



THE UNIVERSITY  
OF QUEENSLAND  
AUSTRALIA

CREATE CHANGE

# The University of Queensland

Supporting the beef industry through discovery,  
engagement and impact





## The Industry

- \$24 billion value

### The major challenges

- Minimise environmental impacts
- Production costs are rising
- Increasing threat of exotic disease incursions
- Desire to enhance animal welfare

## Beef industry strategy 2030

Increase on-farm profitability, sustainability and welfare by accelerating widespread use of new, cost effective technologies and practices that improve animal health, product quality, biosecurity and production.

### Goal

Develop and implement new and existing, cost effective technologies to enable beef producers to improve profitability and meet industry challenges.

## UQ solutions



20+ Researchers



25+ beef projects

## Current project snapshot

Researcher	UQ Affiliation	Project	Timeline	Funder
Dr Sarah Meale Dr Tyrone Venn Dr Alwyn Williams	 School of Agriculture and Food Sustainability	Utilising novel Pongamia trees to decarbonise Australia's beef value-chain	2024-2027	Australian Research Council
Dr Sarah Meale	 School of Agriculture and Food Sustainability	In vitro rumen testing of feed additives	2023-2024	Number 8 Bio Pty Ltd
Dr Sarah Meale Prof John Gaughan Dr Shane Campbell	 School of Agriculture and Food Sustainability	Reducing emissions of backgrounded cattle - combining Bovaer*10 with supplementation to reduce methane and increase productivity.	2022-2024	Meat & Livestock Australia
Dr Elizabeth Ross	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">LESTR Low Emission Saliva Test for Ruminants</a>	2022-2026	Meat & Livestock Australia
A/Prof Marloes Nitert Dekker A/Prof Marina Fortez	 School of Chemistry and Molecular Biosciences			
Dr Tyron Venn	 School of Agriculture and Food Sustainability	Steak'n wood: demonstrating livestock productivity and environmental service benefits of trees on farm in northern systems	2024-2027	Queensland Department of Agriculture and Fisheries
Dr Alwyn Williams	 School of Agriculture and Food Sustainability	Determine the role of ground pearls in pasture dieback	2020-2024	Meat & Livestock Australia
A/Prof Luis Prada e Silva Prof Ala Tabor Prof Ben Hayes Dr Kieren McCosker	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	Northern Breeding Business (NB2): <a href="#">Assessing practical interventions to reduce calf wastage and herd mortality in northern systems</a>	2021-2026	Meat & Livestock Australia
Prof John Gaughan Dr Angela Lees	 School of Agriculture and Food Sustainability			
Dr Gry Boe-Hansen Dr Ben Wood Prof Nigel Perkins	 School of Veterinary Science			
Dr Ben Wood	 School of Veterinary Science	Animal Wellbeing Extension and Adoption Partnership	2022-2026	Australian Agricultural Co. Ltd
Dr Kieren McCosker Dr Ben Wood Prof Ben Hayes Prof Nigel Perkins	 School of Veterinary Science	Digital Agriculture project to integrate satellite imaging of pasture biomass and on farm sensors	2019-2024	Meat & Livestock Australia
Dr Gry Boe-Hansen	 School of Veterinary Science	A single-shot anti-fertility vaccine in female cattle	2021-2025	Meat & Livestock Australia
Emeritus Professor Michael McGowan Prof Rachel Allavena Prof Chiara Palmieri	 School of Veterinary Science	<a href="#">Development of a single shot immunocontraceptive vaccine for cattle</a>	2017-2024	Meat & Livestock Australia
Prof Tim Mahony	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)			
Dr Peter James Prof Ala Tabor	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">Cattle tick and Buffalo fly host genetics, susceptibility to buffalo fly lesions and biomarkers for resistance</a>	2018-2024	Meat & Livestock Australia
Dr Lida Omaleki	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	Supporting more effective disease control in Queensland's industries.	2022-2027	Advanced Queensland Industry Research Fellowship and Scolexia Animal and Avian health

