



August 2026

NORTHERN HORIZONS



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Subtropical Dairy Showcasing Dairy Careers

Maree Searle
Extension Advisor
Subtropical Dairy



Subtropical Dairy Extension Officer and Farm Engagement Lead Maree Searle has been busy promoting careers in the dairy industry by connecting with high school students, school leavers and university students across the Northern Rivers and Mid North Coast of NSW.

Connecting students with dairy careers

On the 28th of July, Maree joined Lismore dairy farmer and industry advocate Paul Weir for the Connect Northern Rivers Careers Expo at the Lismore Showgrounds. The annual event brings together students from Years 10 to 12, early school leavers, job seekers, career changers, parents and teachers; and gives visitors the chance to speak directly with industry representatives about future study and employment pathways. At the Dairy Australia display, Maree and Paul spent the day speaking with students about the many careers available across the dairy industry. Discussions covered on-farm roles, herd and pasture management, animal health, milk processing, agricultural technology, research, extension and agribusiness. Paul brought a practical farmer's perspective to the conversations, sharing his experience as a local dairy farmer and helping students understand the skills, variety and opportunities involved in running a modern dairy business in Northern NSW.



Maree Searle with Lismore dairy farmer Paul Weir at the Connect Northern Rivers Careers Expo at Lismore

From Careers Expo to UNE farm tour

Three days later, on the 31st of July, Maree attended the University of New England (UNE) bus tour farm visit to Darley Dairy Farms at Dorrigo. This annual bus tour exposes students studying agriculture degrees at UNE to the various agriculture industries around the Mid North Coast of NSW. Maree set up an information table similar to the one she had prepared for the Careers Expo and spoke with the UNE students about career opportunities in the dairy industry, the role of extension in supporting farmers and her own career journey from studying at UNE through to her current role with Subtropical Dairy. The Darley family presented their farm beautifully and gave students a clear insight into how the business is run. The visit provided a valuable opportunity for students to see a working dairy operation and to hear directly from the people managing it day to day. Harrison Darley also shared his story, speaking about his journey from UNE to becoming Operations Manager on his family farm. His experience helped demonstrate how agricultural study can connect with practical on-farm leadership and long-term career progression in the dairy industry.

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Northern Horizons Editorial SDP Chair



Welcome to *Northern Horizons*.

July 1 saw Michela Secci commence as our new Executive Officer for Subtropical Dairy and Regional Manager for Dairy Australia. Michela brings extensive leadership, management and governance experience across a range of industries and organisations. Her recent roles include interim Chief Executive Officer and Chief Operating Officer with the Australian Institute of Landscape Architects, and Project Manager with the Australian National Low Emissions Coal Research and Development organisation. She is based in Biggenden, Queensland and is looking forward to working with dairy farmers, industry partners, the Subtropical Dairy Board and the broader Dairy Australia team.

I would also like to thank Dr Brad Granzin for his many years of service and leadership. Brad has held the role of Executive Officer and Regional Manager for over 12 years and has made significant contributions to the dairy industry during this time. In good news, we're not saying goodbye to Brad. He will be staying on with the Subtropical Dairy team for the next few years as Senior Program Manager, leading two projects funded by the Future Drought Fund – Climate Smart Feedbase and the Farm Business Resilience Program (administered by the Queensland Department of Primary Industries) while also taking time to focus on his consulting business.

Many thanks to everyone who took the time to attend one of our recent regional dinners. I would like to especially thank all of our dinner sponsors: Advanced Rural, BEC Feed Solutions; Bega Dairy and Drinks; Castlegate James; Dairyfields Co-operative; Daviesway Dasco, Maleny Dairies; NSW DPIRD; Norco; Novus; Nutrien; Rabobank; Scenic Rim Regional Council; Southern Downs Regional Council and a2 Milk.

This edition of *Northern Horizons* includes several project summaries marking the completion of Phase 1 of Dairy UP. Dairy UP is a collaborative program led by the University of Sydney's Dairy Research Foundation and delivered in partnership with the New South Wales Department of Primary Industries and Regional Development, Scibus, Dairy Australia and the University of Sydney. Through the collective effort, expertise and commitment of all involved, Dairy UP has delivered an impressive body of work across 10 projects and 23 sub-projects. It is encouraging to see that the next phase of Dairy UP's collaborative model will initially focus on pasture productivity and profitability, and dairy cattle health – both highly relevant topics for dairy businesses in the tropics and subtropics.

As in previous years, preparing my Chair's address for the 2025/26 Annual Report provided an opportunity to reflect on the past 12 months and Subtropical Dairy's achievements. The 2025/26 year saw generally favourable operating conditions continue across much of the Subtropical Dairy region. During 2025/26, Subtropical Dairy staff delivered 54 events to 787 participants, compared with 69 events and 1,215 participants in 2024/25. This reduced focus on group events was deliberate, allowing staff to place greater emphasis on one-on-one engagement and support through Dairy Australia's Farm Engagement model. In 2025/26, Subtropical Dairy staff completed 78 farm visits and more than 200 follow-up activities.

Subtropical Dairy also received \$145,000 during 2025/26 through the Farm Business Resilience Program, co-funded by the Australian Government's Future Drought Fund and the Queensland Government's Drought and Climate Adaptation Program. This funding supported several initiatives, including the Key Performance Analyser project, a benefit-cost analysis of home mixing concentrates in Far North Queensland, additional on-farm technical consultancies, group events, and ongoing maintenance of the Northern Australian Dairy Hub, our joint website with the Queensland Department of Primary Industries.

Once again, welcome to *Northern Horizons* and I hope you find this edition of value and interest to your business.

Luke Stock, Chairman,
Subtropical Dairy Programme Ltd.
P 0474 800 245



UNE students visiting Darley Dairy Farms

Investing in the future

Together, the Careers Expo and farm tour highlighted the value of connecting students with real people working in the dairy industry. By sharing personal stories, practical farm insights and industry career pathways, Maree, Paul and the Darley family helped show that dairy offers rewarding careers for people interested in animals, agriculture, technology, business, the environment and regional communities. Following these events Maree has been contacted by several careers advisors and more than 10 individual students for more information or work experience opportunities within the dairy industry.

If you are interested in hosting work experience students on your farm, please reach out to Maree Searle on 0494 678 009. ■■



Adam, Donna and Harrison Darley and Savanna of Darley Dairy Farms presenting to students

Find out more: To explore dairy careers, pathways and current opportunities, visit www.dairy.com.au/careers.

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Subtropical Dairy Projects and Services

July 2026 – June 2027



Services and Projects	Format	Timing	Region
Northern Horizons – bimonthly newsletter	Print or online newsletter	All year	SDP-wide
E-news – weekly – published each Wednesday	Online newsletter	All year	SDP-wide
Northern Australian Dairy Hub – An extension website for dairy farmers and those who work within the Northern Australian dairy industry. Subtropical Dairy partners with the Queensland Department of Primary Industries to provide the latest R&D outcomes and contemporary technical resources.	Website	All year	
Dairy Discussion Groups	Groups	All year	SDP-wide
Young Dairy Network	Groups	All year	SDP-wide
Regional Groups – Six groups across the SDP region. Undertake local R&D and advocate for Subtropical Dairy services.	Groups (6)	All year	SDP-wide
Service Provider Network – Provides improved co-ordination and uptake of extension, education, emergency response and other services in the Subtropical Dairy region through a network of service providers and farmers working closely with industry.	Groups and online	All year	SDP-wide
Joint agribusiness technology events – Previous events have included dairy cattle internal and external parasite management and dairy cattle vaccination program options workshops.	Field days	All year	SDP-wide
Carbon Outreach Program – Various workshops for farmers and service providers to better understand and manage farm carbon. Participants learn about farm greenhouse gas emissions, industry needs, calculating carbon footprint and practical ways to profitably reduce emissions.	Various	All year	
Fertsmart – A workshop to improve nutrient management. Participants learn over 4 days about soil properties, including workshops, an on-farm day and planning and implementing a nutrient management plan with the support of a consultant.	Face-to-face/hybrid	To be decided	To be decided
Investment forum – Targeted at agribusiness and service providers. This forum provides an up-to-date account of the Australian dairy industry market trends and dairy farm performance with a focus on the Queensland and Northern New South Wales dairy regions and other factors surrounding the dairy industry.	Face-to-face/hybrid	To be decided	SEQ
Our Farm Our Plan – Face-to-face or online workshop with follow-up support. Farmers focus on improving business planning and risk management. Participants develop long-term goals, identify and prioritise actions, and manage uncertainty and risk. Includes one-to-one support over 24 months.	Workshops	All year	SDP-wide
Employment Basics (online – 5 weeks) – A workshop series, 1 hour per week, for farmers to apply industrial relations and HR requirements when employing people. Participants learn about attraction, recruitment, onboarding, retention, termination and payroll/leave requirements across employment options.	Workshops (1)	To be decided	SDP-wide
Employment Starter Kit Q & A's – Interactive workshops for farmers who are new or experienced employers to understand their legal obligations (ESKi). Participants will access fundamental employment information and update their employment processes.	Workshops (5)	July - Sept	SEQ, DD, SC, MNC NSW, FNC NSW
Cash, Costs & Margins – A workshop for farmers to manage cash/costs for long-term profitability. Participants learn how to track performance, understand cost drivers, identify margin improvements and make confident decisions with tools like Farm Business Snapshot/Standard Chart of Accounts.	Workshops (6)	July - Sep	SDP-wide
Cool Cows – A workshop to improve heat stress preparedness and management on dairy farms. Participants will learn to identify heat stress and its impact, and assess and implement infrastructure or management changes.	Online workshop	Oct-Dec	SDP-wide
Healthy Hooves – An on-farm workshop to prevent and manage lameness in dairy cattle. Participants learn to identify and handle lame cows, trim feet, treat simple cases and use lameness tools through discussion and practice.	Workshops (3)	Oct to Mar	DD, MNC NSW, FNC NSW
Top Fodder – A workshop for farmers and service providers to improve silage-making (focus on pasture/maize). Participants learn the science/economics of crop selection, silage additives, feed testing, fitting silage and reducing losses during the process.	Workshops (3)	Oct to Dec	FNQ, MNC NSW
Farm Business Fundamentals – A workshop for farmers to improve farm financial management. Participants gain knowledge and skills on budgeting, compliance and financial systems, and access the Standard Chart of Accounts and Dairy Cash Budgeting tool.	Workshops (3)	Oct to Dec	DD, SEQ, SC

