲ Tasmanian cherry orchard.

"Through the sponsorship program, small grants were made available to support activities that enhance climate resilience, build capability, and deliver practical benefits for farmers."

Building on this, the Hub also launched the Emerge Program to support new and emerging groups.

"Emerge was designed to help these groups start on the right foot, clarifying their purpose, establishing practical structures, and building the relationships needed for long-term success."

Improving access to information was another key milestone, with the launch of a new TAS Hub website. The platform provides a central hub for events, resources, and project updates, making it easier for farmers and stakeholders to find relevant, region-specific information.

Throughout the year, the Hub partnered with a range of organisations to deliver practical projects and extension activities, including the Water Use Efficiency Project with Pinion Advisory, the Enhancing Farm Dams Project with Landcare Tasmania, and the Ag Logic Seasonal Outlook Webinars. Together, these initiatives provided farmers with insights into rainfall variability, soil conditions, irrigation planning, and water management to support on-farm decision-making.

The Hub continued its close partnership with TIA to build capability and respond to emerging priorities. This included delivering Indigenous Cultural and Intellectual Property (ICIP) workshops for Aboriginal people, partners, and staff, strengthening understanding of cultural protocols and supporting more meaningful engagement.

The Hub and TIA also co-invested in a Biosecurity Engagement Lead, recognising the impacts of drought and climate variability on biosecurity risks and supporting a more coordinated, industry-based approach to preparedness.

Looking ahead, the Hub will continue to build on this work by strengthening farmer networks and supporting the adoption of drought-resilient practices through farmer-to-farmer learning.

"There will be a continued focus on developing practical tools to help farmers understand what future climate conditions may mean on the ground, while supporting advisors, young farmers, and new entrants to test and apply new ideas through on-farm trials," Sandra said.

"This work will be underpinned by projects aimed at improving water use and storage, soil health, and broader landscape resilience, supporting the long-term sustainability of Tasmanian farms and rural communities."

Read more

Food Safety and Innovation Centre

Food Safety and Innovation Centre

Our Food Safety and Innovation Centre advances safe, sustainable food systems through research, education, and industry collaboration.

We deliver world class expertise in food microbiology, food preservation and sterilisation, predictive modelling, and analytical science, translating evidence into practical solutions that improve food safety, quality, shelf life, and value across Tasmanian and global food supply chains

Supporting wine industry to manage smoke taint risk

Project: Beating smoke taint with sparkling wine: Climate Change Adaptation for the Tasmanian wine industry

Funding body: Tasmanian Government
Partners: Wine Tasmania
Research team: Vinden N, Shellie R, Close D, Dambergs K, Overman O, Ctercteko A

We are continuing research into how sparkling wine production may help mitigate the impacts of smoke taint, as part of a 10-year project funded by the Tasmanian Government's Agricultural Innovation Fund.

Now in its third year, the trial is assessing the production of sparkling wine from smoke affected wine grapes, and the sensory impact of smoke compounds during the ageing process.

Project lead Dr Naomi Vinden said smoke taint remains a significant concern for wine producers, with heavily affected fruit representing a substantial cost to the sector.

> "Fruit significantly affected by smoke can develop negative sensory characteristics which can manifest during winemaking and ageing, ultimately rendering the wine unpalatable," Dr Vinden said.

The research is being conducted in collaboration with peak industry body Wine Tasmania, which has identified smoke mitigation as a high-priority research focus.

"The wine sector is focused on both minimising the impact of smoke on wine grapes and on ways to mitigate the impact when there is exposure to smoke. Projects such as this one will provide wine producers with information on ways to manage and find optimum uses for premium grapes which may have been exposed to differing levels of smoke," said Sheralee Davies, CEO of Wine Tasmania.

In 2025, 200kg of Pinot Noir and Chardonnay grapes were harvested for controlled smoking trials using the FireLab3 at the Fire Centre, simulating vineyard exposure to smoke from a bushfire. The grapes were then processed into sparkling wine with defined levels of smoke taint.

Currently, the wine is undergoing its secondary fermentation to turn it into sparkling wine. Once this stage is complete, chemical analysis will follow and preliminary findings will be shared with industry in 2026.

The project has also welcomed a PhD student mid-2025 (Alison Ctercteko), who is supporting the analytical and sensory workflow and investigating further mitigation strategies for smoke taint. Smoke taint sensory panel training is set to start sometime in 2026.

Find out more

◂ Dr Naomi Vinden leads the beating smoke taint with sparkling wine project.
▸ PhD candidate Alison Ctercteko.

▲ Dr Jay Kocharunchitt.

Enhancing shelf-life prediction for Wagyu beef supply chains

Project: **Shelf-life predictive model development for vacuum-packed Wagyu beef**

Funding body: Meat and Livestock Australia
Partners: JBS Australia and Harmony Agriculture & Food Company
Research team: Kocharunchitt J, Rood L

This project builds on our understanding of the microbiology of spoilage in red meat, extending the existing Meat Shelf-Life Calculator to support shelf-life prediction for chilled vacuum-packed (VP) Wagyu beef.

The research combines controlled storage trials, microbiological analyses and product quality assessment to better understand how temperature influences spoilage and shelf-life in VP Wagyu.

> “These data will be used to underpin the development and validation of a practical predictive model that industry can use to estimate shelf-life remaining under real supply chain conditions,” said Dr Jay Kocharunchitt, TIA project lead.

The model will be incorporated into the existing calculator, providing industry with a readily usable decision-support tool to better manage VP Wagyu supply chains.

This cost-effective tool will support industry to optimise and assure product quality in real time, reduce unexpected quality loss and associated waste, and support negotiations to improve market access.

Access the Shelf Life Calculator

Hyphenated sample preparation and analysis using automated liquid-liquid extraction and gas chromatography

Project: **ARC Training Centre for Hyphenated Analytical Separation Technologies**

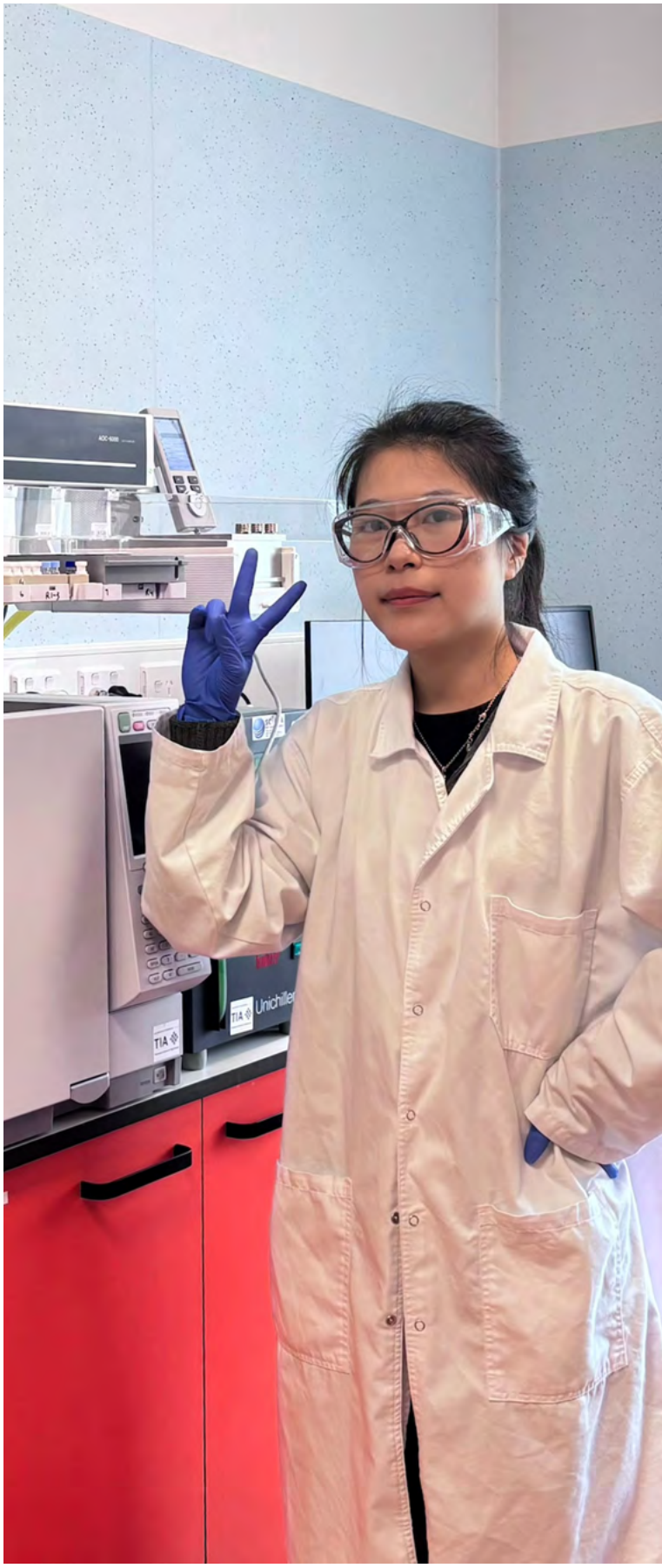
Funding body: Australian Research Council
Partners: Trajan Scientific and Medical Pty Ltd
Research team: Hu Di (PhD Candidate), Shellie R, Maya A F, Ismail S

Di Hu's PhD project is a collaboration between the Tasmanian Institute of Agriculture and the ARC Training Centre for Hyphenated Analytical Separation Technologies (HyTECH). It aims to improve how food and beverages are tested for safety and quality by developing automated, robot-assisted sample preparation methods.

