

A close-up, high-angle photograph of a cow's head, focusing on its eye and the texture of its light brown fur. The cow is looking slightly to the right. The background is a soft, out-of-focus light blue.

SmartBeef

Smarter, Richer Beef

HANDBOOK

Proudly hosted by the Australian Lot Feeders' Association

11-12 October 2023 | Tamworth & Quirindi

ALFA

The logo for Meat & Livestock Australia (MLA), featuring a stylized white outline of a sheep's head above the lowercase letters 'mla' in a bold, sans-serif font.

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SmartBeef is proudly brought to you by the Australian Lot Feeders' Association (ALFA) on behalf of lot feeders across the country.

ALFA is the peak national body representing the Australian cattle feedlot industry. Join the community by becoming a Member today.

Foreword

The ALFA Events Committee are thrilled to produce this year's SmartBeef program. We focused on filling it with demonstrations of new tools and technologies that are shaping our businesses and are importantly upskilling and empowering our industry's dedicated workforce.

Being hosted in the Country Music Capital of Tamworth, and on site at Elders' Killara Feedlot, the event will be bringing together a 300+ strong cohort. See firsthand the latest in feedlot research and development and kick back with some healthy campdraft competition fun at the end of the day.

We'd like to sincerely thank the sponsors who have made SmartBeef23 possible. We would not be able to deliver such an impactful event without the enthusiastic support of our sponsors, all of whom are a valuable part of our industry and community.

On behalf of ALFA and the Events Committee, welcome to SmartBeef23. We look forward to sharing in the experience with you and seeing new connections form, and old ones strengthen.



Paul Vogt

Paul Vogt
Chair, ALFA Membership, Events & Industry Capacity Committee

Table of Contents

Program _____	Page 6
Sponsors _____	Page 10
Machinery Display _____	Page 12
Speakers, Topics & Abstracts _____	Page 13
Awards:	
• ALFA Young Lot Feeder of the Year Grand Finalists _____	Page 31
• ALFA Community Heroes Award Entrants _____	Page 38
• ALFA Innovation Competition Entrants _____	Page 45