Services and Projects	Format	Timing	Region
Dairy Farm Business Analysis – A workshop for farmers and service providers to analyse and benchmark farm business performance. Participants learn about financial/physical data, interpreting performance and understanding cash, profit and wealth. A good link to understanding QDAS, DFMP and DairyBase.	Workshops (3)	Jan to Mar	DD, SEQ, SC
Disbudding Best Practice – An on-farm workshop for farm employees to manage disbudding procedures safely and responsibly. Participants learn practical best practices through hands-on training to reduce risk, prioritise animal welfare and safety, and make informed decisions.	Workshops (3)	Jan to Mar	DD, SEQ, SC
Transition Cow Management – A workshop for farm decision makers and senior employees to improve transition cow management. Participants benchmark their herd health, understand impacts of poor practices, and implement an integrated feeding program on their farm.	Workshops (4)	Apr to Jun	DD, SEQ, SC, FNQ
Milking & Mastitis Management – A two-session workshop for farm employees responsible for milk harvesting to improve udder health, dairy hygiene and milking practices. Participants learn online (Session 1) and on-farm (Session 2)	Workshops (6)	Apr to Jun	SDP-wide
Transition Cow Management (online – 6 weeks) – An online option of the Transition Cow Management workshop.	Workshops (1)	Apr to Jun	SDP-wide
Enlight – online learning platform – various online self-paced learning options.	Various	All year	SDP-wide



Scan to
register for
the eNews

Please contact your local Subtropical Dairy extension officer to express an interest in any of the upcoming workshop activities this year. Alternatively, you will find an up-to-date list of upcoming events across the Subtropical Dairy region in the weekly eNews which is published via email each Wednesday. You can register for the eNews [here](#) or with your local extension officer. Regional group meetings across all Subtropical Dairy regions will be scheduled in coming months. Please come along and get involved to ensure your local dairy RD&E needs are heard and maybe kick-start a region-specific small project for farmers in your local area. ■ ■

SC	Sunshine Coast
SEQ	South East Qld
DD	Darling Downs
FNQ	Far North Qld
FNC NSW	Far North Coast NSW
MNC NSW	Mid North Coast NSW

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more information

What is H5 Bird Flu?



Australian Government

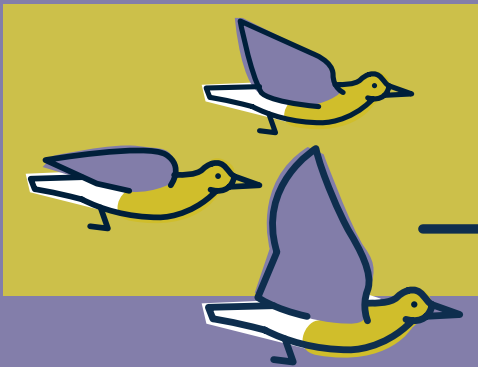
H5 bird flu is the most serious type of bird flu.

It mainly affects wild and domestic birds, but can also infect some mammals.

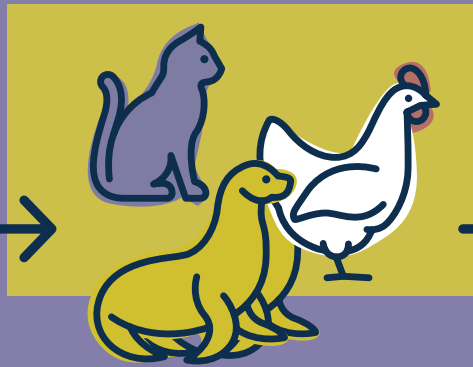
It has killed millions of animals worldwide.



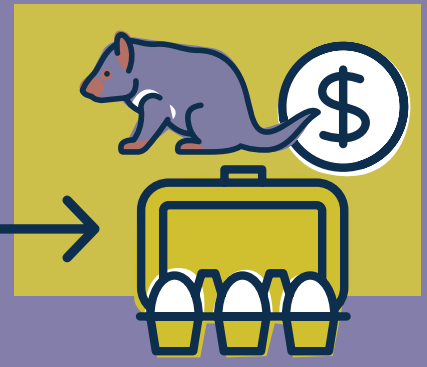
How it spreads and the impacts



H5 bird flu can infect and kill wild birds.



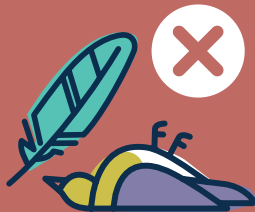
It can spread to other birds and some mammals. Human infection is rare.



This can impact food supply, the environment and the economy.

Help spot H5 bird flu

Avoid



Avoid contact and keep your distance



Keep pets away

Record



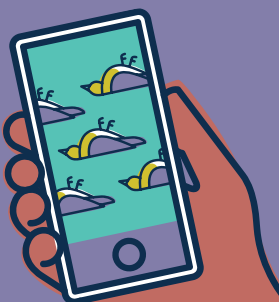
Photos or video



Date, time, location



What you've seen



Report



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Animal Disease Hotline

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birdflu.gov.au or scan the QR code.

New EU rules mean tighter controls on antibiotic use required on dairy farms



From September 2026, new European Union (EU) rules will affect how Australian dairy farms need to use and record antimicrobials, including antibiotics, in order for Australia to maintain trade access.

While antibiotics and other antimicrobials used to prevent or treat disease will still be allowed under the new EU rules, antimicrobials can no longer be used to promote growth or increase production in animals. This includes some products that may be described as feed additives or nutritional supplements, such as:

- Lasalocid
- Monensin.

These changes mean that the Australian dairy industry will need to carefully manage and record the usage of antimicrobials on farm.

"Australia exported \$29 million of dairy products to Europe in 2025, primarily high protein whey concentrate," explained Karl Ellis, Dairy Australia's Economic Sustainability & Competitiveness Manager. "For Australia to keep selling dairy products into the EU market, the whole dairy industry is going to need to comply with these new rules."

For dairy farmers, that means keeping careful records of any veterinary product or feed additive usage as the EU may review them during audits of Australia's export systems. Farmers will therefore need to be careful and deliberate about how antimicrobials are used on-farm and make sure every use is recorded clearly and accurately.



For Australia to keep selling dairy products into the EU market, the whole dairy industry is going to need to comply with these new rules.

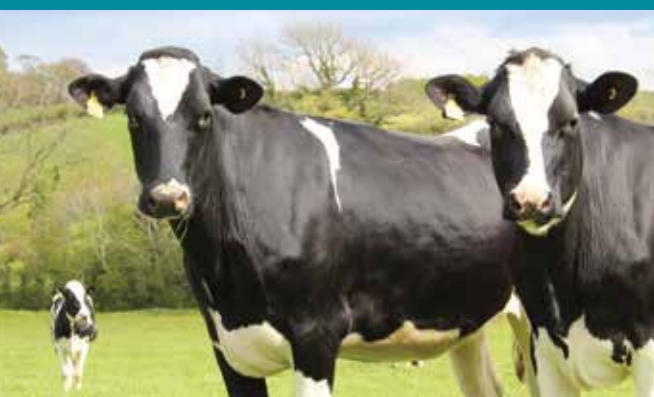
The formal advice from the Department of Agriculture, Fisheries and Forestry is:

- Review all antimicrobial veterinary products used on your property or included in feeds and supplements to ensure they are only used for disease control or prevention.
- If necessary, consult your veterinarian or nutrition advisor for guidance on complying with EU rules.
- Record the therapeutic reason for using any veterinary products or feed additives on your property, including for antimicrobials the disease or condition being treated or prevented

by recording that you have used the product 'to prevent or control disease' or include the disease treatment or prevention use listed on the label (e.g. to prevent bloat, treat coccidiosis).