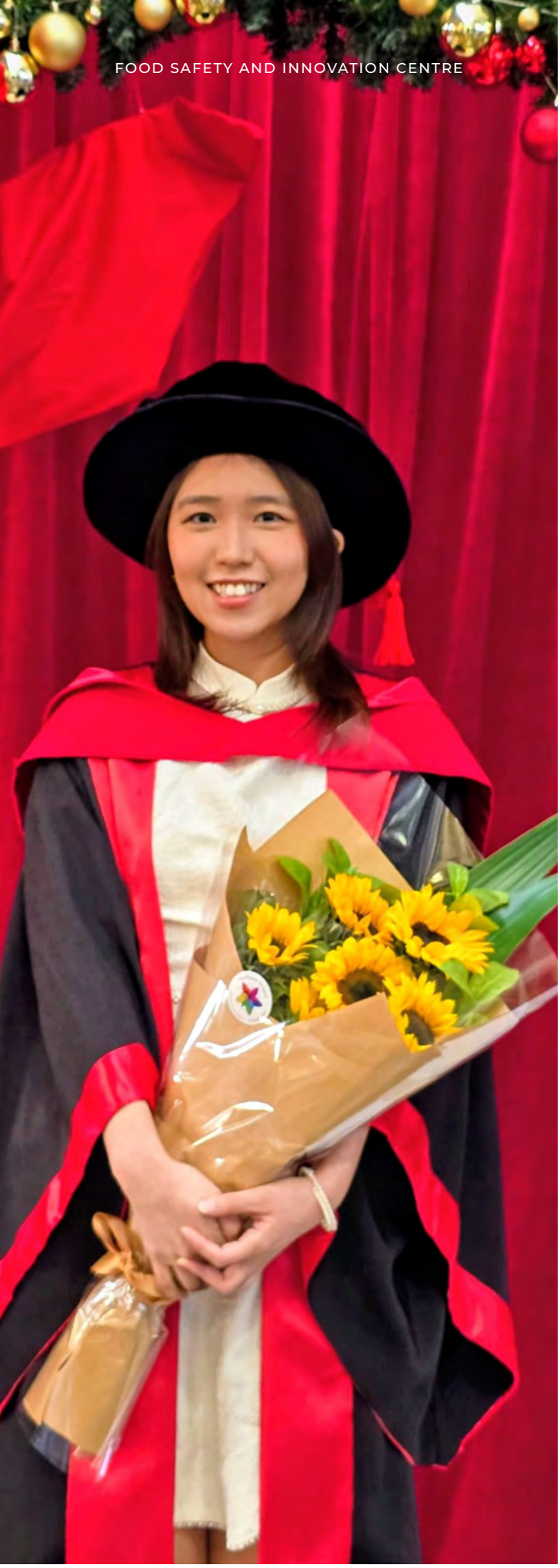
Before food and beverages can be analysed for contaminants such as pesticides, toxins, or processing chemicals, complex preparation steps are required to extract these substances from fats, proteins, and carbohydrates. These steps—particularly liquid/liquid extraction—are often slow, labour-intensive, and highly dependent on operator skill, making them a major bottleneck in safety and quality analysis.

The project focuses on designing and optimising a robotic system that can carry out liquid-liquid extraction automatically and reproducibly. Food and beverage samples vary widely in composition, which makes consistent extraction difficult and increases the risk of errors, contamination, or inconsistent results when performed by hand.

By automating these processes, the research aims to reduce human error, improve consistency between laboratories, and significantly increase sample throughput. Automated extraction also reduces exposure of analysts to hazardous solvents and frees specialist staff to focus on data interpretation rather than repetitive manual tasks. Ultimately, this work will support faster, more reliable food and beverage testing, helping regulators and industry better protect consumers and ensure compliance with food safety standards.



▸ Di Hu's research focuses on developing an automated liquid-liquid extraction method.



Faster, smarter food safety testing

Project: **ARC Training Centre for Hyphenated Analytical Separation Technologies**

Funding body: Australian Research Council
Partners: Deakin University, University of Technology Sydney, Trajan Scientific and Medical Pty Ltd
Research team: Valarie Heng (PhD candidate), Shellie R, Jadhav S, Ueland M, Gooley A

A PhD research project by Valarie Heng identified faster and smarter ways to detect harmful bacteria in food, helping food producers and regulators make decisions sooner.

Food contamination with bacteria such as E. coli can cause serious illness. To prevent this, food products are routinely tested in laboratories. However, standard testing methods usually involve growing the bacteria, which can take two days or more. During this waiting period, food products are often held in storage or delayed from reaching consumers.

Instead of waiting for bacteria to grow, the project explored whether contamination could be detected by measuring the tiny amounts of gases released by bacteria as they grow. By analysing the air above food or liquid samples, the research aimed to detect E. coli far earlier than traditional testing allows.

In the earlier stage of the research, milk samples were studied using an advanced laboratory technique. The research identified a small group of gases that appeared consistently when E. coli was present. Together, these gases acted as reliable warning signs of contamination.

In the later stage of the PhD project, the method was further improved to make it even more sensitive. This allowed the detection of E. coli at much earlier stages, even when only extremely small numbers of bacteria were present.

Using this refined approach, contamination could be detected after just 11 hours, starting from as little as a single bacterial cell. This represents a major step forward in reducing the time needed to identify potential food safety risks.

◂ Valarie Heng at her University of Tasmania graduation ceremony.

▲ Dr Jay Kocharunchitt and PhD candidate Gypsy Mallam.

Exploring microbial solutions to plastic pollution

Project: **Microbial degradation of plastic waste**

Partners: University of New England, McRobies Gully Waste Management Centre
Research team: Kocharunchitt J, Rood L, Bowman JP, Gulati V, Mallam G (PhD candidate)

Plastic pollution is a growing global problem. The United Nations estimates that every year 19-23 million tonnes of plastic waste leaks into aquatic ecosystems, polluting lakes, rivers and seas.

This PhD research project by Gypsy Mallam is investigating the potential of microorganisms to degrade plastic waste, as a step towards developing a sustainable, biological solution to this problem.

Soil samples collected from McRobies Gully Waste Management Centre and Southern Waste Solutions in Hobart are being used to identify naturally occurring microorganisms capable of breaking down common plastics such as polyethylene (PE), polystyrene (PS), polyphenylene sulphide (PPS) and polypropylene (PP).

Screening experiments are currently underway to identify the most promising candidates, which will then be characterised to better understand the factors affecting their degradative capacity.

The project will generate foundational knowledge to support the future development of an effective large-scale microbial approach for plastic waste management.

Horticulture Centre

Horticulture Centre

We aspire to be the nation's leading provider of cool climate horticulture research, development, extension and adoption. Our work contributes to the goal of growing the farm gate value by 20 per cent over the next five years to 2030.

Our focus areas include:

- Sustainable resource use
- echnological and digital innovation
- Pest and disease preparedness and responsiveness to mitigate risks
- New crops, products and processes

We operate the TIA Vegetable Research Facility at Forthside in North-West Tasmania. This 54-hectare site is the location of diverse research trials and teaching that directly contribute to the sustainability and productivity of Tasmania's agriculture industry.

Forthside is also the base of the Tasmanian Certified Seed Potato Scheme, which provides an independent service to ensure that seed potatoes are grown in accordance with a strict national standard. The scheme helps to ensure that only clean potato seed enters the industry, which helps to control the spread of pests and diseases.

Optimising gibberellic acid use for improved sweet cherry quality

Project: **Sustainably growing horticulture value in cool climate Australia (AS20004)**

Funding body: Funded through the Hort Innovation Frontiers program with co-investment from the Tasmanian Institute of Agriculture, University of Tasmania, Simplot, Premium Fresh, Bejo, Potatoes New Zealand, The Scottish Society of Plant Research Botanical Resources Australia, South Pacific Seeds and contributions from the Australian Government and contributions from the Australian Government.
Partners: Stonecrest Cherries, Wandin Valley Farms, Lucaston Park Orchards
Research team: Eyles A, Swarts N, Close D, N Rana

This research program, a collaboration between TIA, Hort Innovation and industry has an ambitious goal to support the sustainable growth of the value of cool climate horticulture by 20 per cent over five years to 2030.

There are 14 active projects as part of this partnership, including a four-year project led by Dr Alieta Eyles to investigate how gibberellic acid (GA_3) can be used to reliably delay maturity and to achieve size and firmness in sweet cherries under protected cropping systems, including rain covers and netting. While GA_3 is widely used to achieve optimum quality for premium export markets, the biological mechanisms underpinning its effects on fruit firmness remain poorly understood.

PhD student, Naveed Rana and Honours student, Shiyu Wu will carry out plant hormone and cell wall analysis to address these gaps. This new mechanistic understanding will improve the consistency and effectiveness of GA_3 application strategies.

Findings will be shared with growers to inform protocols for optimising GA_3 application to reliably achieve premium quality fruit for export.

This is important research for Tasmania's cherry sector which has a farmgate value of $91 million (Hort Innovation 2024/2025) and has a global reputation as a producer of premium quality sweet cherries.

Read more

◂ A GA_3 trial is underway in Tasmania orchards.

▲ Professor Kathy Evans, explains how to conduct a grape assessment at Kate Hill Wines.

A new resource for winegrape producers

Project: **Producer Led Trials: A guide for winegrape producers and service providers**

Funding body: This publication was prepared by the TAS Farm Innovation Hub, which is funded by the Australian Government's Future Drought Fund. It draws from multiple research projects led by the Tasmanian Institute of Agriculture
Partners: This publication is grounded in the work of many producers who have generously shared their time, knowledge and experiences in various research projects
Research team: Evans K, Page D, Buntain M, Overman O, Russell A

We developed and published a new resource for winegrape producers and service providers so they can confidently conduct their own vineyard trials for improved crop and disease management.

The guide, Producer Led Trials: A guide for winegrape producers and service providers, strengthens our efforts to help winegrape producers overcome major production constraints caused by disease.

The resource is for producers seeking more effective and efficient ways to conduct an in-vineyard trial that integrates well with their existing vineyard operations and supports commercial decisions.

It contains four learning modules with step-by-step instructions, resources and case studies from multiple states in Australia on how to conduct simple and informative in-vineyard visits.

Through the guide, growers are supported to make informed decisions about small or large changes to vineyard operations, while also helping them learn more about their production sites.

The resource aims to help producers achieve a return on their investment from trials and strike a balance between trial rigour and producing commercially relevant results that apply to existing vineyard operations.

A key principle for the guide is that the trial is directed at farm business decision making rather than scientific advancement.

Findings of multiple research projects and case studies with winegrape producers have informed the development of the guide, including trials to inform better management of botrytis bunch rot disease.