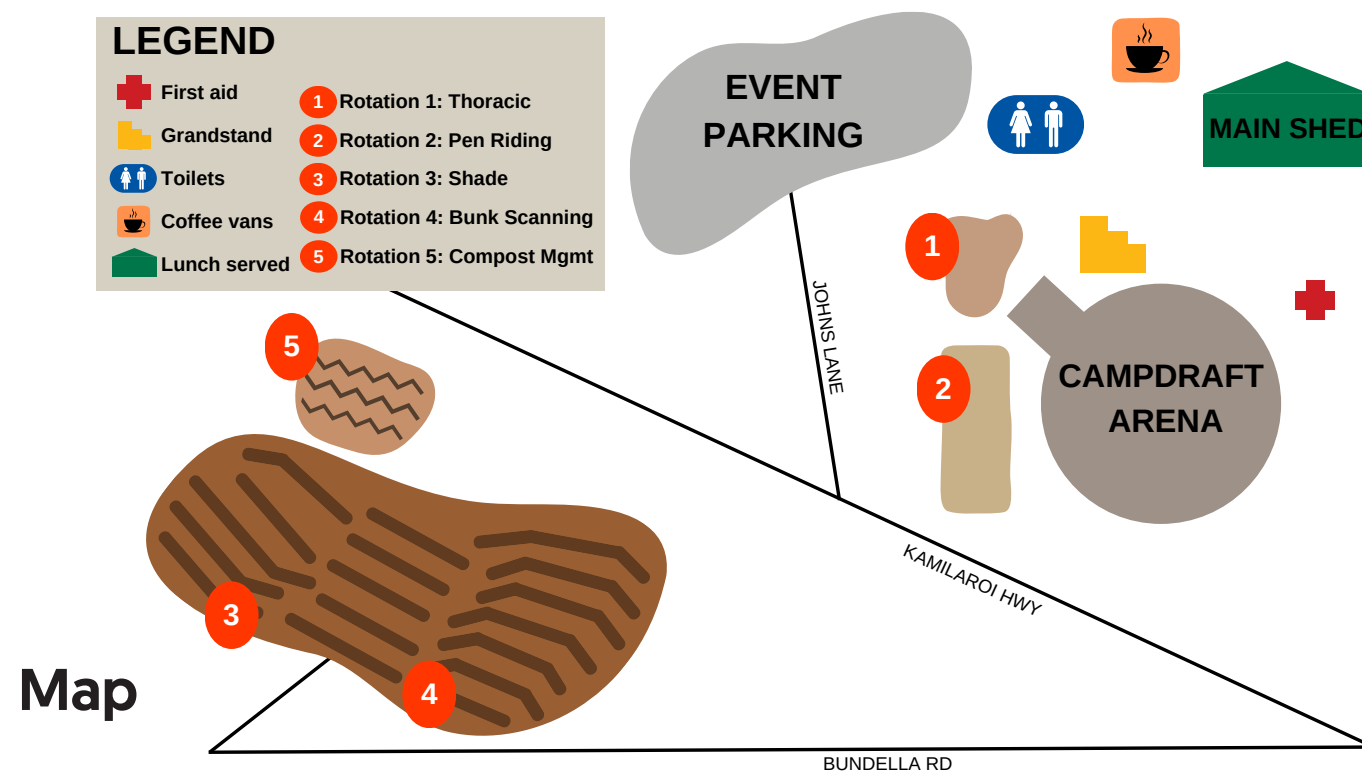


SmartBeef

Smarter. Richer Beef

LEGEND

- | | |
|--------------|---------------------------|
| First aid | Rotation 1: Thoracic |
| Grandstand | Rotation 2: Pen Riding |
| Toilets | Rotation 3: Shade |
| Coffee vans | Rotation 4: Bunk Scanning |
| Lunch served | Rotation 5: Compost Mgmt |



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Conference Program

Registrations & Industry Awards Dinner

Wednesday October 11th	
5:00pm	Registration Desk Opens
5:30 – 6:30pm	Pre-Dinner Drinks, Proudly Sponsored by Performance Feeds
6.30pm – 10.30pm	ALFA Industry Awards Dinner

Feedlot Program & ‘SmartBeef Cup’ Campdraft

Thursday October 12th	
From 7:30am until 8am	<p>Event Buses depart for SmartBeef23</p> <p>Pick up point: Tamworth Regional Entertainment & Conference Centre (TRECC), Greg Norman Drive, Hillvue, Tamworth</p> <p>Free all-day car parking is available at TRECC. Driving to Wilga Campdraft Arena is permitted, and car parking available. Strictly no cars are permitted at the feedlot at any time.</p> <p><i>Proudly sponsored by Angus Australia</i></p>
8:30am	<p>Registration Desk Open</p> <p>Pick up your Event satchel, thanks to Jefe, and lanyard, thanks to Nutriment Health, upon arrival.</p> <p>Arrival barista made coffees available thanks to Feed Central.</p> <p>Bites available thanks to GrainCorp Liquid Feeds.</p> <p>All delegates will be allocated a rotation group upon arrival.</p>
9.30am	<p>Welcome Address <i>Andrew Talbot, General Manager at Elders’ Killara Feedlot</i></p> <p>ALFA Address <i>Barb Madden - ALFA President</i></p>

10am – 4pm Rotation Topics	
Rotation 1	<p>Identifying the issue: a thoracic ultrasound demonstration and remote diagnostics with wearable tech <i>Dr Tony Batterham, Feedlot Veterinary Consultant, Apiam Animal Health Limited</i> <i>Dr Robbie Hayward, Apiam Animal Health Limited</i></p>
Rotation 2	<p>Navigating the pens: a livestock handling demonstration <i>Ryan Brown, Smithfield Cattle Company</i> <i>Dr Lachy Strohfeltd, BVSc, Protein Production Vets</i></p>
Lunch Break (staggered) Proudly sponsored by Zoetis	
Rotation 3	<p>Monitoring the bunk: a bunk scanning demonstration <i>Dr Stuart McCarthy, Managing Director, Manabotix</i> <i>Phil Lambert, Feedlot General Manager, Teys Australia Condamine</i></p>
Rotation 4	<p>Reaching for the roof: partial & covered housing research <i>Dr Matt van der Saag, Meat & Livestock Australia</i> <i>Alex Smith, Feedlot Manager, Rangers Valley</i> <i>Andrew Talbot, General Manager, Elders’ Killara Feedlot</i></p>
Rotation 5	<p>Compost processing for crop productivity & soil carbon <i>David Barnes, Operations Manager, Elders’ Killara Feedlot</i> <i>Peter McKenzie, Principal Agronomist/Director Agricultural Consulting & Extension Services</i></p>
4pm	<p>Nifty Innovations – ALFA Innovation Competition Presentation <i>Proudly sponsored by Integrated Animal Production</i></p>
4:30pm	Day Event Close – ALFA President