Dairy Australia is currently developing Australian guidelines for the integrated management of ruminal acidosis, which includes guidance for veterinarians and nutritional professionals on the use of ionophores and other in-feed antimicrobials, and these are expected to be available in late 2026. ■■

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Gareth's Story – One Splash, Lasting Consequences

Di Gresham

Human Resource Consultant



Gareth still remembers the instant the cleaning product hit his eye.

It was a routine job in the dairy. He was down in the pit, getting ready to change the rubberware and giving the milking cups a general clean first.

Nothing unusual. Nothing he hadn't done plenty of times before.

Gareth admits he had always been fairly relaxed about safety when it came to the quick and 'easy' jobs.

"I was usually the first to say, 'It'll be right.' If something was only going to take a couple of minutes, you didn't think too much about putting goggles on or stopping to get everything organised."

That morning Gareth was using a handheld pressurised spray bottle that they'd had sitting on the shelf for a while to spray the cleaning solution across the cups. He was about halfway into the job when after giving the handle a few pumps, the nozzle seemed to block up. After some shakes and hitting the bottle forcefully, Gareth turned it around to have a look at the nozzle. With his hand still slightly on the trigger, the nozzle cleared and the cleaning solution suddenly sprayed towards him, catching him directly in one eye.

"The second it hit, I knew about it. My eye started burning straight away and I couldn't open it properly."

His employee immediately got him to water and began flushing the affected eye. For the next 15 minutes, they continued rinsing it before Gareth decided he really needed more help. On arriving at the dairy, his wife took one look at his face and called an ambulance.

"At first, I think part of me still thought I could get it washed out, give me some drops and I'd be right. But once the doctors started looking at the damage, I realised it was more serious than that."

The cleaning product had caused a chemical injury to Gareth's eye. His sight wasn't lost completely, but his vision was affected and recovery wasn't as simple or as quick as he had expected.

There were appointments, treatment and follow-up visits. For a period, everyday things such as driving, working around machinery and judging distances became much more difficult. Even as the eye began to heal, blurred vision and sensitivity remained a reminder of what had happened.



What frustrated Gareth most was knowing how easily the injury could have been prevented.

"It was just cleaning the cups. You do these jobs all the time and you don't really think of them as dangerous. If I'd had my eye protection on, we probably wouldn't be having this conversation."

Looking back, Gareth says familiarity was probably part of the problem.

On farms, the jobs we do every day can start to feel safe simply because we have done them dozens of times before. Chemicals get handled regularly. Equipment gets cleaned. Rubber ware gets changed. People become comfortable with the process.

But familiar doesn't necessarily mean safe.

Gareth was fortunate. His employee reacted quickly and started flushing his eye immediately, and he was taken for medical treatment without delay. His injury could have had considerably worse long term outcomes.

Today, his message is straightforward. "Don't wait until something happens before you start taking it seriously. It only takes a second. Put the glasses on, know what you're using and make sure the people around you know what to do if something goes wrong."

Where to from here?

Gareth's accident happened during an ordinary dairy task. There was no major equipment failure and no unusual set of circumstances. It was a routine job involving a chemical cleaning product that was used regularly.

That is exactly why incidents like this deserve our attention.

Understand the chemical before you use it

Dairy cleaning products can cause serious injury if they contact the eyes or skin. Workers need to know what products they are using, the risks involved and the precautions required. Safety Data Sheets (SDS) need to be readily accessible and workers should know where to find them and also be familiar with first aid actions.

Wear the required Personal Protective Equipment (PPE) – even for quick jobs

If a product requires eye or face protection, wear it every time it is handled. Cleaning a few cups or completing a job that "won't take long" doesn't change the potential consequences of chemical exposure.

Think about where the chemical can go

Splash and spray-back are easy to underestimate, particularly when cleaning equipment at close range. Consider the direction of the spray, pressure in the equipment and where your face and body are positioned before starting.

Be ready if something goes wrong

Everyone working with chemicals needs to know what to do following exposure. Appropriate emergency washing facilities need to be accessible, and first-aid actions should follow the product label and SDS. Prompt medical assessment can also be critical following chemical exposure to the eye.

In Gareth's case, having another person nearby who immediately started flushing his eye made a real difference.

Don't let familiarity reduce your awareness

The jobs we perform most often can sometimes be the ones where shortcuts creep in. We stop thinking about the hazard because nothing has happened on the previous occasions.

Gareth's accident is a reminder that farm safety is rarely about dramatic situations. More often, it comes down to ordinary jobs and small decisions.

The chemical doesn't know whether the job will take two minutes or two hours.

Take the extra few seconds. Put the eye protection on.

Further information:



Several WorkSafe Queensland Codes of Practice provide clear guidance on how incidents like this can be prevented. [Codes of practice | WorkSafe.qld.gov.au](https://www.worksafe.qld.gov.au/codes-of-practice)

Managing Risks of Hazardous Chemicals in the Workplace (WorkSafe Qld)

Managing Risks of Plant in the Workplace (WorkSafe Qld)

How to Manage Work Health and Safety Risks (WorkSafe Qld)

Why alkaline cleaners can be especially dangerous to your eyes

In dairy cleaning, alkaline cleaners primarily target organic matter – particularly:

- milk fats and grease
- proteins and milk residues
- other organic build-up on milking equipment

Both acidic and alkaline cleaning chemicals can cause serious eye injuries, but alkaline products can be particularly damaging.

Alkaline chemicals can penetrate quickly and deeply into the tissues of the eye. This means the damage may continue beneath the surface, potentially affecting structures deeper within the eye.

Alkaline eye injuries can lead to:

- damage and scarring of the cornea
- ongoing problems with vision
- cataracts or glaucoma in severe cases and
- permanent loss of vision.

Some alkaline products may not cause the level of immediate pain you would expect from such a serious injury, making it easy to underestimate the damage.

Common alkaline products include dairy and industrial cleaning products containing sodium hydroxide (caustic soda), drain cleaners, ammonia and bleach.

Managing the Risk

Chemical cleaning is a routine part of dairy work, but the risks need to be actively managed.

Provide accessible eyewash facilities – ensure suitable eyewash or washing facilities are located close to where chemicals are used and workers know how to use them.

Wear the right PPE – chemical-resistant gloves, protective clothing and appropriate eye or face protection should be worn as specified on the product label and SDS.

Know your chemicals – keep SDS readily accessible and make sure workers understand the hazards, safe handling requirements and first-aid instructions for the products they use.

Train your staff – workers need practical training in chemical handling, dilution, storage, PPE and what to do if there is a spill or exposure.

Be prepared for an emergency – ensure first-aid equipment is available and workers know how to respond immediately to chemical exposure. Having trained first aiders on farm is an important part of that preparation.

Check equipment and procedures – regularly inspect chemical containers, dispensing and cleaning equipment, and replace anything that is damaged, leaking or unsafe.

When it comes to chemical exposure, knowing what to do in the first few minutes can make a significant difference to the outcome. ■ ■

References:

1. Workplace Health and Safety Qld. 2021. *Managing risks of hazardous chemicals in the workplace-Code of Practice*.PDF Document. https://www.worksafe.qld.gov.au/_data/assets/pdf_file/0027/72639/managing-risks-of-hazardous-chemicals-cop-2021.pdf
2. Total Cleaning Supplies 2023. *Understanding pH and Cleaning Chemicals*. Accessed 05 August 2026. <https://www.totalcleaning.com.au/blog/2023/05/15/https://incleanmagconz202207understanding-ph-and-cleaning-chemicals> 04 Aug



Unlocking the potential of Kikuyu

Dairy UP's P1 project aimed to unlock the potential of kikuyu pastures used by NSW dairy farmers. P1 was a suite of five projects that collectively explored new management options to grow and utilise more kikuyu over summer and increase the productivity of kikuyu-based pastures.

P1a – Kikuyu: Remote monitoring

P1b – Kikuyu Investigating toxicity

P1c – Kikuyu: Developing new varieties

P1d – Kikuyu: Carbon on NSW dairy farms

P1e – Kikuyu: Nutritional value

This document is the final update on P1a – Kikuyu: remote monitoring.

Improving pasture utilisation is one of the most cost-effective ways Australian dairy farmers can improve business profitability. Dairy Australia (2026) estimates that increasing homegrown feed utilisation by one tonne per milking hectare would deliver \$230m in total annual gross benefits for dairy farmers. Despite this, pasture utilisation on Australian dairy farms has stagnated in recent years.

Regular monitoring of available pasture and precise allocation of the herd's daily allowance is a key to improving pasture utilisation. Until recently, pasture monitoring involved the laborious and regular task of estimating coverage in paddocks using a rising plate meter or visual assessment.

Remote monitoring satellite technology

The emergence of remote monitoring satellite technology is a potential gamechanger by automating the task of regular pasture assessment.

The technology uses high resolution satellite images and local information (e.g. weather, soil and farm management data) to help farmers monitor their pastures and make grazing management decisions. It can be used to predict pasture cover biomass and forecast production.