Read the guide

Preventing Botrytis bunch rot disease

Project: **Fast-tracking solutions for reliable and climate-responsive wine grape production**

Funding body: Tasmanian Government through the Agricultural Development Fund
Partners: Wine Tasmania
Research team: Evans K, Higgins V, Barnes N, Buntain M

Botrytis bunch rot disease continues to be a major production constraint at many vineyards in Tasmania. It's estimated that the processed value of wine grapes in Tasmania could be 24 per cent higher if costs due to botrytis are recuperated.

We worked closely with Tasmanian wine producers to design and conduct simple on-vineyard producer-led trials to better manage botrytis bunch rot disease. Collaborators from 11 vineyards took part in the second season of the trial and were invited to select a botrytis management practise to test and find out what works best on their site.

The project team supported producers during the trial from idea to data collection and interpretation. The team also facilitated the sharing of trial results among project participants and the broader wine sector to highlight successes and practical implementation.

The project led to improvements in skills and knowledge, greater willingness for experimentation, practise changes, and a desire for future trials.

Researchers attributed the success of the trial to a simple trial design that produced results with minimal data collection, timely access to technical experts and knowledge exchanges among participants.

In 2025 we produced an instructional video that demonstrated how to assess botrytis disease in a vineyard. It was published online, on social media and distributed to Tasmanian wine growers.

The video is another tool to help wine producers assess botrytis in their own trials. It's the latest step to address the problem of botrytis bunch rot in an effort to boost productivity and profitability for wine growers.

The video was supported by extensive resources to help wine growers that are available on our website.

This is important research for Tasmania's wine sector which has a farmgate value of $42 million.

Read more

▾ Botrytis bunch rot disease in riesling grapes.

Zero net emissions horticulture demonstration farm

Project: Alternative Inputs: Zero Net Emissions Agriculture Demonstration Farm

Funding body: Tasmanian Government through the Agricultural Development Fund
Partners: Project steering committee includes Simplot, Premium Fresh and Sumich
Research team: Clarke T, Scott J, Swarts N, Broos K

Australia's first dedicated zero net emissions horticulture demonstration farm has been established at the Tasmanian Institute of Agriculture's Vegetable Research Facility at Forthside in North-West Tasmania.

The site will generate baseline data about greenhouse gas emissions, particularly nitrous oxide, from rotational vegetable crops under conventional Tasmanian farming systems. These results will be compared against alternative management strategies aimed at reducing emissions.

Project lead Dr Tory Clarke said agriculture contributes around 14% of Australia's total greenhouse gas emissions, and nitrous oxide from fertilisers is responsible for almost a quarter of this.

> **"We've established a four-year crop rotation including potato, onion, broccoli, peas and carrots grown under conventional management using typical nitrogen inputs informed by industry,"** Dr Clake said.

"Alongside this we'll be trialling alternative strategies that show potential for lowering emissions and comparing their performance."

The project will measure nitrous oxide emissions in the field, alongside other indicators such as soil health, plant growth, yields, and return on investment.

"There is currently limited validated data for emissions from Tasmania's cool climate vegetable systems. This project will establish what emission patterns actually look like under local growing conditions for each crop, giving us a benchmark to measure mitigation strategies against,'" Dr Clarke said.

Reducing emissions may also deliver production and economic benefits.

"Nitrous oxide emissions represent nitrogen lost from the system. In minimising these losses, we have an opportunity to improve nitrogen use efficiency – increasing the proportion of applied nitrogen that is taken up by the crop for growth. This means more productive systems that use less fertiliser, delivering cost savings and improved returns for growers, while also providing all the environmental benefits of reducing emissions," Dr Clarke said.

"For growers to adopt mitigation strategies they must be economically sustainable, practical, and they need to actually work. This research will provide Tasmanian growers science-backed evidence needed to make decisions for their farms"

Results from the 2025/26 season will be available in 2026, and preliminary findings will be shared with industry through on-farm workshops and demonstrations.

Read more

◂ Researchers walking through Zero-Net Emissions Agriculture Demonstration Farm at the TIA Vegetable Research Facility, Forthside.

▲ TIA Professor Calum Wilson, TIA Vegetable Research Facility Farm Manager Doug Clark, TIA Director Professor Mike Rose, Minister for Primary Industries and Water Gavin Pearce, and Tas Farmers CEO Nathan Calman at the announcement of the PMTV rapid response research project.

Research to support potato industry

Project: **Potato Mop Top Virus (PMTV) - Tasmanian Studies**

Funding body: Tasmanian Government
Partners: Tasmanian Seed Potato Certification Scheme
Research team: Wilson C, Rose M, Swarts N, Tegg R

In October 2025, the Tasmanian Government announced a rapid response research project to deliver practical solutions for managing *Potato mop-top virus* (PMTV).

The project was initiated following the detection of PMTV in Tasmania in July 2025, the first recorded case in Australia, and a subsequent decision by Biosecurity Tasmania that eradication was not technically feasible. This created an urgent need for locally relevant research to support Tasmania's $379 million potato industry.

PMTV is an exotic plant virus that can in some instances induce internal defects in infected potato tubers. It is carried and transmitted by *Spongospora subterranea*, the soil-borne pathogen that causes powdery scab in potatoes. Powdery scab is common in Tasmania and mainland Australia. (Biosecurity Tasmania)

The rapid-response research project is led by Professor Calum Wilson, an internationally renowned plant pathologist with experience working with plant diseases including the soil-borne pathogens of potato and soil health.

Activities include a review of global literature on PMTV, validating a soil test for Australian conditions, assessing impacts of infection and storage on tuber defects, and working closely with industry to inform management strategies.

> "A reliable soil test for PMTV will be a valuable tool to help growers manage risk and make informed management decisions. Currently, there is no validated test in Australia"
> Professor Wilson said.

"This project will collate and test soils for powdery scab and PMTV, supporting the development of an Australian soil test and comparing it with existing tests from North America and soil bait tests, to determine how well they detect and predict pathogen levels in fields."

"As this is the first PMTV detection in Australia, our understanding of how the virus behaves under local conditions is limited. We are reviewing global literature and engaging with international experts to better understand PMTV, its impact, spread and management."

The project will also investigate the impact of PMTV on tuber quality. While internal defects caused by the virus are relatively low, they may be exacerbated by cold storage. Trials will assess how infection influences symptom expression in major potato varieties commonly held in storage, providing insights for post-harvest management.

Read the latest PMTV information on the Biosecurity Tasmania website

Conservation biological control in Tasmanian apple orchards

Project: PIPS 4 Profit pest and disease management (AP22001)

Funding body: Funded by Hort Innovation, using the apple and pear research and development levy, contributions from the Australian Government, and co-investment from Agriculture Victoria.
Partners: Pomewest, NSW Department of Primary Industries and Regional Development, Agriculture Victoria,
Research team: Finch J, Cappadonna J, Shiva Bhattarai, Lynne Forster

Researchers at the Tasmanian Institute of Agriculture are conducting conservation biological control (CBC) trials in Tasmanian apple orchards, supporting an integrated, ecologically based approach to managing key pests.

CBC involves the strategic protection and enhancement of natural enemies that keep pest populations in check, such as lacewings, ladybird beetles, hoverflies and parasitic wasps. It focuses on attracting and supporting these beneficial insects by creating environments where they can thrive and effectively prey on pests.

Project lead Dr Jon Finch, TIA Entomologist, said beneficial insects often struggle to survive in conventional orchards due to a lack of food resources (especially nectar) and pesticide use.

> By providing the right plants and habitat, growers can encourage these insects to stay longer, move into orchards and control pests more effectively. Conservation biological control can act as a cost-effective pest management tool, while also giving growers potential to reduce chemical inputs," he said.

A CBC trial is being established at four commercial orchards in the Huon Valley. Researchers will establish strip plantings of native species outside the main production area, selecting larger native plants suited to the region that can compete with weeds and produce more nectar and pollen.

▲,▸ Establishing a conservation biological control strip at a Huon Valley orchard.

The team will monitor the abundance and movement of natural enemies and assess how far the impact of these plantings extends into nearby apple blocks.

The trial design builds on earlier work through PIPS 4 Profit 3 which showed native plants struggled to establish within orchard inter rows due to competition from weeds, orchard traffic and management practices.

By planting flowering species that provide year-round nectar and pollen, and locating them in safe zones away from spraying, growers can help establish robust predator populations that disperse naturally into orchards. This approach can improve pest control and also strengthen overall orchard biodiversity and resilience.

Livestock Production Centre

Livestock Production Centre

We aim to enhance the productivity and profitability of Tasmania's livestock supply chains while achieving positive social and environmental outcomes.

Our focus areas include:

- Promoting the sustainable use of inputs, including water and nitrogen, through innovative management practices.
- Developing and testing resilient plant varieties and diverse pastures to support rain-fed pasture systems in a changing climate.
- Adapting the grass-fed system to meet evolving societal expectations while ensuring animal welfare and human wellbeing.
- Mitigating greenhouse gas emissions through novel feed additives and forage innovations.
- Delivering extension, development and education programs to strengthen Tasmania's livestock industry.

We also operate the TIA Dairy Research Facility at Elliott in North-West Tasmania, which underwent a muti-million-dollar transformation in 2022, in a project jointly funded by the University of Tasmania and the Tasmanian Government. This is the site of world-leading research into ways to boost the productivity, profitability and sustainability of Tasmania's dairy industry.

Reducing synthetic nitrogen fertiliser

Project: Dairy HIGH2

Funding body: Dairy Australia
Research team: Hills J, Raedts P, Beechey-Gradwell Z, Rawnsley R, Noble B, Verdon M, Marshall A

Dairy HIGH 2 (High Integrity Grass-fed Herds) is a flagship research partnership between the Tasmanian Institute of Agriculture and Dairy Australia, focussed on supporting efficient, profitable and sustainable pasture based dairy systems into the future.

A key part of the program is the innovative farmlet trial, with mini farms established at TIA's Dairy Research Facility at Elliott in North-West Tasmania. These trials test research theories under real-world farming conditions, generating practical insights for industry.

The program set an ambitious target to maintain high pasture and milk solids production per hectare on irrigated pasture, while reducing synthetic nitrogen fertiliser use by 50 per cent.

