



The power of pasture utilisation

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

Unlocking the potential of Kikuyu

Dairy UP's PI project aimed to unlock the potential of Kikuyu pastures used by NSW dairy farmers. PI 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.

PIa – Kikuyu: Remote monitoring

PIb – Kikuyu Investigating toxicity

PIc – Kikuyu: Developing new varieties

PI d – Kikuyu: Carbon on NSW dairy farms

PI e – Kikuyu: Nutritional value

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

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

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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,

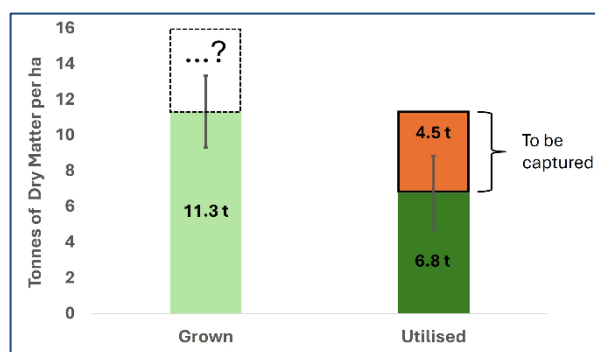


Figure 1: Up to 4 tonne DM/ha extra feed is potentially capturable; and that is without considering the potential to grow more [left bar].

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, over page). However, the amount of pasture consumed varied between farms with similar pasture production. Pre- and post-grazing biomass, and grazing frequency, explained some of the variation while characteristics such as farm size did not.

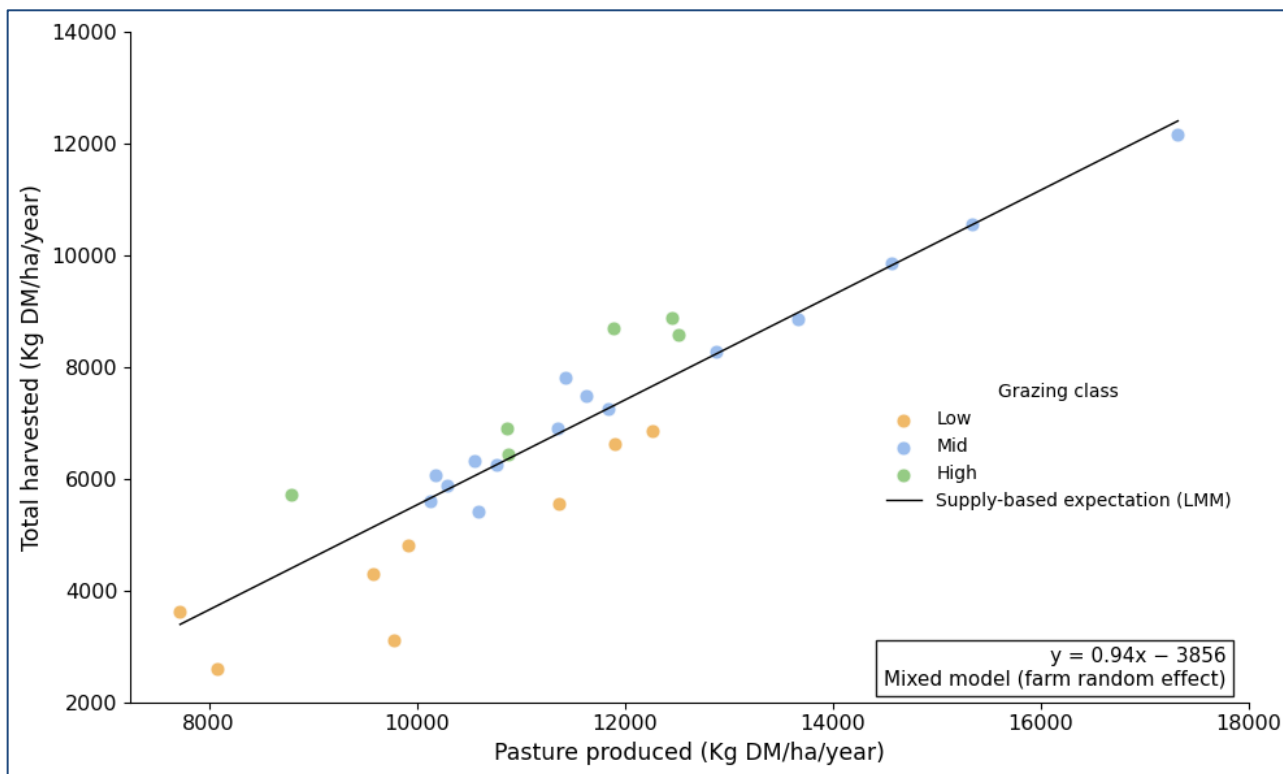


Figure 2: Although pasture grown is a key driver of pasture harvested, some farms achieved higher utilisation than others with similar pasture production highlighting the importance of management.

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 fortnightly. 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

[PI a Final Report](#)

[Dairy Australia Strategic Plan 2030](#)

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Delivery organisations



Department of Primary Industries
and Regional Development



Partner organisations



Additional program supporters, collaborations or partnerships

Charles Sturt University | DairyBio | DataGene | Eagle Direct | Entegra
Macquarie University | NSW EPA | smaXtec | UC Davis | University of Technology Sydney