The technologies available were originally developed and validated for perennial ryegrass pastures.

Dairy UP's work aimed to expand the application of this technology to kikuyu pastures for NSW dairy farms, working with a company supplying the technology commercially in Australia and overseas.

This project had three aims:

- To test and validate the reliability of a remote monitoring technology (Pasture.io) for kikuyu pastures.
- To explore the potential to use remote sensing data to provide a snapshot of pasture production and utilisation to aid decision making.
- To support NSW dairy farmers to use the tool for improved pasture management.

Key findings

The project confirmed that this remote monitoring satellite technology can measure kikuyu-based pasture biomass with comparable predictive precision to a calibrated rising plate meter.

In addition to monitoring pasture in every paddock across the farm, it also provided information that can be used to quantify potential pasture losses, highlight inefficiencies and support decisions around productivity and utilisation.

The more the pasture grown, the more the pasture utilised by grazing. But pre- and post-grazing biomass and grazing frequency also influenced pasture utilisation, while farm size did not.

The current need for fortnightly training/calibration of the technology is a significant barrier to adoption.

More info

Project lead

Prof. Sergio (Yani) Garcia sergio.garcia@sydney.edu.au
www.dairyup.com.au

Research and results

Monitor farms

The Dairy UP team worked with a network of 16 dairy farmers in the north, mid and south coast NSW regions to adapt the Pasture.io monitoring system for kikuyu-based pastures.

Over a two-year period, farms were monitored with the remote monitoring technology as well as physical monitoring of pasture cover, composition, quality and management. The team visited

regularly to measure pasture (with a rising plate meter), collect samples and record observations about farm management activities and farmer perceptions about the technology.

The rising plate meter pasture cover results were compared with the predictions made by the remote monitoring technology.

Participating farmers received reports outlining their farm's performance (including benchmarking with their region and all farms in the project). They provided feedback on their experience and value of the information generated.

Pasture utilisation. The project determined that, on average, pasture utilised was 4 tonnes DM/ha less than pasture grown. This represents a significant opportunity for NSW dairy farmers to boost the efficiency, and therefore potential profitability, of their systems (Figure 1).

Analysis showed that pasture utilisation varied between farms. Pasture grown was closely related to pasture consumed (Figure 2). However, the amount of pasture consumed varied between farms with similar

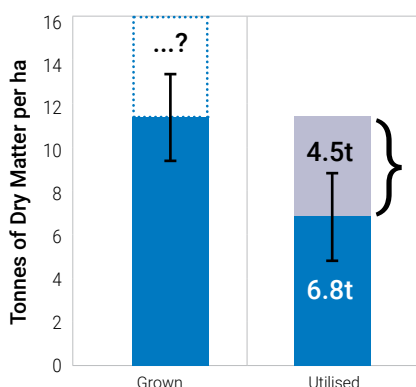


Figure 1: Up to 4 tonne DM/ha extra feed is potentially capturable; and that is without considering the potential to grow more [left bar].

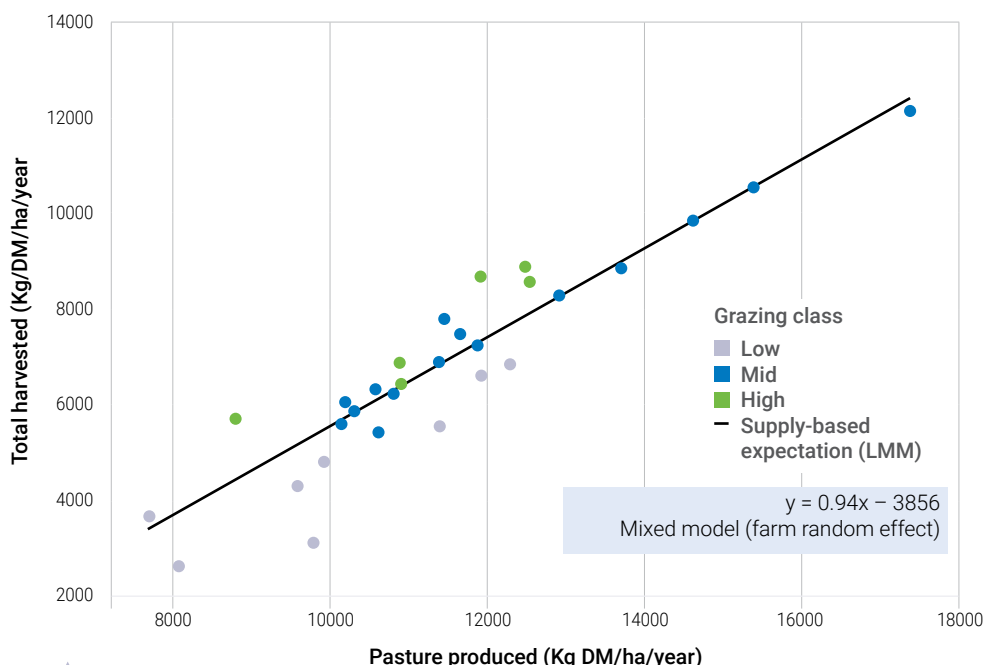


Figure 2: Although pasture grown is a key driver of pasture harvested, some farms achieved higher utilisation than others with similar pasture production highlighting the importance of management.

pasture production. Pre- and post-grazing biomass, and grazing frequency, explained some of the variation while characteristics such as farm size did not.

Remote monitoring satellite technology.

The project confirmed the satellite technology tested can measure pasture biomass with comparable predictive precision to a calibrated rising plate meter. However, this level of accuracy was only achievable with fortnightly training of the satellite technology (involving measuring five paddocks with a rising plate meter). The time involved in measuring the paddocks with a rising plate meter was about 1.5 hours every fortnight. While this is relatively low compared to the potential benefits, it is a significant barrier to adoption.

The information from the trained remote monitoring satellite technology can aid in highlighting biomass and paddock variability and opportunities to improve pasture production and utilisation.

Confidence in technology. On average, farmers' confidence in the technology

increased by 38% over the two years of the project.

Participating farmers acknowledged that the information presented in their individualised report supported management decisions, offered reassurance and helped identify opportunities for improvement.

Read more

[P1a Final Report](#)

[Dairy Australia Strategic Plan 2030](#)

Martin Correa-Luna M. et. al., Accounting for minimum data required to train a machine learning model to accurately monitor Australian dairy pastures using remote sensing. [Nature Scientific Reports \(2024\) 14:16927](#)

Azubuike, B.N. et.al. A data-driven approach for optimising supplement allocation to individual lactating dairy cows in pasture-based systems, [Smart Agricultural Technology, Volume 12, 2025, 101669](#)

Azubuike, B.N. et.al. Data Augmentation and Interpolation Improves Machine Learning-Based Pasture Biomass Estimation from Sentinel-2 Imagery. [Remote Sens. 2025, 17, 3787](#)

Azubuike, B.N. et.al. Machine learning for grazing event detection and pasture utilisation quantification from sentinel-2 data, [Smart Agricultural Technology, Volume 14, 2026, 101954](#)

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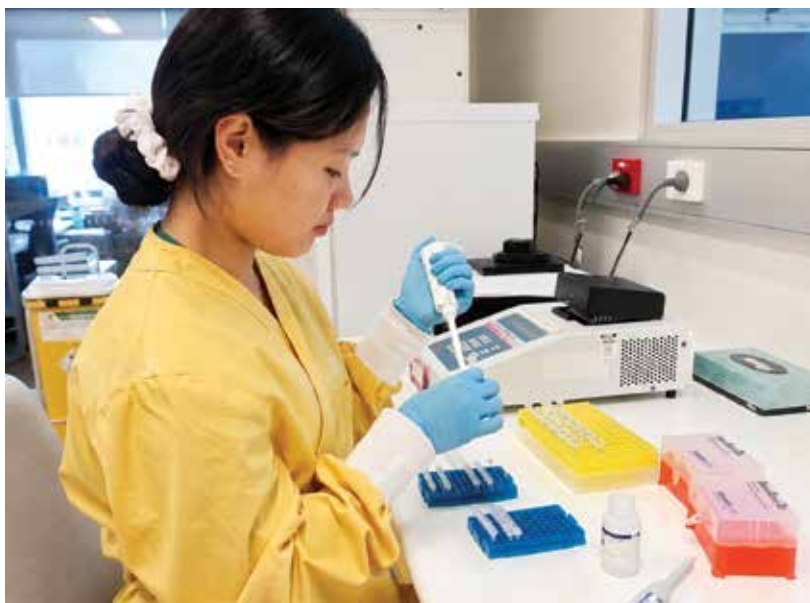
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Final Project Summary

P1b Kikuyu: Investigating toxicity



Kikuyu is a perennial pasture species commonly grown in NSW for livestock production. It is classified as a C4 grass meaning it is adapted to warm or hot conditions. Kikuyu is fast growing and produces more dry matter – of higher quality – than other C4 grass varieties.

However, there's still a lot to learn about kikuyu toxicity – a risk for livestock producers.

Kikuyu toxicity

Cattle deaths and illness officially linked to kikuyu poisoning are rare but have been recorded in NSW over the past 20 years.