In 2025, the program received a $1.2 million investment to extend the farmlet trial by a further 12-months, enabling data collection across three consecutive seasons.

TIA Research Fellow Mr Pieter Raedts said the early results are encouraging.

> **"Our aim is to determine whether high levels of pasture and milk production can be achieved from systems that use less synthetic nitrogen fertiliser, and the results so far are promising,"** he said.

"Initial observations in our very productive farmlet trial (some farmlets grow around 20 tonne dry matter per ha per year) suggest that where a high proportion of clover is maintained in pasture, synthetic nitrogen fertiliser inputs can be reduced from around 300 kg/ha to 150 kg/ha. However, success depends on consistently achieving and maintaining that high level of clover content.

"We are eager to see how the farmlets perform over multiple seasons. The extension of this program will allow us to collect three years of replicated herd data to clearly identify the opportunities and challenges of reducing synthetic nitrogen fertiliser."

Valued at $7.7 million over six year (2020-2026), Dairy HIGH2 represents a significant investment into the future sustainability of Australia's dairy sector.

Project insights are shared widely with industry, including a monthly digital newsletter distributed to approximately 400 stakeholder, alongside regular video updates highlighting trial progress.

Read more

Monthly project report

◂ Mr Pieter Raedts and Dr Zac Beechey-Gradwell at the TIA Dairy Research Facility.

Growing red meat productivity by increasing legumes

Project: Growing red meat productivity through the selection and establishment of perennial legumes

Funding body: Meat and Livestock Australia and Tasmanian Institute of Agriculture through the MLA Donor Company

Partners: The Livestock Productivity Partnership (LPP) was a collaborative research and development partnership involving MLA Donor Company (MDC), TIA, NSW Department of Primary Industries, University of New England, University of Melbourne and CSIRO, aimed at boosting livestock productivity and developing new R&D capacity

Research team: Smith R, Hall E, Dolbey B

TIA conducted a research project to help farmers grow the productivity of Tasmania's red meat sector through the selection and establishment of perennial legumes.

The five-year project, which concluded in 2025, was led by TIA Senior Research Fellow, Dr Rowan Smith. It investigated perennial legume species that can successfully persist under low rainfall conditions to fill feed gaps and improve tolerance and productivity under waterlogging.

The project trialled different species and tested how novel sowing practises could advantage legumes during establishment.

The research team worked closely with local red meat producers to ensure the findings were relevant and valuable.

> **"The current low proportion of legumes in Tasmanian pastures is limiting the profitability and productivity of the Tasmanian red meat sector,"** Dr Smith said.

"The project aimed to enhance the legume component of pastures, improve productivity and build climate resilience to a changing climate."

A key finding was that oversowing with legumes is particularly challenging where existing grass species are dominant. The research team found that some form of management to temporarily reduce the competition from the grass is needed (e.g. herbicide application, very heavy grazing, strip tillage) and that greater success is likely when sowing vigorous establishing legumes, particularly annuals.

In the last two years, on farm sowings in collaboration with red meat producers demonstrated the advantages of pasture renovation and good legume content. Regular feed analysis tests were conducted to demonstrate the value of legumes and deep-rooted grasses throughout the growing season.

Read the case studies

▾ Perennial legume demonstration site at Longford.

▾ Red clover planted as part of the perennial legume project.

▲ TIA is conducting a maternal productivity trial on a King Island beef property.

Improving maternal productivity

Project: **Profitable and Resilient Southern Beef Herds**

Funding body: Meat and Livestock Australia
Partners: University of Adelaide, Halter, Tasmanian Beef Industry Trust, TRT Pastoral Group
Research team: Verdon M, Shulz P, Smith R, Rawnsley R, Hall E

A new research trial on King Island is putting maternal productivity under the microscope, exploring how improved nutrition, pasture quality and smarter grazing can boost fertility and overall performance for beef heifers.

Project lead, TIA Senior Research Fellow Dr Megan Verdon, said maternal productivity is a critical area of research and has potential to deliver big gains for beef producers in southern Australia.

Maternal productivity refers to traits such as fertility, calving ease, calf survival and calf growth to weaning.

> **"Previous research has shown that increasing heifer growth rates leading up to breeding improves maternal productivity. Through this research we're aiming to lift heifer conception rates with improvements to nutrition, pasture quality, and adopting smarter grazing practices,"** Dr Verdon said.

One promising innovation under investigation is virtual fencing, a technology already gaining traction on Tasmanian dairy farms but not yet widely used in beef production.

"We're exploring how Halter virtual fencing technology can help increase pasture intake, which may improve reproductive outcomes for young beef cows and deliver positive flow-on benefits throughout their productive lives.

"But more feed isn't enough on its own. We also need to boost the quality of feed grown on farm to ensure the cows' nutritional requirements are being met."

Dr Verdon said effective grazing practices and a high quality feedbase must go hand-in-hand.

"Renovating pastures won't achieve their full potential if it's followed by poor grazing practices. Likewise, better grazing of low-quality feed won't deliver the results that producers need," she said.

An on-farm trial involving 2,000 heifers is being conducted at TRT Pastoral Group's King Island property, a large-scale Angus cattle breeding and finishing enterprise.

TRT Pastoral's Tim Roberts-Thompson is enthusiastic to be trialling Halter virtual fencing technology within the King Island Angus Beef operation.

"We're particularly interested in measuring the impact on heifer performance – from body weight gains through optimising grazing management, to conception rates and successful rejoining after their first calf. This technology has real potential to enhance both animal performance, pasture management, and profitability," he said.

The trial is part of a larger $6.8 million project led by Adelaide University with matching funds from the Meat & Livestock Australia Donor Company, TIA, Halter, and the Tasmanian Beef Trust.

Read more

▼ Dr Megan Verdon leads TIA's maternal productivity trial.

Diverse pastures for resilient, year-round feed supply

Project: **Pasture 365**

Funding body: Australian Government Future Drought Fund Long Term Trials Program (Round 1) through the Department of Agriculture, Water and the Environment
Partners: Deakin University, University of Melbourne, Agriculture Victoria, University of Western Australia, Department of Primary industries and Regional Development WA, Department of Primary Industries and Regions SA, South Australian Research and Development Institute, Bush Heritage Australia, and a range of producer groups.
Research team: Smith R, Hall E, Cruickshank A, Dolbey B.

The impacts of climate change and sustained periods of dry conditions in Australia is putting stress on the pasture feedbase for livestock production across the country. This research program, Pasture 365, is trying to address that problem.

TIA is a partner in the project, led by Deakin University, that's determining whether growing a large number of diverse pasture species within the same paddock can result in drought resilient pastures and enable a feedbase that can provide year-round feed for livestock.

▲ Dr Rowan Smith at the Pasture 365 site at Campbell Town.

Nine sites have been established across southern Australia. In Tasmania, we have established three sites - at Campbell Town, Pipers River and Hagley that represent a mixture of medium-high and low rainfall areas. The trial sites are focussed on experimenting with different combinations of pasture mixes to identify combinations that are more resilient to extended and more regular periods of dry times.

Dr Rowan Smith, Tasmanian lead of the five-year project, and his research team regularly monitored the sites during 2025, assessing productivity and persistence across a variety of simple and complex pasture mixes.

Satellite demonstration sowings on commercial farms have been undertaken in Bothwell, Ringarooma, Pyengana and Cressy. The project team work with producers to identify pasture mixes that may be resilient on their farms and monitor progress.

In 2025, Dr Smith led a field trip for project partners to three of the Tasmanian focal sites that are part of the project - at Campbell Town, Hagley and Pipers River. It was part of the Pasture 365 Symposium that was held in northern Tasmania. Several field walks for farmers and agricultural groups were also held to highlight the project. The important research was also featured in an episode of ABC Landline.

Read more

◂ Pasture 365 field walk held at Hagley Farm School in February, 2025.

Reducing methane emissions from livestock

Project: **Natural bioactive compounds for methane emission abatements**

Funding body: JM Roberts Charitable Trust
Research team: Omede A, Kocharunchitt J, Li L (honours student)

Methane emissions from livestock remain a significant contributor to Australia's greenhouse gas emissions, accounting for around 70 per cent of methane derived from the agriculture sector. Reducing methane emissions is a key challenge, particularly as producers seek solutions that maintain productivity while improving environmental outcomes.

Dr Apeh Omede led a research project investigating whether new types of natural feed additives could address this issue. The study explored natural bioactive compounds as a sustainable alternative to synthetic additives, with a focus on maintaining animal health, growth and production while reducing livestock methane emissions.

Using laboratory-based experiments, the research team simulated the fermentation process that occurs inside a sheep's stomach. Two natural bioactive compounds - one with probiotic functions and the other, a protein containing compound – were introduced into a model rumen system and tested across multiple doses and incubation periods.

> "There's an emerging focus that natural bioactive compounds are a sustainable alternative to synthetic feed additives," Dr Omede said.

While direct methane output has not yet been investigated, there are several strong indicators of anti-methane emission activity that has emerged. Notably, there was an increase in propionate which is a fatty acid produced in livestock stomachs, alongside a reduction in the ratio of acetate-to- propionate ratio. This shift is widely associated with lower methane production and positive effect on productivity.

The research also observed an increase in total volatile fatty acids, which suggests more efficient livestock stomach fermentation overall.

▲ Dr Apeh Omede.

"It's likely there can be methane mitigation through these natural compounds, and they can also support livestock health and productivity," Dr Omede said.

"The findings highlight the untapped potential of naturally derived compounds to improve the sustainability of livestock systems. As climate pressures on agriculture intensify, such innovations could play a key role in reducing methane."

Future animal trials are planned to validate laboratory findings under real-world conditions.

Read more

Climate smart feed additive strategies

Project: Antimethanogenic Feed Additive Strategies for Low Emission Ruminant Production

Funding body: Department of Natural Resources and Environment Tasmania, via the Agricultural Development Fund

Research team: Rawnsley R, Bowman J, Omede A, Ahmad I (PhD Candidate).