‘SmartBeef Cup’ Campdraft Competition Wilga Campdraft Arena	
5pm	<p>Campdraft Competition Open – ‘SmartBeef Cup’ It’s what you’ve all been waiting for, the SmartBeef Campdraft Competition! Quite possibly we will see some of the best riders the country has to offer, as feedlot teams go head-to-head in the inaugural SmartBeef Cup. Prizes will be awarded to the top riders and teams. Cheer on from the sideline, as the horses and cattle dance around the AustAsia pegs, and get amongst the electric atmosphere with refreshments on ice at the Fodder Link Bar.</p> <p>A night not to be missed. Grab your hat, grab your belt buckle, and meet us down at the main arena!</p> <p><i>With thanks to our campdraft sponsors and partners:</i> <i>AustAsia</i> <i>FodderLink</i> <i>Elders Killara</i> <i>ABCRA</i> <i>Westpac Rescue Helicopter Service</i></p>
7.30pm	Event Close
7:30pm	<p>Buses depart from Wilga Campdraft Arena to Tamworth: - Drop off point at TRECC</p>
8:30pm - late	<p>Official SmartBeef23 “Roto-Mixer” After-Party @ Longyard Hotel <i>Proudly sponsored by Roto-Mix</i></p>



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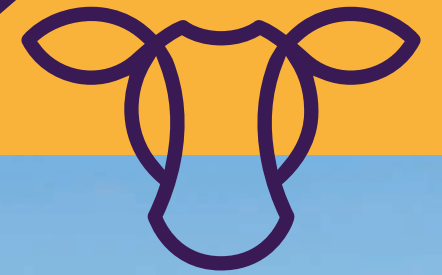
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STUDENT EVENT SCHOLARSHIP PARTNERS:
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Thanks to our sponsors, a number of scholarships have been issued to students undertaking tertiary studies in an agricultural related field to attend SmartBeef.

Be sure to make them feel welcome!



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Angus Australia is a member-based, not-for-profit organisation that increases the profitability of its members through the facilitation and delivery of beef value chain focused, value adding initiatives that enhance, promote and protect the value of Australian Angus cattle and beef domestically and internationally.

Q angusaustralia.com.au



MORNING TEA PARTNER & ALFA PLATINUM MEMBER
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GrainCorp Feeds is Australia's leading science-based feed supplement manufacturer. They supply molasses-based supplements and vegetable oil to enhance year-round health and productivity in beef and dairy cattle, sheep and other domestic livestock. By creating individualised feed programs using farm data and formulation science, their RationAssist and PastureAssist programs bridge The Nutrition Gap between available feed and livestock needs. GrainCorp has been an ALFA Platinum Member since 2012.

Q www.feeds.graincorp.com.au



CAMPDRAFT BAR PARTNER
Fodderlink

Fodder Link was founded from humble beginnings in 2016 and has since expanded into a large-scale operation, providing feed to a broad range of enterprises across the country. With a superior interstate feed supplier network and independent grading and feed testing, they ensure a premium nationwide service for all their customers. Their connections and expertise make them a trusted platform for marketing and selling various feed products.

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Performance Feeds

Performance Feeds has been custom formulating a complete range of feedlot supplements since 1994, which has brought a new era of feedlot supplementation to the Australian feedlot industry. Bringing innovation to Livestock Nutritional Programs, Performance Feeds offer a custom formulating service for feedlots. Supplements are individually formulated by their nutritionist to suit the feedlots own raw materials and livestock to ensure superior performance. Performance Feeds has been an ALFA Platinum Member since 2009.

Q performancefeeds.com.au



LANYARD PARTNER & ALFA PLATINUM MEMBER
Nutriment Health

Nutriment Health is an Australian owned and operated business, supplying probiotics and other feed additives (both medicated and non-medicated) to the Australian Stockfeed Industry. Nutriment Health has been an ALFA Platinum Member since 2015.

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Feed Central's online buying and selling platform is Australia's largest hay and grain marketing opportunity for farmers. Offering the largest selection of products nationally, Feed Central offers personal service and expert advice to both buyers and sellers in a secure and standardised trading structure. Whether it's testing products, meeting end users, or helping customers get the best product for their animals, Feed Central's passion for the farming industry is clearly reflected in its customer service approach.

Q feedcentral.com.au



MAJOR PARTNER
Meat & Livestock Australia

Meat & Livestock Australia (MLA) is a not-for-profit, producer-owned company acting as the marketing, research and development body for Australia's red meat and livestock industry. MLA's purpose is to foster the long-term prosperity of the Australian red meat and livestock industry, by investing producer levies into research and marketing activities that contribute to profitability, sustainability and global competitiveness.