Kikuyu poisoning, or toxicity, is frequently associated with specific environmental conditions and new growth following heavy rainfall, often after a summer drought or prolonged dry conditions.

Cause

The compound or mechanism that makes kikuyu toxic to cattle under these conditions is unknown. Kikuyu toxicity is difficult to research because of the unpredictability and rarity of kikuyu poisoning. The only definitive way to determine if cattle have kikuyu poisoning is a combination of the history, clinical signs, and specifically looking for damage to the forestomach (necropsy findings).

Specific signs linked to kikuyu toxicity include dehydration, sham drinking (trying to drink but unable), abdominal pain, unsteady gait, drooling and death. But not all cattle suffering from kikuyu poisoning present with these signs. In some instances, animals may recover, although they will not be as productive as before, given the damage to the digestive system.

Some affected cattle are reported as kikuyu toxicity cases; however, many remain unreported, with their illness blamed on other causes or not investigated.

Project aim

DairyUP researchers wanted to find out why kikuyu can become toxic, to help find ways to prevent or manage it.

Providing clarity around kikuyu toxicity would inform future grazing management practices and research.

Ultimately, project findings could be used to develop new kikuyu varieties that are less susceptible to toxicity events, diagnostic tests to evaluate pasture safety, in-field preventative treatments and treatments for affected cattle.

Benefits

Although kikuyu poisoning is infrequent, it remains a risk and can prevent dairy farmers from unlocking all the benefits of kikuyu.

Understanding the underlying reasons for kikuyu poisoning would give dairy farmers more confidence using kikuyu as a feed option – potentially providing more homegrown feed alternatives year-round.

Any findings could benefit Australia's entire livestock sector. As well as affecting dairy and beef cattle, kikuyu poisoning can also affect sheep and goats, although they are less susceptible.

Key findings

Findings from this research weaken the evidence for *Fusarium torulosum* as the primary cause of kikuyu toxicity. Although this fungus was previously found in affected pasture, our results suggest other plant or microbial compounds may be involved.

This work provides a foundation for future diagnostic tools and evidence-based

pasture management strategies to help reduce toxicity risk.

Supporting findings:

- Kikuyu variety strongly influenced plant metabolite profiles, suggesting some cultivars may carry lower toxicity risk.
- Seven compounds were consistently elevated in leaf and stem samples from toxic pastures, making them strong candidate biomarkers of toxicity.
- Re-watering after drought triggered greater biological change in kikuyu grass than drought alone.
- *Fusarium torulosum* declined after re-watering and was not consistently associated with toxic pastures.
- One fungal species was consistently elevated in toxic pastures and warrants further investigation.

More info

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Research and results

On-farm monitoring

The team collected and analysed grass and soil samples from properties across NSW. An average sample of grass from a paddock contains hundreds of microbial species and thousands of secondary metabolites.

Samples from unaffected and historically affected farms provided a reference "baseline" for comparison with samples collected during active or suspected kikuyu toxicity events.

Dairy UP researchers visited the farms affected by the following suspected

kikuyu poisoning events:

- 2018-19: Hunter Valley.
- March 2024: Bega (unconfirmed).
- April 2024: Hunter Valley.

Farmers on affected farms gave their observations of kikuyu poisoning.

Samples collected from the reference and affected farms were analysed for fungal and bacterial communities (microbiome analysis).

A technology called metabolomics was used to examine samples from the reference and affected farms. Metabolomics gives a “fingerprint” of the many compounds present in a grass sample. Researchers identified potentially toxic compounds by comparing compounds in the database from unaffected and affected farms.

Findings

Several fungal species were significantly more abundant in toxic samples. One fungal species was consistently elevated across leaf, stem and soil samples from toxic pastures. It is now being investigated further as a potential contributor to kikuyu toxicity.

Importantly, *Fusarium torulosum* – a fungus frequently found in affected kikuyu pasture – was not significantly enriched in toxic pasture samples. This fungal species is known to produce metabolites that can cause stomach lesions in laboratory animals.

Metabolites: The team identified seven metabolites that were consistently elevated in both leaf and stem tissue from toxic samples but low or absent in the unaffected and historical samples. These compounds are considered the strongest candidate biomarkers or potentially toxic compounds identified in the project to date.

Fungi: Samples from toxic pastures appeared to have less diversity and richness of fungi in the leaf and stem tissue. ■ ■ ■

Read more

P1b final report

Tan et Al. 2025 Effect of drought on microbiome community and metabolite profiles in kikuyu. [ADSA abstract.](#)



Winston Sweeney Travel Scholarship opportunity for Dairy farmers

Are you dairy farming between the Queensland border and Macksville?

Would you like the opportunity to attend the 2027 Australian Dairy Conference?

Far North Coast Dairy Industry Group along with the Winston Sweeney travel scholarship, are offering to support 5 dairy farmers by paying for half of both the accommodation and registration costs.

The 2027 ADC will be held at the Adelaide Convention Centre from the 24th to the 26th of February 2027.

For more information on the ADC go to www.australiandairyconference.com.au

Conditions of this opportunity include

- The scholarship will be awarded to the first 5 eligible applicants
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Final Project Summary

P1c Kikuyu: Developing new varieties



Kikuyu cultivars

Kikuyu grass is a C4 grass adapted to both the tropics and temperate climates. It is fast growing and produces more dry matter of higher quality than most C4 grasses.

However, since the development of Whittet more than 50 years ago, only two new cultivars for grazing had been released (Acacia and Fulkerson).

Kikuyu genetic research

The University of Sydney in collaboration with Hatton's Turf Research have been breeding improved kikuyu grasses for more than 15 years. These new materials have greater biomass production, tolerance to salinity and drought and represent significant new diversity for nutritional factors.

Industry needs

Current kikuyu pasture cultivars are limited in adaptation, nutritional quality and scope.

However, the extent of adaptation in the new materials developed by the University of Sydney and Hatton's was largely untested in most dairy producing areas in terms of dry matter production, disease resistance and nutritional value. Such information could lead to the commercial release of improved lines and provide a basis for continued breeding and selection.

Project aims

This project explored and evaluated promising lines of kikuyu that had been selected for increased biomass production and tolerance to salinity and drought.

Key findings

The Dairy UP team identified three candidate lines of kikuyu with potential commercial value for dairy pastures.

All three candidate lines had similar dry matter production to the varieties currently used on NSW dairy farms (Whittet and Fulkerson).

Two lines had better nutritional value and were more resistant to black spot and kikuyu yellows than Whittet.

These two lines offer dairy farmers valuable new genetic diversity with enhanced nutritional quality and disease resistance at an equivalent yield.

Path to market

Collaboration with a commercial partner provides a clear path to market.

Once superior lines have been confirmed Hatton's Turf have the option to progress with multiplication, dissemination and marketing.

Benefits

Given that Australia's pasture lands are increasingly subject to moisture stress and warmer temperatures, this climate-ready pasture could provide greater flexibility to the animal industries including dairy.

More info

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Research and results

Thirteen distinct kikuyu genotypes owned by Hatton's Turf Research Pty Ltd, were selected to be evaluated in small,

replicated plots at the Plant Breeding Institute at Cobbitty during 2021/22. Two commercially available varieties (Whittet and Fulkerson) were included as controls.

The plots were exposed to natural conditions. Soil nutrient/moisture and daily weather were assessed throughout the experimental period. Plots were cut for biomass assessment at key periods of the year and rate and extent of regrowth assessed. Materials were screened for nutritive value and local adaptation. Concurrent pot studies were conducted in a hydroponic system for more detailed assessment of nutritive traits.

The same traits were assessed in the field at both locations for comparison and determination of stability.

Lines with potential

Based on the results, three new kikuyu lines were identified as candidates with potential commercial value. These were screened with larger plot trials in 2022/23.

Results from the initial plot trials indicated the three candidate lines were resistant to disease and grow quickly with high yields over 12 months (more than 14 tonnes/ha/yr). Their nutritional values were high in terms of crude protein, water soluble carbohydrates and fibre.

The 2022/23 plots were used to produce enough runners to establish field trials.

Field trials

The three candidate lines (and Whittet as a control) were further assessed in 2024/25 through replicated strip trials on three dairy farms in southern NSW (Bega, Berry, Corstorphine).

The trials ran from November to May with the strips managed as closely as

possible to the farm's practices. Biomass was monitored using remote sensing technology and a rising plate meter. Grazing was allowed on one half of the trial and samples were collected for analysis from the mowed treatment. Biomass yield from mowing was used as a proxy for grazing and to compare with the grazing treatment.

Given the wet conditions during the 2024/25 trials, further field trials were conducted over the 2025/26 summer to better understand the performance of the candidate lines under different seasonal conditions.

Disease resistance

Lines were assessed for disease resistance in glasshouse trials where plants were inoculated with either black spot or kikuyu yellows.

To further investigate disease resistance, the 2025/26 trials included in-field inoculation of black spot and kikuyu yellows.

Two of the three candidate lines were more resistant than Whittet to black spot and kikuyu yellows.