Enteric methane emissions from ruminant livestock (cattle, sheep, and goats) represent a major climate challenge for Australian agriculture, particularly in pasture based beef and dairy systems, where practical mitigation options must align with productivity goals and on farm feasibility. This ongoing PhD project by Ibrahim Ahmad investigates climate smart feed additive strategies, informed by rumen microbiome function, to support low emission, high performing ruminant production and industry adoption.

The research evaluates the anti-methanogenic potential of rumen modifiers in dairy cows managed under extensive grazing conditions. The feed additive was evaluated to determine whether methane suppression can be achieved while maintaining a stable rumen microbial ecosystem in grazing dairy cows.

An 18 week supplementation trial was conducted at the TIA Dairy Research Facility, involving 24 grazing dairy cows between November 2025 and March 2026. This trial was designed to explore the effects of a rumen modifier on methane emissions, rumen microbiome, production performance, and the natural grazing behaviours of lactating dairy cows in the paddock.

A central premise of the project is that maintaining rumen microbiome stability during feed additive supplementation for enteric methane mitigation is critical for preserving normal fermentation processes, feed utilisation, animal health, and desirable production performance in ruminants.

Methane mitigation strategies that disrupt the rumen ecosystem risk compromising dry matter intake, feed efficiency, and productivity. Accordingly, this project places strong emphasis on rumen microbiome informed intervention design, identifying supplementation approaches that reduce methane emissions while supporting microbial balance and animal adaptation under grazing conditions. Enteric methane and hydrogen emissions are measured in the paddock using the GreenFeed system, enabling robust assessment of mitigation performance under realistic grazing conditions. This is in addition to measurements of animal performance (body weight, milk yield, and milk solids) and rumen microbiome responses.

This project integrates climate outcomes with productivity and biological resilience to provide industry-relevant evidence supporting the adoption of feed additive technologies that are both environmentally effective and commercially viable for Australian livestock producers.

▾ PhD candidate Ibrahim Ahmad

▾ The GreenFeed system at TIA's Dairy Research Facility, Elliott.

Learning and Teaching

Learning and Teaching

Agricultural science courses at the University of Tasmania deliver a globally relevant education grounded in contemporary agriculture and food systems.

Delivered at both the Hobart and Launceston campuses, our flagship Bachelor of Agricultural Science with Honours degree combines hands-on, practical learning with strong scientific foundations that is informed by the research expertise within the Tasmanian Institute of Agriculture and Tasmania's innovative industry leaders.

With a strong focus on real-world application, the degree prepares graduates to address critical challenges and work in careers spanning farming, agronomy, natural resource management government advisory roles, agribusiness, aid work in developing countries, technology development, and food safety.

TIA also offers the Masters of Agriculture and Food Sciences, providing advanced, contemporary knowledge to support graduates pursuing careers in research, innovation and leadership roles across the agriculture and food sectors.

Scholarships total more than $150,000

Through the generous support of donors, each year we offer numerous scholarships to support students studying agricultural science at the University of Tasmania. These scholarships play a vital role in attracting and enabling the next generation of agricultural professionals.

In 2025, 11 students were awarded scholarships totalling more than $158,000, helping to reduce financial barriers and enabling recipients to focus on their studies and career development.

One recipient, second-year student Ava Christie, relocated from Albury in New South Wales to study in Hobart and was awarded the Robert Menary Tasmania University Scholarship in Agricultural Science. She is eager to learn as much about agricultural science as possible to support future career opportunities.

"Coming from a regional city, I only discovered a deep passion for agriculture mid-way through high school.

I was concerned with global sustainability and food security and found agricultural science to be the basis of working on these issues," Ava said.

"Since then, I've undertaken work experience with diverse farming operations, taken part in diverse university field trips that have allowed me to investigate an incredible range of agricultural sciences, from regenerative practises to orchard management to goat's cheese-making.

The scholarship has been wonderful in providing me with the time and financial capacity to engage both in my studies and in further opportunities around research, development and industry experience."

The Robert Menary Tasmania University Scholarship in Agricultural Science is funded by Hort Innovation and Professor Robert Menary, recognising his significant contribution to agricultural science education and research.

Fifth-generation Tasmanian farmer, Rupert Hansen, was awarded the Fruit Growers Tasmania Honours Scholarship. For his honours research project in 2025, Rupert worked with TIA researchers to research carbon isotope fractionation in apple trees to identify how orchard floor management can improve water use efficiency in perennial horticulture systems.

"With climate variability, resource scarcity and a growing population, it's becoming gradually more and more difficult to maintain sustainable growth in our production systems. I'm keen to see what we can come up with," Rupert said.

"By studying agricultural science, I am opening the doors to many future opportunities, equipping myself with the knowledge and tools to innovate agriculture and feed the world into the future."

Read more

◂ Student examining insects at The Shed, Inveresk.

▴ Ava Christie was awarded the Robert Menary Tasmania University Scholarship in Agricultural Science.

▲ The first cohort of Bachelor of Agricultural Science students graduated in Launceston.

A milestone moment

In 2025, we celebrated a significant milestone for the Bachelor of Agricultural Science, with the first cohort of students graduating from our Launceston campus.

The results highlight the strength of the program and the demand for our graduates, with 80 per cent of students securing employment in the agricultural industry by the time they graduated, with many receiving multiple job offers.

Since 2023, the Bachelor of Agricultural Science with Honours has been delivered face-to-face in both Hobart and Launceston, giving more students the opportunity to study close to home while building connections with industry in the region.

Launceston graduate, Bronte Legro, said the ability to study locally was a huge advantage. In 2026, she will begin with Rabobank's Country Banking Graduate Program, working across locations around Australia.

> **"I've been able to continue working in the industry while completing my degree, which has helped me build strong professional networks and directly apply my studies. Being surrounded by diverse farms and agribusinesses also means we've been constantly exposed to real-world practice and innovation,"** Bronte said.

Fellow graduate Theo Ives also valued the flexibility of studying in his hometown. He secured a role as a field officer for Extractas Bioscience in the final year of his studies.

"The freedom to not have to sacrifice other parts of my life, such as football and work was welcome. Being so close to a lot of the state's intensive agriculture in the north of the state also benefitted students," Theo said.

TIA Director Professor Mike Rose said expanding delivery of the degree to both campuses has helped remove barriers to study and strengthen pathways into agricultural careers.

"We want to create opportunities for more Tasmanians to study closer to home and have designed our course to align with the unique demands of the Tasmanian agricultural industry," Professor Rose said.

"The course is a very hands-on high quality educational experience for our students, leveraging the agricultural industry in northern Tasmania along with the world-leading research that TIA conducts."

Read more

Celebrating student excellence

Each year, the Tasmanian Institute of Agriculture recognises the exceptional achievements of our undergraduate and masters students through the Student Award Ceremony. This is an important event that celebrates academic excellence, leadership potential, and commitment to the future of agriculture.

In 2025, 14 prizes were awarded to students who have demonstrated outstanding results across a range of areas. Awards include greatest proficiency, best overall academic performance, excellence in thesis research, and achievements within specialist areas of study. Students are also recognised for their potential to make a significant contribution to agricultural production in Tasmania.

Many of these awards and prizes are named in honour of respected industry leaders and researchers who have made lasting contributions to Tasmania's agricultural sector. Their legacy continues through the next generation of graduates, who are equipped with the skills, knowledge and ambition to drive the industry forward.

By recognising excellence and nurturing talent, we are helping to build a skilled and innovative workforce to support the future of Tasmania's agricultural sector.

▾ Recipient of the Alan Bray Prize in Animal Science, Bronte Legro, with TIA Director Mike Rose at the student award presentation in Launceston.

▴ The recipient of the first-place award for the honours presentation, Rupert Hansen, with Mike Rose and Les Baxter at the end of year student award presentations in Hobart.

Sustainable innovation

The next generation of agricultural scientists will bring valuable skills in sustainable innovation to their future work, thanks to a partnership between the University of Tasmania and Australia's national science agency, CSIRO.

Drawing from five years of research in CSIRO's Responsible Innovation Future Science Platform, the two organisations have co-developed a first-of-its-kind unit for undergraduate students: Responsible and Sustainable Innovation.

With real-world case studies from food and agriculture to health and biosecurity, the unit supports industry needs by developing work-ready graduates who understand innovation's broader consequences.

Dr Kamal Singh, Lecturer in Sustainability at the Tasmanian Institute of Agriculture, said the unit covered topics including the ethics of using animal studies to develop vaccines, the risk and benefits of technologies that speed up natural cycles to remove carbon dioxide, and social acceptance of alternative proteins, like insects, and plant and lab-based protein options.

"This isn't a subject just for science students; it's for anyone interested in the social, political and ethical dimensions of future-shaping, disruptive technologies," Dr Singh said.

"We want to build the capacity of students across different disciplines to embody a sense of responsibility in the innovation and associated research processes they may one day be involved in and that will shape our collective future."

Read more

Learning beyond the classroom

The Bachelor of Agricultural Science with Honours is a hands-on degree, giving students meaningful opportunities to engage directly with industry and experience the realities of modern agriculture.

From their first year, student step beyond the classroom into working agricultural enterprises across Tasmania to gain practical insights into livestock production, horticulture, mixed enterprise farming, and sustainable land management. These experiences bring classroom concepts to life.

Students also gain exposure to emerging technologies shaping the future. In 2025, students had an opportunity to observe a crop spraying drone in action, highlighting the increasing role of prevision agriculture and automation in the sector.

A highlight of the first-year experience is the annual multi-day field trip, where students travel to North-West Tasmania for a behind-the-scenes experience at leading agricultural enterprises and TIA's research facilities.

Through these experiences, students connect with industry leaders, explore diverse career pathways and develop a strong understanding of Tasmania's agricultural systems. This emphasis on real-world learning ensures graduates are industry-ready and equipped to contribute to a productive, sustainable future for agriculture.

▲ Bachelor of Agriculture Science students on a field trip.

▲ Students at the mid-year Honours Seminar.

Honours research driving real-world impact

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Watch honours presentations

Learn more

Engagement

Dairy Research Facility Field Day

Each year, the Tasmanian Institute of Agriculture hosts a Field Day at the Dairy Research Facility at Elliott in North-West Tasmania to come together with industry, share knowledge and encourage innovation and practice change.

