IMPACT EVALUATION

Crops for Cattle

Project: A.2.2122027
Cotton Grains Cattle Program: Crops for Cattle NT - Improving productivity through feeding strategies and virtual fencing

Research program:
2 – New and developing industries in northern Australia

Project timeframe:
2022 to 2026

Partners:
- NT Dept Agriculture and Fisheries
- Cotton Research and Development Corporation (CRDC)
- Grains Research and Development Corporation (GRDC)
- Australian Agricultural Company
- Avago Station Pty Ltd
- National Feed Company Pty Ltd
- Northern Livestock and Agriculture Pty Ltd
- Northern Livestock Company Pty Ltd
- Ridley AgriProducts Pty Ltd
- Surf & Turf Cattle Operations PTY LTD
- T.J Oxley & P.J Thomson
- The Trustee for JOHN ARMSTRONG FAMILY TRUST
- Northern Ag and Civil Pty Ltd

Project locations:
- NT Dept Agriculture and Fisheries research stations: Victoria River Research Station, Katherine Research Station, Beatrice Hill Farm
- LaBelle Station
- Avago Station
- Ruby Downs Station
- Maryfield Station
- Legune Station
- Larakeyah Station
- Gilnockie Station
- Hodgson Downs Station
- Mistake Creek Station
- Claravale Station

Project summary:
The CRCNA's Cotton, Grains, Cattle (CGC) program is one of its major agricultural research investments, bringing together six coordinated projects across northern Australia to improve productivity, sustainability and integration between cropping and cattle production.

Within this program, the Crops for Cattle NT project investigated strategies to improve dry-season cattle liveweight gain, herd productivity and profitability across northern Australia.

The research evaluated 14 feeding strategies using on-station and commercial trials, economic modelling and sensitivity analyses. Findings identified conditions under which different feeding systems could be profitable, while demonstrating that improved animal performance does not necessarily translate into whole-of-herd financial benefits.

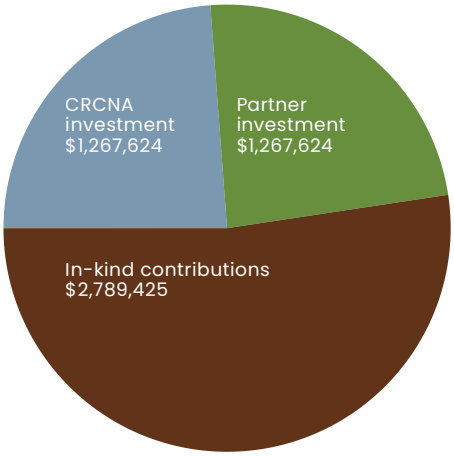
Three virtual fencing trials also demonstrated opportunities to improve livestock distribution, protect degraded grazing areas and implement precision grazing.

The project generated locally relevant production and economic data, strengthened research and industry collaboration, and supported producer engagement through field days and industry events.

Its findings provide an evidence base to guide future feeding investments, grazing management decisions and adoption of emerging technologies across northern beef enterprises.



Project return on investments:



Return on investment to date has been at least a 4.2 times return on the CRCNA's investment of $1,267,624.

Jobs created:

6.6 FTE during the 4 year project

Project impacts to date:

Increases in production:

- Evaluated 14 feeding strategies, documenting actual cattle liveweight gains across Northern Territory research stations and commercial properties.
- Identified feeding strategies with potential to increase dry-season liveweight gain, support earlier steer turnoff and improve heifer performance.
- Demonstrated that increased animal growth does not necessarily improve whole-of-herd productivity or profitability, highlighting the importance of enterprise-level assessment.
- Three virtual fencing trials successfully demonstrated livestock management applications, including encouraging cattle to access new water points, excluding cattle from degraded grazing areas and implementing controlled strip grazing under irrigation.

Project impacts to date:

Reduced costs:

- Developed economic modelling and sensitivity analyses to assess feeding costs, gross margins, break-even cattle prices and whole-of-herd profitability.
- Identified feeding strategies that were not commercially viable under assessed conditions, providing valuable evidence to help producers avoid uneconomic investments.
- Demonstrated the potential for virtual fencing to reduce reliance on additional physical fencing infrastructure, although direct cost savings and commercial viability were not evaluated.
- Generated evidence to inform future private investment in supplementary feeding, fodder production, irrigated pastures and livestock management technologies.
- Established opportunities for further collaboration with the virtual fencing technology provider to investigate commercial applications in northern cattle enterprises.



Project impacts to date:

Wellbeing improved:

- Improved access to locally relevant research and economic information to support producer decision-making and reduce uncertainty associated with feeding investments.
- Demonstrated opportunities for improved landscape management through virtual fencing, with potential longer-term environmental benefits.

Extension activities included:

- Generated locally relevant technical and economic data on cattle growth performance, feeding systems and virtual fencing applications to support future industry learning and advisory services.
- The project featured in various industry events and conferences to share findings, including the Farm to Feed Forum, Douglas Daly field days, Kidman Springs field days, Northern Australia Food Futures Conference, North Australian Beef Research Council conference, NT Cattlemen's Conference, Asian-Australasian Association of Animal Production Societies Conference, Developing Northern Australia Conference.
- Strengthened research and industry partnerships, with ongoing communication between researchers and participating producers beyond the project's completion.

Projected impacts beyond 2026

- Improved livestock productivity and profitability: Adoption of suitable feeding strategies could increase dry-season liveweight gain, support earlier market turnoff and improve enterprise profitability where commercial conditions are favourable.
- Reduced investment risk: Feeding performance data and economic analyses could help producers identify financially viable strategies and avoid costly investments with limited returns.
- Virtual fencing adoption: Further research and commercial evaluation could support wider adoption of virtual fencing to improve grazing distribution, protect degraded landscapes and enable more precise pasture management.
- Environmental benefits: Improved production efficiency could reduce lifetime livestock emissions, while more targeted grazing management may support better pasture utilisation and landscape condition.
- Continued industry extension: Planned producer workshops and decision-support resources could strengthen industry capability in feed budgeting, cost-of-gain calculations, financial risk assessment and whole-business decision-making.

Access full project details and reports:
crcna.com.au/projects/crops-for-cattle-nt/









CRCNA
DEVELOPING NORTHERN AUSTRALIA

Australian Government
Department of Industry, Science and Resources

Cooperative Research Centres Program

Research for **sustainable** and **inclusive** development of **northern Australia**.

Gurambilbarra Country, Wulgurukaba and Thul Garrie Waja Country, Bindal
Suite 5/ 281 Ross River Road Townsville Qld

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This impact assessment has been developed in collaboration with the CRCNA and project partners. It draws on project reporting, stakeholder input and available evidence to assess project outcomes and potential longer-term impacts. Projected impacts are indicative and based on reasonable assumptions at the time of publication. Information contained in this assessment was considered accurate at the time of publishing.