DNA testing

Throughout all trials, samples were collected for DNA testing. In addition,

samples have been collected from regional dairy farms for testing.

The DNA analysis revealed more genetic diversity than expected with just 35% of sampled sites aligning with the Whittet and Fulkerson lines.

The three candidate lines are genetically distinct from the ones currently available commercially (largely Whittet, Fulkerson and Acacia).

Kikuyu toxicity

Several lines were concurrently tested in Dairy Up project P1b for differential toxicity response. PhD student, Vivien Tan, worked across both P1b and P1c to document outcomes.

There appears to be a relationship between kikuyu toxicity and kikuyu lines.

Conclusions and recommendations

Significant genetic diversity in kikuyu pastures was observed across the sampled sites in NSW with just 35% of sites clustering with Whittet and the Fulkerson line.

The new candidate kikuyu lines are genetically different and distinct from Whittet and the Fulkerson variety and generally different to most other pastures.

There appears to be a relationship

between kikuyu toxicity and kikuyu lines.

Kikuyu lines do not differ significantly for dry matter at each date of sampling nor cumulative dry matter across two summer seasons.

Two lines have potential for release as new varieties based on genetic diversity, dry matter production (equivalent to Whittet), better black spot resistance (better than Whittet), resistance to yellows disease (better than Whittet and equivalent to Fulkerson) and superior nutritional profile (better than both Whittet and Fulkerson).

Priorities for future

- Further evaluate the two identified lines in the Hunter region and the NSW north coast.
- Retest and confirm the kikuyu yellow resistance.
- Further investigate the suggested link between kikuyu genotype and toxicity.

Collaborators

The P1c project was a collaboration between researchers from Dairy UP, University of Sydney and Hatton's Turf.



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Final Project Summary

P1e Kikuyu: Nutritional Value



In Australia's grazing-based dairy systems, pasture utilisation is closely linked to profitability. Kikuyu is well-adapted to subtropical areas. It is fast growing but of moderate quality and generally perceived as a grass of poor nutritive value for dairy cattle.

The Dairy UP team wanted to identify ways Australian dairy farmers could manage kikuyu pasture to improve quality and utilisation.

Timing of grazing

The timing of grazing has a big impact on kikuyu's nutritive value, which affects pasture utilisation.

Kikuyu leaves lose quality very rapidly if not consumed at the right time and the window of opportunity is generally smaller than for temperate grasses.

Grazing intervals also affect stem content. Stems are more fibrous so the digestibility and nutritive value of kikuyu pasture is reduced if there's higher stem content.

Dairy UP research

This project was designed to better understand and predict the rapid, short-term daily changes in the nutritive quality of kikuyu. The key aims were to:

- Predict short-term changes in kikuyu pasture quality in real time by modelling how the plant grows and ages.
- Measure how quickly pasture quality declines during kikuyu regrowth and identify the main factors driving that decline.
- Develop practical benchmarks, such as leaf lifespan and the rate of fibre quality decline, to support better grazing management decisions.

Key findings

Findings from this work highlight the importance of grazing kikuyu earlier to maximise pasture quality and milk production. The project identified practical grazing targets of about 300–350 growing degree days (GDD), or 3–4 leaves per tiller, to help avoid rapid declines in digestibility during pasture regrowth.

More info

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P1e final report

Research and results

The Dairy UP team modelled changes in the nutritive value of kikuyu plants at different stages of regrowth.

They adapted a model originally developed for tall fescue and ryegrass. Plot-scale, field experiments were conducted in 2023 and 2024 to provide data to calibrate the model for kikuyu.

The model simulated changes in leaf digestibility during regrowth at different leaf stages. It accounted for leaf growth, leaf age, leaf size and nutritive value (fibre content, fibre digestibility and metabolizable energy).

Field experiments

The first stage involved three controlled field studies with small, replicated plots of kikuyu under different growing conditions in 2022, 2023 and 2024.

This enabled detailed assessment of plant morphology (structure) and nutritive value traits including age and

leaf length, leaf number per tiller, fibre (NDF, NDFi) and digestibility (DMD and NDFD). This data was used to quantify, model and predict the main factors affecting the rapid decline in kikuyu nutritive value during regrowth.

Results from the first two field trials were used for model development and calibration. The last one was used to validate the model by comparing model predictions with independently observed data.

Model

The model was calibrated using data from the field trials. The quality sub-model was validated and is very accurate. The model accurately predicted the decline in digestibility associated with leaf stage.

Growing degree days To track pasture growth, the Dairy UP team used growing degree days (GDD), a measure of accumulated thermal time.

The GDD approach involves adding up daily mean temperatures above the minimum temperature needed for plants to grow (usually 0°C for C3 plants like ryegrass and 10°C for C4 plants like kikuyu). Being a daily measurement, it combines temperature and age effects on plant maturity and is also used to quantify measures of other things such as leaf stage interval and reproduction stimuli.

Findings

Key findings

- Kikuyu pastures showed a rapid and consistent decline in fibre digestibility (NDFD) during regrowth, primarily driven by leaf tissue ageing.
- Changes in pasture quality were more closely associated with accumulated

thermal time (GDD) than with pasture biomass accumulation.

- Leaf lifespan was quantified at about 400 growing degree days (GDD), providing a new benchmark for kikuyu pasture management.
- Leaf ageing explained about 70% of the variation in fibre digestibility (NDFD) and more than 60% of the variation in overall pasture digestibility (DMD).
- Changes in fibre concentration (NDF) were relatively small, indicating that declining digestibility of fibre, rather than fibre concentration itself, was the main driver of pasture quality decline.
- The pasture growth and digestibility (MDP) model accurately predicted changes in fibre digestibility (NDFD), demonstrating strong capacity to simulate short-term changes in kikuyu pasture quality during regrowth.

Applications and implications

On farm

The project identified practical grazing targets to help farmers maintain kikuyu pasture quality and milk production.

Findings indicated that grazing before 300–350 growing degree days (GDD), or about 3–4 leaves per tiller, is important to avoid major declines in digestibility.

New kikuyu leaves appeared about every 75 GDD, or every 2–4 days under NSW summer conditions. This suggests leaf stage may provide a practical guide for grazing timing, similar to approaches commonly used in ryegrass systems.

Previous research suggests that a 10-unit reduction in fibre digestibility (NDFD) may reduce milk production by about 2.5 kg/cow/day, highlighting the importance of timely grazing management.

Industry applications

The thresholds and modelling framework developed through this project provide new information that could support advisory services, pasture monitoring technologies and future decision-support tools for pasture-based dairy systems. Improved management of kikuyu pasture quality has the potential to improve feed utilisation and reduce variability in milk production associated with poor pasture digestibility.

Future priorities

- Test the findings under a wider range of commercial dairy farm conditions, seasons and management systems.
- Improve the model by incorporating additional factors affecting pasture growth and quality, such as nitrogen and water availability.

- Further develop the model for integration into future digital agriculture and decision-support tools using weather data, remote sensing and on-farm pasture monitoring technologies.
- Investigate the potential application of the model in kikuyu silage systems.
- Combine pasture growth and quality predictions to better guide grazing and harvest timing decisions.

Related projects

Project P1e used data from the Dairy UP's Remote Farm Monitoring Network (P1a) and from P1c: Exploring the genetic variability of kikuyu.

The modelling work was based on earlier work that modelled changes in pasture fibre digestibility (Insua et al., 2019a) and integrated those changes with remote sensor-derived data of pasture biomass and growth (Insua et al 2019b).

Collaborators

The P1e project was a collaboration between the University of Sydney and the UIB, Argentina.



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Fall Armyworm Field Guide

Introduction to Fall Armyworm (FAW)

Fall Armyworm (*Spodoptera frugiperda*, Lepidoptera:Noctuidae) is a recent exotic incursion into Australia, first detected in early 2020 in North Queensland and northern Western Australia. FAW has now been detected in all states, except South Australia. Native to southern and central America and the southern United States, FAW is a tropical pest with a strong preference for feeding on C4 and C3 forages.

FAW is capable of long-distance migrations up to 2,000km, and 400km in a night. Currently, the patterns of FAW migration in Australia are not well understood. FAW are active all year round in northern regions, and absent from more southerly regions, or at very low densities, in winter and early spring. It is likely that spring-summer FAW populations in regions with cold winters are initiated by moths migrating from northern regions when conditions are suitable for movement. Once regional populations are established, these are most likely the source of ongoing infestations locally, although the relative contribution of locally generated compared to migrations through summer and autumn is not yet known.

Like other pests, the intensity of FAW activity varies from year to year. In the summer of 2023/24 many regions across NSW and Victoria saw significantly higher levels of FAW activity and significant crop losses, particularly in late summer. This 'outbreak' season occurred because conditions were good for FAW, but also because not all environmental drivers for the outbreak have yet been identified. Unfortunately, it isn't yet possible to predict outbreak years.