The 2025 event attracted more than 100 attendees including farmers, industry leaders, researchers and policymakers, all keen to explore the latest developments in dairy farming research and their practical applications.

The program featured presentations on key topics shaping the future of the dairy industry, including virtual fencing, strategies to reduce livestock emissions, dairy business benchmarking, natural capital accounting, and nitrogen management. These sessions highlighted how research is supporting more productive, profitable and sustainable farming systems.

Attendees also participated in a guided walk of the research farm, providing valuable opportunities for in-field discussion on multi-species grazing management and soil health.

Events such as this are an important way that TIA communicates its research with industry, ensuring findings go beyond academic journals and that practical information reaches the people who can apply it on-farm.

Watch the presentations

◂ Soil pit demonstration at the TIA Vegetable Research Facility Field Day, Forthside.

▴ Farm walk at the TIA Dairy Research Facility Field Day, Elliott.

Vegetable Research Facility Field Day

Another annual event is the Tasmanian Institute of Agriculture's Field Day at the Vegetable Research Facility at Forthside in North-West Tasmania, serving as a valuable platform to connect research with industry.

Forthside is known as a "sandpit" for agricultural research and innovation, enabling researchers to experiment with new ideas, test their effectiveness under real-world conditions, and work closely with industry to support adoption.

The 2025 Field Day attracted more than 100 attendees, including farmers, agronomists, service providers, researchers and students. The event was an opportunity for industry to connect with the latest research and practical insights supporting Tasmania's horticulture sector, featuring expert presentations, a panel discussion and a guided walk around the research farm to see TIA and industry-led trials in action.

Topics included biosecurity, potato mop top virus, emissions reduction, disease management in pyrethrum, growing value from irrigation, insects in agriculture, and heat stress in strawberries.

The event also marked the launch of TIA's Strategic Plan 2026-2031, which sets clear priorities to strengthen Tasmania's agricultural competitiveness and support the continued growth of Tasmania's economy. Speaking at the event, TIA's Director Professor Mike Rose highlighted the importance of strong collaboration between research and industry to ensure innovation delivers real impact on-farm.

Watch the presentations

▾ Farm walk at the TIA Vegetable Research Facility Field Day, Forthside.

Science Behind the Plate

In August 2025, the Tasmanian Institute of Agriculture hosted its second Science Behind Your Plate dinner, a flagship event as part of the agriCULTURED Festival in Launceston. This sold-out event brought together farmers, researchers, chefs and food enthusiasts for an immersive evening that explored the science and stories behind Tasmanian produce.

Designed as an innovative model of community engagement, the dinner transforms agricultural research into a unique public dining experience. Each course was paired with insights from TIA researchers, connecting guests directly with the science underpinning food production, from soil health and climate resilience to sustainable farming practices.

The format creates a powerful platform to communicate complex research in an accessible and engaging way, strengthening community understanding of the role agricultural science plays in everyday life.

A highlight of the evening was the collaboration with guest chef Cameron Matthews of Mapleton Public House, who crafted a four-course menu inspired by Tasmanian ingredients and research themes. Each dish was designed to reflect both the provenance of the produce and the science behind its production, creating a distinctly Tasmanian narrative on the plate.

The event was generously supported by the TAS Farm Innovation Hub, Mudbar Restaurant, guest chef Cameron Matthews, and Landfall Angus.

Subscribe to our mailing list to find out about upcoming events

◂ Guest Chef Cameron Matthews at the Science Behind Your Plate dinner.

Let it Grow vegetable growing competition

As part of the Tasmanian Institute of Agriculture's commitment to inspiring the next generation of agricultural professionals, the Let it Grow vegetable growing competition continues to expand its reach and impact across the state.

Now in its third year, the program has grown from just seven participating schools to almost forty in 2025, engaging hundreds of students from diverse regions of Tasmania. The program is designed for primary and secondary schools and provides a hands-on introduction to agricultural science by encouraging to apply their knowledge in a real-world setting.

At the heart of the competition is a three-month growing challenge, where students cultivate a vegetable crop using provided seeds and following competition guidelines, with the goal of producing the largest specimen. The program culminates in a prize ceremony held at Agfest, where vegetables are weighed, stories are shared and prizes are awarded.

In 2025, the program was further enriched with the introduction of the Soil Your Undies challenge, delivered in partnership with the TAS Farm Innovation Hub.

As part of this activity, students were invited to bury a pair of 100 per cent cotton undies in the school garden beds, retrieve them several weeks later, and bring them to Agfest to be judged. The level of decomposition provides a simple, visual indicator of soil biological activity, helping students understand the importance of healthy soils in food production systems.

The 2025 Let it Grow winner was Wynyard High School with a black radish weighing 1057 grams, and the Soil Your Undies winner was Bayview Secondary College.

These challenges are designed to build awareness of the science, innovation and career opportunities within agriculture and food systems. By connecting classroom learning with hands-on experience, this program supports TIA's broader strategic goal of shifting perceptions of agriculture and strengthening the future workforce pipeline.

In 2025, the competition was sponsored by the TAS Farm Innovation Hub, Horticultural and Landscape Supplies (HALS), and Seed Freaks.

Learn more

▾ The winning radish grown by Wynyard High School, Soil Your Undies was won by Bayview Secondary College, students from Wynyard High School with their winning Let it Grow entry.

2025 TIA Research Projects

Funding body	Industry partners	Title of project	Research team
Agriculture Victoria		Optimising netting timing and colour to alleviate climate change and biennial bearing constraints on apple production	Nigel Swarts
AgriFutures		Plant production agrivoltaics across southern Australia	Matthew Harrison, Tony Vaea, Ganesh Pandey, Bow Souter
AgriFutures		AgriFutures Tasmanian Agriculture Digital Literacy Project	Sandra Knowles, Caleb Connor, Grant Gilmour
Australian Centre for International Agricultural Research		Managing risk in South East Asian forest biosecurity	Darren Turner, Caroline Mohammed, Morag Glen, Rebecca Harris, Russell Warman, Silvi Octalina
Australian Education Management Group		OUC PhD candidate sponsorship	John Bowman
Australian Meat Processor Corporation Ltd	Australian Meat Processor Corporation and its Members	Premature spoilage of red meat in supply chains	Jay Kocharunchitt, Laura Rood
Australian Research Council	Queensland Health, Trajan Scientific and Medical, Thermo Fisher Scientific Australia, Noumi , Norske-Skog (Australasia)	ARC Training Centre for Hyphenated Analytical Separation Technologies	Brett Paull, Kevin Thomas, Robert Shellie, Cassandra Rauert, Estrella Sanz Rodriguez, Fernando Maya Alejandro, Paul Haddad, Andrew Bowie, Snehal Jadhav, Russell Keast, Jake O'Brien, Daniel Dias, Vipul Gupta
Australian Research Council		Industry fellowships program selection advisory committee (IFPSAC) 2023 - 2024	Holger Meinke
Australian Research Council		BioClay sustainable crop protection	Katherine Evans, Neena Mitter
Australian Research Council		Reducing environmental footprint by improving phosphorous use efficiency	Meixue Zhou, Sergey Shabala, Lana Shabala, Guoping Zhang, Zhong-Hua Chen, Fanrong Zeng, Zhongyang Huo, Jihua Tang, David Leah
Australian Research Council		Optimising feeds to support ecosystem-based aquaculture	Peat Leith, Louise Adams, Chris Carter, Catriona MacLeod, John Bowman, Julia Blanchard, Karen Alexander, Beth Penrose, Duncan Cameron, Benjamin Halpern
Australian Research Council	Syrinx Environmental, Integrated Value Ecosystems Economies	Automated sensors for a wetland in a box	Shane Powell, Michael Breadmore, Ljiljana Pantelic, Marni Amuno
Australian Research Council		Pyrethrum in half the time: genes and systems to annually crop a perennial	Tamieka Pearce
AW Howard Memorial Trust		Biochar-bromoform interactions in the rumen	Richard Rawnsley, Apeh Omede
AW Howard Memorial Trust		Rapid assessment of nutritional value and performance of pasture species in the field using chlorophyll fluorescence	Tory Clarke
Botanical Resources Australia Pty Ltd		Investigating the genetics of pyrethrum vernalisation	Stacey Pilkington, Tamieka Pearce, Jason Scott
Botanical Resources Australia Pty Ltd		Mechanisms and spread of fungicide resistance in pyrethrum fungal pathogens	Tamieka Pearce, Jason Scott
Brotherton Seed		Brotherton green pea genotypes	Alistair Gracie, Peter Targett
Charles Sturt University		Expanding options for sorghum - 1	Adel Yousif, Christopher Blanchard, Daniel Waters
CRC for High Performance Soils Ltd		Next generation below ground sensor communication using seismic waves for smart soil applications	Marcus Hardie
CRC for High Performance Soils Ltd		Commercialising the Penetrometer (Bandicoot)	Marcus Hardie, Caroline Mohammed, Chris Boucher, Simon Edwards, Leonore Ryan, Muhammad Shahinur Alam