Researcher	UQ Affiliation	Project	Timeline	Funder
Dr Natasha Hungerford A/Prof Luis Prada e Silva Dr Kieren McCosker Ms Diane Ouwerkerk Dr Ros Gilbert	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	EAP - Slowed delivery of bioactive compounds that reduce enteric methane	2022-2027	Meat & Livestock Australia
Dr Sarah Meale	 School of Agriculture and Food Sustainability			
Prof Bronwyn Laycock Dr Céline Chaléat A/Prof Steven Pratt Prof Paul Lant	 School of Chemical Engineering			
Dr Ben Wood	 School of Veterinary Science			
Prof Ala Tabor Dr Conny Turni Dr Kieren McCosker Prof Ben Hayes Dr Gry Boe-Hansen	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">Improving fertility in northern cattle through host and pathogen molecular diagnosis</a>	2017-2024	Meat & Livestock Australia
Dr Gry Boe-Hansen	 School of Veterinary Science			
Prof Ben Hayes	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	Resilient Livestock Systems under climate change	2022-2027	Horizon Research and Innovation Actions
		<a href="#">Reducing Methane Emissions and improving profitability in Northern Australian beef</a>	2022-2027	Meat & Livestock Australia
		<a href="#">Balancing polled and profit: demonstration of breeding strategies to replace dehorning in a large integrated beef and cattle operation</a>	2022-2026	Australian Agricultural Company (AACo)
		<a href="#">Development of genomic multi-breed eating quality trait estimates using shared global data</a>	2022-2024	Meat & Livestock Australia project administered by University of New England
Dr Elizabeth Ross Dr Loan Nguyen Prof Tim Mahony	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">On-farm genomics: genomic solutions for Northern beef cattle management and breeding</a>	2022-2026	Meat & Livestock Australia
	Improve genomic testing tools for fertility traits in beef cattle			
Dr Kieren McCosker	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">Cool Calves: Reducing calf loss from exposure</a>	2022-2024	MLA project administered by Northern Territory Department of Industry, Tourism and Trade
		<a href="#">The Sweet Spot: Improving breeder herd performance through optimal pasture utilisation</a>	2022-2024	
		The paddock power project: unlocking the secrets to sustainable and profitable intensification in northern Australia	2022-2024	
Prof Louw Hoffman	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">Optimising and industrialising black soldier fly (BSF) production: redirecting food waste to livestock feed production using insects</a>	2021-2024	Fight Food Waste CRC
Dr Hannah Siddle Prof Ala Tabor	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">Proof of concept cattle tick vaccine trial for commercial adoption</a>	2024-2025	Department of Education
Prof Ala Tabor, Dr Kieren McCosker	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	Bovine Tritrichomonas foetus whole protozoan vaccine proof of concept trial	2024-2025	Department of Education
Dr Gry Boe-Hansen, Emeritus Professor Michael McGowan	 School of Veterinary Science			
Dr Joe Eyre Dr Kieren McCosker	 QAAFI (Queensland Alliance for Agriculture and Food Innovation)	<a href="#">North Queensland cotton-grains-cattle farming systems (De-risking cotton-led diversification of sustainable mixed crop-livestock farming systems across NA)</a>	2023-2026	CRC Northern Australia

## Case studies - growth, gastronomy and good health

### Beefing up cattle supplements

**The Challenge** - How to monitor individual feed intake within a herd.

**The Project** - Use biometric wireless ear-tags and cameras to track the movement and time at the feed trough. Development of an equation to estimate individual feed intake.

**Impact** - Adopting the use of ear tags can reduce supplement costs while ensuring each animal eats the correct amount of methane reducing feed additives.

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### Decarbonising the beef supply chain

**The Challenge** - Reducing methane emissions with productivity gains.

**The Project** - Develop a framework for the integration of Pongamia into beef production systems, so that not only emissions reductions are maximised, but also to support carbon capture and farm system resilience. Whole-farm modelling will elucidate production scenarios capable of achieving the reductions needed for a carbon neutral Australian beef industry.

**Impact** - Adoption of feeds with carbon sequestration and methane mitigating potential to decarbonise the beef supply chain.

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### Preventing spread of Lumpy Skin Disease

**The Challenge** - Creating a model to assess the likely introduction and spread of the disease in Australia

**The Project** - Create maps to identify areas in Australia with favourable environmental conditions for the survival of imported infected insects. Produce data on the disease status outside of Australia, Australia's landscape and climate, distribution and movement of cattle, and local insect populations.

**Impact** - Boost Australia's preparedness and awareness of the disease among cattle producers, farmers, and veterinarians to maintain Australia's disease-free status as an international exporter.

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QS World University Rankings by Subject 2023

## Partnership Opportunities

- Contract research
- Research collaborations
- Licensing agreements
- Field trials
- Industry sponsored student projects



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