Fall Armyworm caterpillars defoliate crops by feeding directly on leaves and stalks. Larvae will also damage developing cobs and filling-maturing grain when infestations persist into the reproductive crop stages. FAW will feed on most fodder and sown grass pasture species grown in Australia. Maize, sorghum, white French millet, oats, barley, wheat, kikuyu and annual ryegrass are all susceptible to damage by FAW. For many dairy farmers, FAW is the first very damaging caterpillar pest they have encountered.

To date, FAW has not been reported to cause major losses in legumes, brassicas and other broadleaf fodder species.

FAW lifecycle

FAW have egg, larval (caterpillar), pupal and moth stages of development. Female moths lay clusters of eggs usually on the underside of leaves. The female moths cover the eggs with a layer of scales from their body; the density of the covering can vary. When larvae hatch from eggs they disperse by 'ballooning' on silks to other plants or walk up the plant to the leaf axils and whorl. The larvae grow through six instars, (the distinct developmental stages of an insect larva) moulting between instars. FAW larvae develop more quickly in mid summer than they do in spring or autumn. The duration of the larval stage can be as short as 14 days and longer when days and nights are cool.

When larvae are fully developed, they leave the plant and burrow into the soil to pupate, at a depth of 2cm to 8cm. During pupation they develop into moths inside a pupa (cocoon). Pupal development can take as little as seven days under optimal temperatures. The moth emerges from the pupal case and burrows out of the soil. Within a couple of days of emergence, female moths will mate and then start laying eggs. A female can lay up to 2,000 eggs in her lifetime and may live 10-20 days.

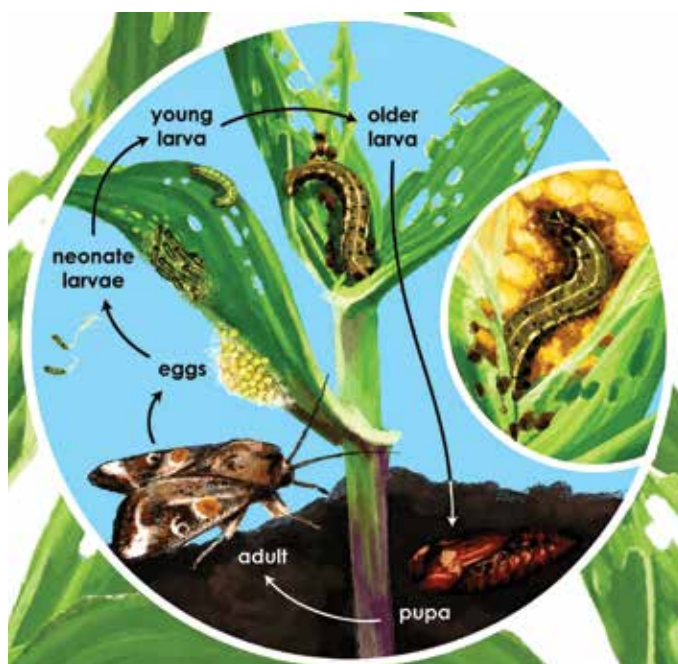


Figure 1 Fall Armyworm lifecycle. Illustration by Elia Pirtle, Cesar Australia.
Source: Kearns et al. 2020. Fall Armyworm Continuity Plan: Australian Grains industry

Identification of FAW

Fall Armyworm moths are active at night (nocturnal) but are often encountered resting in the whorl of crops during the day. Moths are approximately 17mm long. Females have mottled grey-brown forewings and a paler hindwing (not visible when resting). Males have grey-brown forewings with patterning and a distinctive white patch on the tip of each forewing.



Female resting in a leaf whorl during the day



Male FAW moth



Note: Pheromone traps can be used to help in identifying FAW.

Pheromone traps attract only male fall armyworm, but may also attract other moths (bycatch) depending on the lure used and location. The distinguishing feature of male fall armyworm moths used to identify them in pheromone traps, where the wings may be damaged, is to look for the white hair pencils extruded from the tip of the abdomen. The most common bycatch species, *Leucania loreyi* (False armyworm) has brown hair pencils.

White hair pencils extruded from the abdomen of a male FAW moth – diagnostic for FAW



Eggs

Fall Armyworm eggs are laid in clusters that can range from 50–200 eggs. Typically, these clusters are covered with scales by the female moth after she has laid them. The density of the covering can vary from sparse to very thick. When first laid, eggs are a bright white. Within 24 hours in summer, the eggs change to brown, and within two to four days dark brown to black as the Fall Armyworm larva develops and the dark head capsule becomes visible inside the egg. ■ ■



For more information, please download the **Dairy Australia Fall Armyworm Field Guide**.



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QUEENSLAND MACHINERY AGENCY



Assessing Fall Armyworm risk on dairy farms

Fall Armyworm (FAW; *Spodoptera frugiperda*) is a destructive horticultural and field pest that can devastate crops and pasture quickly.

Early detection and correct identification are critical to implementing effective control measures. Use this resource to assess the risk level of FAW on your farm and determine the steps to take to control it.

Are your crops and pastures at risk of Fall Armyworm?

If you answer **YES** to two or more of the questions below, your crops and pastures face 'High Risk' of FAW.

If you answer **NO** to two or more of the questions below, your crops and pastures face 'Low Risk' of FAW.

Do you live in an area where FAW is active?

Check the map for FAW activity risk (see Figure 1), ask local farmers and agronomists, or check pheromone trap results.

Has your farm had FAW problems before?

High FAW activity over summer indicates an increased risk of infestation in autumn.

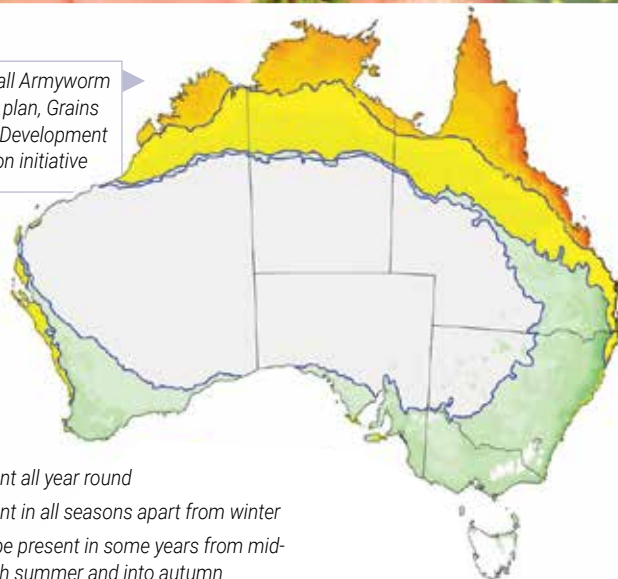
Are you growing FAW-susceptible crops or pastures?

Summer crops: Maize and sorghum (both grain and fodder types) or white French millet.

Autumn/winter crops and pastures: Oats, annual ryegrass and early sown winter cereals.

To access the full FAW assessment guide, please access using the links provided. ■ ■

Source: Fall Armyworm continuity plan, Grains Research Development Corporation initiative



Read full report [here](#)

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The SLICK breeding question is changing

As northern dairy herds head towards spring and summer, new research is shifting the SLICK discussion from simply whether the trait improves heat tolerance to how it should be used within a broader breeding strategy.

Queensland dairy farmers already know that heat stress does not begin only when cows are visibly panting. Heat load builds as temperature, humidity, solar radiation and warm nights reduce the cow's ability to shed the heat she produces.

That is particularly relevant heading into spring. The Bureau of Meteorology's August outlook has above-average daytime temperatures likely across much of Australia south of the tropics and above-average overnight temperatures across most of the country, although parts of northeastern Queensland may experience below-average daytime maxima.

Australian research also suggests that heat stress may begin earlier than previously assumed. The Dairy UP Resilient Cattle project reported reticulorumen sensors detecting rising core body temperature at around THI 67, compared with previous guidance to prepare for heat stress at THI 70 and expect production effects around THI 75.

Australian project update practical THI trigger points

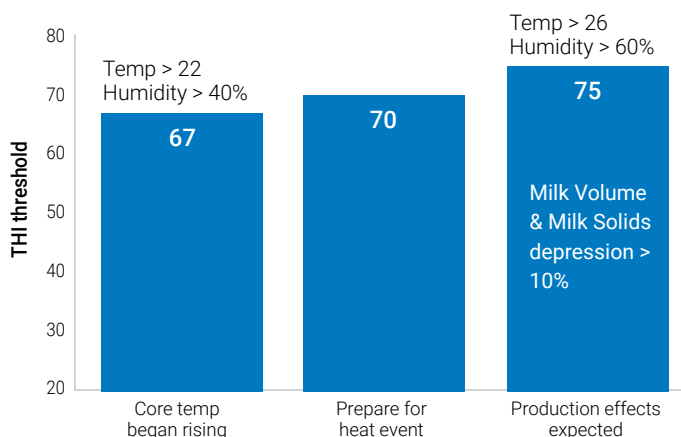


Figure 1. NDH/Dairy UP P6a Resilient Cattle (Heat Tolerance): Practical Trigger Points. **Source:** Dairy UP P6a project update, 2026.