Funding body	Industry partners	Title of project	Research team
CRC for High Performance Soils Ltd		Evaluating novel approaches for drought resilience through capitalising on an established network of long-term trials.	Marcus Hardie, Caroline Mohammed, Simon Edwards, Richard Bell, Terry Rose, Murray Hart
CRC for High Performance Soils Ltd		Commercialising the 'Bilby' below ground wireless sensor node	Marcus Hardie, Caroline Mohammed, Stephen Cahoon, Richard Ballard, Simon Edwards, Leonore Ryan, Matthew Singline
CRC for High Performance Soils Ltd		Rapid field-based soil measurement approach using an integrated smartphone system.	Michael Breadmore, Richard Doyle, Ravi Naidu, Liang Wang, Lawrence Di Bella, Rob Milla, Fernando Maya Alejandro, Ashad Kabir
Dairy Australia Limited	Dairy Australia	Dairy Farm Monitor Project Tasmania	James Hills, Symon Jones, Rohan Borojevic, Jacob Lightman
Dairy Australia Limited	Dairy Australia	Soil Function in Varied Pasture Systems	James Hills, Zachariah Beechey-Gradwell
Dairy Australia Limited	Dairy Australia	Dairy HIGH 2	Richard Rawnsley, James Hills, Peter Raedts, Zac Beechey-Gradwell , Ben Noble, Megan Verdon, Adam Langworthy, Symon Jones, Jacob Lightman, Rohan Borojevic
Deakin University		Feed 365: Can more diverse pastures build resilience to support 365 days of feed production	Rowan Smith, James Hills, Cindy Cassidy
Department of Agriculture Water and the Environment		Towards landscape-level drought adaptation through multidisciplinary systems analysis: Charles Sturt University collaboration	Karen Christie-Whitehead, Caroline Mohammed, Matthew Harrison, Ke Liu, Cindy Cassidy
Department of Agriculture Water and the Environment		Towards landscape-level drought adaptation through multidisciplinary systems analysis: University of Melbourne collaboration	Karen Christie-Whitehead, Caroline Mohammed, Matthew Harrison, Ke Liu, Michael Tausz
Department of Agriculture Water and the Environment		Drought resilience Tasmania - actionable knowledge and solutions for sustainable prosperity	Sue Kilpatrick, Robert Anders, Byeong Kang, Kimberley Norris, Kim Beasy, Sandra Knowles, Greg Jordan, Menna Jones, Stuart Auckland, Caroline Mohammed, Brian Field, Katherine Evans, Stuart Ferguson, Matthew Wilson, Bianca Coleman, Alistair Gracie, Matthew Harrison, Julianne O'Reilly-Wapstra, Jing Tian, Leon Barmuta, Sharon Fraser, Melanie Bryant, Swee-Hoon Chuah, Natalie Stoeckl, Nicoli Barnes, Vaughan Higgins, Ananda Maiti, Saideepa Kumar, Muhammad Bilal Amin
Department of Agriculture, Fisheries and Forestry	Ag Logic, Swan Systems	Advancing precise, climate-smart irrigation for cotton and dairy industries	Benjamin Noble, James Hills, Peter Raedts, Alison McCarthy
Department of Agriculture, Fisheries and Forestry		Adapting temperate viticulture and horticulture to seasonal drought and climate volatility	Karen Christie-Whitehead, Caroline Mohammed, Nigel Swarts, Matthew Harrison, Harriet Walker, Ke Liu, Ranju Chapagain
Department of Agriculture, Fisheries and Forestry		Capacity Building: Regional Soil Coordinators	Sandra Knowles, Caroline Mohammed, Tony Vaea, Liana Williams, Alex Russell
Department of Education, Skills and Employment		Boosting research capability to develop value-added products for the food and wood industries in regional areas.	Brett Paull, Jason Smith, Louise Wallis, Gregory Nolan, John De Vries, Jon Shanks, Assaad Taoum, Roger Stanley, Stuart Thickett, Julianne O'Reilly-Wapstra, Alex Bissember, Ali Tolooiyan, Gholamreza Kefayati, Fernando Maya Alejandro
Department of Industry, Innovation and Science		CRC for High Performance Soils	Richard Doyle, Marcus Hardie, Caroline Mohammed, Stephen Cahoon, Paul Neumeyer, Bill Cotching
Department of Industry, Innovation and Science		Development of complementary preservatives for Australian meat products	Tom Ross, Lyndal Mellefont, Grant Swanepoel, Jay Kocharunchitt

Funding body	Industry partners	Title of project	Research team
Department of Industry, Science, Energy and Resources		Advanced machine cognition to segregate effects of climate from management at the landscape scale	Matthew Harrison, Ke Liu
Department of Natural Resources and Environment Tasmania		Apple virus elimination	Calum Wilson
Department of Natural Resources and Environment Tasmania		Assessing circular nutrient economies for resilient Tasmanian soils	Calum Wilson, Caroline Mohammed, Harriet Walker, Bianca Das
Department of Natural Resources and Environment Tasmania		Potato mop top virus (PMTV) - Tasmanian studies	Calum Wilson, Nigel Swarts, Michael Rose
Department of Natural Resources and Environment Tasmania		TIA Northwest Tasmania capital developments project	Jason Scott, James Hills, Les Baxter
Department of Natural Resources and Environment Tasmania		Fast-tracking solutions for reliable and climate-responsive wine grape production.	Katherine Evans, Michele Buntain, Nicoli Barnes, Vaughan Higgins
Department of Natural Resources and Environment Tasmania		Research & Development Contractual Agreement - TIA JVA	Michael Rose
Department of Natural Resources and Environment Tasmania	Wine Tasmania	Beating smoke taint with sparkling wine : climate change adaptation for the Tasmanian wine industry	Naomi Vinden, Rob Shellie, Dugald Close, Karina Dambergs, Oliver Overman
Department of Natural Resources and Environment Tasmania		Control of weed poppies in commercial poppy production	Pattie Weichelt, Tamieka Pearce, Jason Scott
Department of Natural Resources and Environment Tasmania	Halter	Virtual fencing: A game changer for pasture-based livestock systems	Megan Verdon, Richard Rawnsley, Ian Hunt
Department of Natural Resources and Environment Tasmania	Sea Forest, Fonterra	On-farm adoption of low emissions feed technologies for improved profitability of the Tasmanian livestock sector	Richard Rawnsley, John Bowman, Matthew Harrison, Peter Raedts, Rohan Borojevic, Apeh Omede, Karen Christie-Whitehead
Department of Natural Resources and Environment Tasmania		Microbes against climate change: A low cost electronic nose to support soil health and resilience via soil carbon sequestration	Shane Powell, Marcus Hardie, Caroline Mohammed, Chris Boucher, Simon Edwards, Charissa Bensted, Philip Young, Muhammad Shahinur Alam
Department of Natural Resources and Environment Tasmania		Rapid detection systems for pyrethrum pathogens	Stacey Pilkington, Tamieka Pearce, Jason Scott
Department of Natural Resources and Environment Tasmania		Research-based monitoring, evaluation and learning to support the Farm Business Resilience Program in Tasmania	Sue Kilpatrick, Liana Williams, Nicoli Barnes, Saideepa Kumar

Funding body	Industry partners	Title of project	Research team
Department of Natural Resources and Environment Tasmania		Alternative Inputs: Zero Net Emissions Horticulture Demonstration Farm	Tory Clarke, Nigel Swarts
Department of Natural Resources and Environment Tasmania		Growing value from irrigation for Tasmanian agriculture.	Nigel Swarts,Caroline Mohammed, Hames Hills, Steven Ives, Oliver Overman, Liana Williams, Marcus Hardie, Ana Avila
Grains Research & Development Corporation		Increasing intrinsic heat tolerance of wheat through improved genetics in the source-sink relationship	Meixue Zhou, Chenchen Zhao, Peter Johnson
Grains Research & Development Corporation		Understanding the impacts of waterlogging on barley, canola and fababean	Meixue Zhou, Peter Johnson, Matthew Harrison, Ke Liu, Chenchen Zhao
Grains Research & Development Corporation		Monitoring and screening: monitoring of net blotch populations for new virulences of industry significance	Meixue Zhou, Peter Johnson, Tara Garrard, Hari Dadu, Lisle Snyman, Xuechen Zhang, Judy McIlroy, Ben Ovenden, Merrin Spackman, Sanjiv Gupta, Anke Martin, Noel Knight, Buddhika Dahanayaka
Halter New Zealand		Welfare assessment of cows using halter virtual fencing: focus on lameness, human–animal bond, and emotional state	Oliver Radford, Megan Verdon, Sophie Bandura
Hort Innovation	Simplot, Botanical Resources Australia, Driscolls, Costas, Hansen Orchards, Reid Fruits, Potatoes New Zealand, Premium Fresh, Bejo, South Pacific Seeds, Fruit Growers Tasmania	Sustainably growing horticulture value in cool climate Australia	Nigel Swarts, Calum Wilson, Dugald Close, Alistair Gracie, Jason Scott, Michele Buntain, Tory Clarke, Alieta Eyles, Nathan Tivendale, Pippa French, Jonathon Amponseh, Ryan Warren
Hort Innovation		Optimising apple production systems through PIPS 4 Profit	Nigel Swarts, Dugald Close, David Page, Michele Buntain, Leticia Alves Carvalho Reis, Ramandeep Singh
Hort Innovation		PIPS4 Profit: sustainable soils for the apple industry	Nigel Swarts, Dugald Close, Morag Glen, Ramandeep Singh, Michele Buntain
Hort Innovation		DPIRD Optimising protected cherry production (CY24004)	Dugald Close, Nigel Swarts, Leticia Alves Carvalho Reis
Hort Innovation		MU21007 Pest and disease management for the Australian mushroom industry	Dugald Close, Warwick Gill
Hort Innovation		Progress on bumble bees as commercial pollinators in Australia: update on risks and opportunities	Jonathan Finch
Hort Innovation		AP22002 pear production systems	Sally Bound, Ian Goodwin
Hort Innovation		AP22001 PIPS4 Profit - pest and disease management	Stephen Quarrell, Greg Lefoe, Ian Hunt, Ryan Warren, Jonathan Finch
Hort Innovation		Using pheromones and traps in the management of mirids and vegetable bugs	Stephen Quarrell, Jonathan Finch
Ian and Shirley Norman Foundation		Innovative methods for the management of varroa destructor in Australia	Ryan Warren
JM Roberts Charitable Trust		JM Roberts seed funding for sustainable agriculture	Peat Leith, Michael Rose, Saideepa Kumar
Koala Cherries	Koala Cherries	Improve anthocyanin content in cherries	David Nichols, Dugald Close, Ramandeep Singh Sidhu
Landcare Tasmania		Climate resilience in agrisystems	Kerry Bridle, Caroline Mohammed, Kathleen Beyer, Peter Stronach
Marine Bioproducts CRC		Assessing the benefits of sea urchin processing waste as a soil ameliorant in commercial field trials	Nigel Swarts, John Keane, Harriet Walker, Ian Dutton
Meat and Livestock Australia	Meat and Livestock Australia and its Members	Shelf-life predictive model development for vacuum-packed wagyu beef	Jay Kocharunchitt, Laura Rood