This makes breeding cows better able to regulate body temperature increasingly relevant. But the SLICK discussion itself is now becoming more sophisticated. SLICK1, a variant of the prolactin receptor gene, is dominant: one copy is sufficient to produce the characteristic short, sleek coat and enhanced thermotolerance. A 2025 study from a commercial tropical dairy herd in Costa Rica asked a new question - does having two copies matter?

Researchers compared 79 homozygous SLICK1 cows, 68 heterozygous SLICK1 cows and 13 cows without SLICK1. After modelling their lactation curves, the homozygous cows produced 356 litres, or 9%, more milk over 305 days than the heterozygous cows, with most of the difference occurring during the first 200 days of lactation.

Queensland dairy farmers already know that heat stress does not begin only when cows are visibly panting.

Costa Rica commercial herd study

Homozygous SLICK1 cows produced 356 L, or 9%, more milk over 305 days than heterozygous SLICK1 cows.

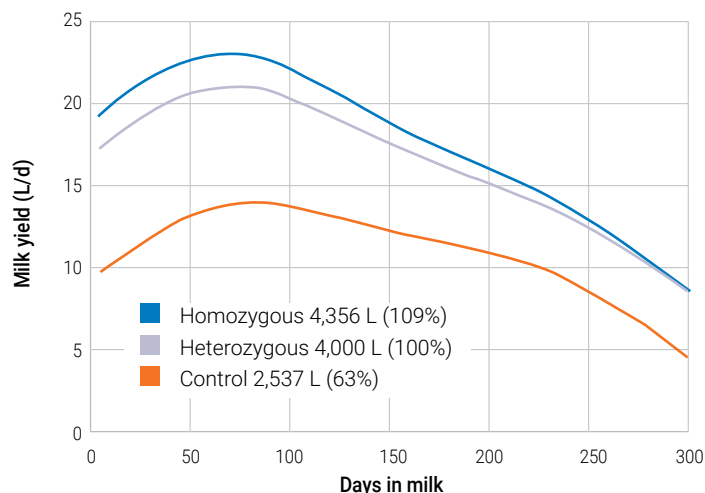


Figure 2. Fitted (Legendre polynomials) lactation curves for homozygous SLICK1 ($n = 79$), heterozygous ($n = 68$), and control (wild type; $n = 13$) cows.

The result deserves attention, but also perspective. It came from one tropical commercial herd with more than 15 years since Senepol crossbreeding, and the non-SLICK control group was small, probably due to culling of lower production cows. Further investigation will determine for Australian Holsteins or Jerseys what is the impact of carrying two copies of SLICK, over one copy of SLICK that already gives a serious advantage.

To transition the herd to SLICK as soon as possible requires a Homozygous sire. A heterozygous SLICK animal is expected to pass SLICK to about half its progeny, whereas a homozygous animal can pass a SLICK allele to all its progeny. If further research confirms additional performance differences between one and two copies, zygoticity may become increasingly relevant when designing heat-tolerant herds.

One Copy Or Two?

Heterozygous SLICK → 50% of progeny inherit SLICK
Homozygous SLICK → all progeny inherit a SLICK allele

Inheritance expectation; not a guarantee of production performance.

Other research also explains why SLICK may matter beyond hair length. A 2024 Journal of Dairy Science study in Puerto Rico found SLICK Holsteins maintained lower vaginal temperatures, greater voluntary exposure to solar radiation and greater mammary blood flow than wild-type Holsteins under tropical conditions.

The SLICK1 mutation also provides early-life thermoregulatory benefits that depend on environmental severity: in high, humid heat (average 24-hour THI 90 in Florida), slick-haired calves maintained a 0.4°C lower rectal temperature than non-slick calves, whereas no significant temperature difference occurred under lower heat loads (average THI 72 in California).

Latest Slick Holstein Bull Proofs – August 2026

NASIS2	NAMELONG	GENETIC_CODE	BPI	BPL_REL	ASI	PROT_BV	PROTP_BV	MILK_BV	FAT_BV	FATP_BV	OTYPE_BV	MAMM_BV	SCC_BV	FERT_BV	LWT_BV	HW	SI
COOLNADY	VALA BELLWEATHER NADY 50763	A22;SLC	606	63	266	17	0.19%	262	27	0.23%	108	107	148	101	99	480	776
COOLBOOKIE	VALA DYNASTY BOOKEND 50766	A22;BKC;SLC	534	66	341	13	0.02%	431	49	0.44%	111	112	129	100	103	343	646
SLICEMAN	JELBART SL ICEMAN PP	A22;POS;SLC	491	63	277	18	0.30%	73	25	0.32%	102	106	129	105	101	383	570
COOLMAN	VALA SUNSATON MANNY 50757	A22;SLC	468	64	412	17	0.47%	-306	45	0.83%	105	109	113	96	103	233	620
29HO23018	ICEBLUE STYLE-SLICK-ET	A22;SLC	460	63	321	13	-0.02%	530	47	0.35%	106	108	139	97	103	262	598
29HO22101	DENOVO 21618 IRVING-SLICK-ET	A22;SLC	431	63	423	25	0.21%	533	48	0.36%	105	102	113	98	105	216	591
COOLSABLE	VALA ROASTER SABLE 50762	A22;POS;SLC	405	64	156	2	0.11%	-127	23	0.40%	106	103	112	107	102	358	412
SLHONDA	SUMMIT VIEW SL HONDA P	A22;POC;SLC	397	63	60	11	0.15%	95	-3	-0.10%	103	103	124	112	105	437	358
29HO21302	FIT COOLOFF-SLICK-ET	A22;SLC	385	63	116	8	-0.12%	526	18	-0.06%	105	104	144	98	100	311	546
COOLHARRY	VALA FORBES HARRY-ET	A22;SLC	319	65	74	5	0.01%	181	9	0.01%	104	104	117	105	100	302	357
29HO21953	DENOVO SENNET-SLICK-ET	A22;SLC	314	64	422	18	0.12%	437	56	0.54%	105	104	105	94	104	75	463
COOLHARP	VALA SUNSATON HARPOON 5076	A12;POC;SLS	257	63	118	10	-0.01%	381	13	0.04%	103	106	112	101	99	203	343
COOLBEAM	VALA ROASTER BEAMSTAR 50786	A22;POC;SLS	188	63	-27	1	0.05%	-49	-7	-0.08%	104	101	130	104	99	181	160
0196HO58179	JA-BOB THERMO P	A12;POC;RDS;SLC	83	66	100	7	0.23%	-210	5	0.20%	99	100	106	100	100	20	114
STGROLAND	STGEN ROLAND SLC	SLC					%			%							

HT (Heat Tolerant) ABV and SLICK should be viewed as complementary. HT ABV evaluates heat-tolerance performance across the genome; SLICK is a specific inherited SINGLE GENE associated with enhanced heat dissipation. Genetics still does not replace shade, water, ventilation, sprinklers, nutrition or good herd management; it changes the animals farmers are managing.

The question is no longer “Does SLICK help in the heat?” It is increasingly: “How do we use it most effectively, one copy or two, while continuing to breed the productive, fertile and durable dairy cow northern Australia needs?” ■ ■ ■



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2026 Event Calendar

DATE	EVENT	REGION	LOCATION	CONTACT
September				
1	Cash Costs and Margins (Managing Farm Costs)	Far North Coast NSW	TBC	Maree Searle
15	Employment Starter Kit (Q&A and update)	Mid North Coast NSW	Dorrigo	Maree Searle
16-17	Business Governance and Investment Forum	National	Melbourne	Belinda Haddow
17	Employment Starter Kit (Q&A and update)	Far North Coast NSW	Casino	Maree Searle
18	Service Provider Forum	South East Qld	Gatton	Michela Secci
TBC	Cash Costs and Margins (Managing Farm Costs)	Far North Qld	TBC	Michela Secci
15	Sunshine Coast Regional Group meeting	Sunshine Coast	TBC	Belinda Haddow
16	South East Qld Regional Group meeting	South East Qld	TBC	Belinda Haddow
17	Darling Downs Regional Group meeting	Darling Downs	TBC	Belinda Haddow
TBC	Far North Qld Regional Group meeting	Far North Qld	TBC	Michela Secci
October				
6	Cash Costs and Margins (Managing Farm Costs)	Sunshine Coast	TBC	Belinda Haddow
7	Cash Costs and Margins (Managing Farm Costs)	Darling Downs	TBC	Belinda Haddow
8	Cash Costs and Margins (Managing Farm Costs)	South East Qld	TBC	Belinda Haddow
13	Mid North Coast NSW Regional Group meeting	Mid North Coast NSW	Dorrigo	Maree Searle
14	Far North Coast NSW Regional Group meeting	Far North Coast NSW	Casino	Maree Searle
Coming Soon				
Healthy Hooves				
Top Fodder				
Cool Cows webinar				
Farm Business Fundamentals				

Belinda Haddow 0423 003 638
 Maree Searle 0494 678 009
 Michela Secci 0484 525 588

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*Eligibility criteria applies. The information contained herein is for general information purposes only. You should not rely upon this information as a basis for making any business, legal or any other decisions.

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