Funding body	Industry partners	Title of project	Research team
Meat and Livestock Australia	Meat and Livestock Australia and its Members	Evaluation of shelf-life of vacuum-packed beef in ethylene-vinyl alcohol film	Jay Kocharunchitt, Laura Rood
Meat and Livestock Australia	Meat and Livestock Australia and its Members	Shelf-life predictive model development for vacuum-packed goat	Jay Kocharunchitt, Laura Rood
Meat and Livestock Australia		Sustainable pathways to CN30	Mark Hovenden, Karen Christie-Whitehead, Matthew Harrison
Meat and Livestock Australia		Growing red meat productivity through the selection and establishment of perennial legumes	Peter Ball, Rowan Smith, Gary Martin, Adam Langworthy, Beth Penrose
Meat and Livestock Australia	MLA	Serradellas for new environments	Rowan Smith, Gary Martin, Beth Penrose, Richard Simpson, Cameron Murray, Richard Hayes, Rebecca Haling, Carol Harris, Adam Stefanski
Meat and Livestock Australia	MLA	100,000 cow project: producing profitable and resilient southern beef herds	Megan Verdon, Rowan Smith, Richard Rawnsley, Emily Hall, Penny Shulz
Natural Heritage Trust		Circular nutrient economies for climate resilient soils	Bianca Das
South Australian Research and Development Institute		Management and diagnosis of grapevine trunk disease in vineyards and nurseries	Kara Barry, Mark Sosnowski
South Australian Research and Development Institute		Australian Pastures Genebank germplasm regeneration	Rowan Smith, Gary Martin
Sustainable Timber Tasmania		Nutrient enriched biochar for forestry seedling growth	Caroline Mohammed, Harriet Walker, Bianca Das
Tasmanian Beef Industry (Research and Development) Trust	Beef Industry via Beef Industry Trust, Agsent	Advancing productivity and methane assessment technologies on Tasmanian beef farms	Richard Rawnsley, James Hills, Rohan Borojevic
Tasmanian Quality Meats	Tasmanian Quality Meats	TQM shelf-life assessment	Jay Kocharunchitt, Laura Rood
W & E Health Pty Ltd		Research Hub for Traditional Chinese Herbs	Dugald Close, Alieta Eyles, Sandra Garland
Westpac Banking Corporation		2023 Westpac Future Leaders Scholar: Rebekah Ash	Matthew Harrison, Rebekah Ash
Wine Industry of Tasmania	Wine Tasmania	Tasmanian wine cool climate research program	Dugald Close, Nigel Swarts, Harriet Walker
Zero Net Emissions from Agriculture CRC		ZE-Ag CRC producer demonstration site host agreement TIA Dairy Research Facility	Richard Rawnsley, Benjamin Noble, James Hills, Peter Raedts, Les Baxter, Andrew Marshall
Zero Net Emissions from Agriculture CRC		Zero Net Emissions from Agriculture Cooperative Research Centre (ZNE-Ag CRC)	Richard Rawnsley, Jason Scott, Michael Rose

Higher Degree Research Projects

Student		Research title
Bhusal	Kiran	Determination of sucking bug population thresholds in Australian Rubus
Wagle	Pramila	Protected cropping for premium berries
Yangchen	Jamyang	A Tool to Manage the Food Recall Risks
Van Kints	Seeger Kay	Management of sucking bugs in Rubus
Mallam	Gypsy Jade Bell	Microbial Degradation of Plastic Waste
Aawulenaa	Rose Pagr-tuur	Opportunities for Including Indigenous Women's Knowledge and Voices into Agricultural Water Management in Tasmania
Zhao	Haochen	Understanding of canola waterlogging response and waterlogging risk on crops under current climate condition
Bhattarai	Shiva Shankar	Efficacy of conservation biological control against codling moth in apple orchards
Ahamed	Zubayed	Enhancement of flavor in shelf- stable ready meal through natural antioxidant strategies
Bekele	Eyaya Gashaw	Optimising Netting Timing and Colour to Alleviate Climate Change and Biennial Bearing Constraints on Apple Production
Kinred	Emmaline Kirsty	Microbes and Carbon Exploring the relationships between microbial community functions, soil health and land management.
Gulinazhaer	Aili	Next generation artificial intelligence for quantum gains in soil carbon
Mehmood	Abid	Fungicides and crop reproductive success
Mahenga	Ein Darlington	Advancing medicinal cannabis breeding: harnessing F2 germplasm diversity and precision HPLC for cannabinoid optimization
Neupane	Dipesh	Progress on bumble bees as commercial pollinators in Australia: update on risks and opportunities
Subedi	Sujan	Evaluating sustainable orchard systems for improved soil carbon, nutrient recycling, and biodiversity
Do	Trong Hieu	Optimising crop load management strategies for apple orchards in Australia
Dang	Nhat Quang	The impact of feed quality on performance and methane emission in finishing feedlot cattle
Li	Huaqiang	Simulating soil waterlogging
Hu	Di	Hyphenated sample preparation and analysis using automated liquid/liquid extraction and gas chromatography
Maunder	Matthew Philip	Improve anthocyanins content in cherries
Ahmed	Sheikh Rashel	Towards crop phosphorus deficiency
Rana	Naveed Ur Rehman	Application of gibberellic acid to improve the fruit quality of sweet cherry
Ctercteko	Alison	Beating smoke taint with sparkling wine
Williams	Megan Elizabeth Parkes	Sustainably growing horticulture value in cool climate Australia: soil health in legume crops
Verne	Thomas William Henry	Optimizing bacterial formulation
Barker	Andrea	Designing the flavour of cool climate Tasmanian wine: vineyard interventions for improving grape and wine composition
Miranda Arnaldo Dos Santos	Bruna	Enhanced rock weathering: co-benefits, trade-offs and mitigation potential
Kerstan	Tony Andrew	Evaluating soil characteristics, soil compaction and irrigation effectiveness on four Tasmanian dairy paddocks
Bowen Butchart	Dominique	Pathways to a carbon neutral livestock industry by 2030

Student		Research title
Thakur	Shilpa	Increasing utilisation of non-replacement dairy calves in Australia
Targett	Peter James	Investigating plant disease mechanisms of infection of carrot crown rot and pea collar rot
Dai	Shilin	Adaptation and quality of polygonatum sibiricum as a herb for Traditional Chinese Medicine
Nishshanka Achchi Kankanamalage	Inosha Hansamali	Nitrogen fertiliser use in the Tasmanian dairy industry: managing N surpluses to support a more sustainable future
Jiang	Chenting	Hybrid data-driven modelling for predicting soil water retention functions and moisture dynamics
Liu	Chongyue	Traditional Chinese Medicinal herbs as new crops: growing systems and quality
Poosarla	Pooja Rajasri	Mechanisms and spread of fungicide resistance in pyrethrum fungal pathogens
Siddique	Abu Bakar	Stomatal functions in crop tolerance to combined abiotic stresses
Van Sprang	Celia	Chinese Medicinal Herbs as new crops: growing systems and quality
Benedetti Vallenari	Pia Francesca	Evaluating sensor-derived indicators of metabolic and nutritional health in pasture-based dairy cows
Ijaz	Usman	Cloning of a scald resistance gene in barley
Taiwo	Akeem Owolabi	Managing botrytis in wine grapes
Ash	Rebekah	Aligning sustainable farm system interventions and policy under our future climate
Ahmed	Muhammad Zeshan	Barley yellow dwarf resistance in wheat
Andoh	Dick Yaw Acheampong	Eucalypts, microbes and invertebrates
Wu	Yufei	Traditional Chinese Medicinal herbs as new crops: growing systems and quality
Thapa	Ronika	Pink rot of potato, a re-emerging problem
Scofield	Claire	Cherry quality and protected cropping
Bhattarai	Ganesh	Commercial carbon accounting case study
Lohani	Shreeya	Water accountability and sustainability
Krauss	Laurie Louise	Weeds in rotational cropping
Nguyen	Thi Thanh Hien	Diffuse to confuse
Shahriar	Saleh Ahmed	Blueberry rust epidemiology
Akram	Hina	Modelling soil-borne disease of potato
Rehman	Fazal Ur	Pathogen interactions in the soil
Ahmad	Ibrahim	Anti-methanogenic feed additive strategies for low-emission ruminant production
Anand	Uttpal	G2E for verticillium control
Hussain	Md Ashraf	Microbial nitrogen transformation in dairy pasture
Ahmed	Jaher	Conservation biological control in rubus
Sharmita	Onusha	How do crops adapt to waterlogging
Azeem	Muhammad Atif	QTL for wheat septoria resistance
Khan	Fahad	Understanding and manuipulating protein synthesis in fava beans to produce high protein fava beans for an alternative protein future
Fearnley-Pattison	Jessica Caroline	Carbon sequestered in apple production

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Financial Report

TASMANIAN INSTITUTE OF AGRICULTURE (TIA)

NOTES TO ACCOMPANY FINANCIAL DETAILS

The financial details reported here relate to TIA activities for 2025. The detail was prepared by TIA and checked by Financial Services, University of Tasmania.

Specific contributions from each funding source are as follows: -

1.	**University of Tasmania**	
	2025 Operating Grant Funds to TIA/School of Agricultural Science	$5,071,653
	2025 University Research Scholarships to PhD students studying in areas related to TIA activities	$1,531,244
	TOTAL University of Tasmania contribution	**$6,602,897**
2.	**Department of Natural Resources & Environment Tasmania (NRET)**	
	Funds granted to TIA for the 1 January 2025 to 31 December 2025 financial year under the TIA Joint Venture Agreement, the Agricultural Research Development Fund and Other Grants	$7,439,733
	TOTAL NRET contribution	**$7,439,733**
3.	**Industry - including private industry and National Competitive Research grants**	
	2025 Industry research grants held by the University for TIA activities	$11,590,342
	TOTAL Industry contributions	**$11,590,342**

CERTIFICATION OF FINANCIAL DETAIL

We certify that the financial detail contained in the 2025 Tasmanian Institute of Agriculture Research Annual Report has been prepared in accordance with detail held in the University of Tasmania's Financial Management Information System, and detail provided by TIA.

Michael Rose 05/03/2026

Professor Michael Rose
Director TIA

5/3/26

Ben Rose
Chief Financial Officer,
Financial Services
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