Q mla.com.au



LUNCH PARTNER & ALFA PLATINIUM MEMBER
Zoetis

Zoetis is a global animal health company dedicated to supporting customers and their businesses in ever better ways. Building on 70+ years of experience, they deliver quality medicines and vaccines, complemented by diagnostic products and genetic tests and supported by a range of services. Zoetis is working every day to better understand and address the real-world challenges faced by those who raise and care for animals in ways they find truly relevant. Zoetis has been an ALFA Platinum Member since 2009.

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OFFICIAL AFTER-PARTY PARTNER & ALFA PLATINIUM MEMBER
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Roto-Mix is a renowned global leader in innovative feed mixing solutions. For over 30 years, they have been at the forefront of providing top-quality feed mixing equipment that ensures optimal nutrition and efficiency for livestock operations. With a strong commitment to research and development, Roto-Mix continuously evolves to meet the ever-changing needs of the agricultural sector. Roto-Mix specialises in cutting-edge feed mixers and delivery systems designed to enhance feed quality, reduce waste, and increase productivity. Roto-Mix joined ALFA's exclusive Platinum Membership this year.

Q rotomix.com



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Since 1982, Jefo designs solutions to meet the needs of the animal industry, with a forerunner vision. Backed-up by their applied scientific curiosity, Jefo's passionate and creative team of animal scientists, veterinarians and Ph.Ds bring real-life solutions to the table. Jefo employs over 250 professionals around the world, has offices in four continents and commercializes its products in 60 countries.

Q jefo.ca/en/



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Austasia Animal Products is committed to supplying evidence-based, high-quality organic trace minerals and probiotic products vital to the health, growth and protein synthesis in production animals—manufactured and processed in their Forbes, NSW, facility. They are engaged in the manufacturing and marketing of organic trace mineral compounds vital to health, growth and protein synthesis in food producing animals.

Q zinmet.com.au

Swing by the Machinery Display

Dotted around the campdraft arena you will find machinery on display for you to check out.



FARMBOT MONITORING SOLUTIONS

Farmbot is the tool that is trusted by the agriculture industry to remotely monitor their water assets. Farmbot's range of sensors and the easy-to-use platform, MyFarmbot, provides real-time text and email alerts along with reporting of water levels and trends. Save time driving to check water and have constant peace of mind knowing your water from anywhere.



NUMAT AGRI

Numat AGRI's unique YoungStar cattle mat was designed in Australia specifically for Feedlots. Developed in direct collaboration with the industry, YoungStar provides superior slip resistance, comfort, and durability, and is easy to clean, and is the ideal solution for lot feeders wanting to improve animal welfare, increase productivity, and reduce the risk of injury.



BROWN & HURLEY

Established in 1946, the Brown and Hurley Group commitment to the Australian Road Transport Industry spans over 77 years. Brown and Hurley is a wholly family owned Australian company employing over 600 people, with eleven truck branches and nine Agricultural branches strategically located throughout Queensland and northern New South Wales from Tamworth to Tolga. Brown and Hurley are the local premium heavy transport suppliers of New Kenworth and DAF trucks, also offer new trailer sales along with in house finance and leasing options.

Topics on rotation at SmartBeef23

Groups will travel through the five rotations throughout the day to gain a better understanding of current technologies and best practices.



IDENTIFYING THE ISSUE:

A thoracic ultrasound demonstration and remote diagnostics with wearable tech



NAVIGATING THE PENS:

A Livestock Handling Demonstration



MONITORING THE BUNK:

A Bunk Scanning Demonstration



REACHING FOR THE ROOF:

Reaching for the roof: partial & covered housing research



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Identifying the issue:

A thoracic ultrasound demonstration and remote diagnostics with wearable tech

Dr Tony Batterham
Feedlot Veterinary Consultant

Dr Robbie Hayward
Apiam Animal Health Limited

This demonstration will highlight the utility of hands-free assisted reality headsets for health and welfare management in cattle feedlots. Known in other contexts for their role in virtual reality, where users are immersed in a computer-generated virtual world, assisted reality headsets can provide digital overlays in a user's real-world field of view such that they keep situational awareness while conducting livestock health and welfare operations.

The digital overlays can be resource material such as manuals, guidelines, workflows, instructional videos or active connection to a remote (off-site) expert in the form of video conferencing. Multiple remote experts can be connected on the one live-streaming call, with the ability to call up resource material and other aides within the call to share and utilise among the participants in order to resolve the task at-hand. The headsets are worn as part of normal headwear such as hats and helmets and are operated totally hands-free utilising voice commands thereby allowing safe, effective and efficient operation in a feedlot setting where situational awareness is paramount.

Applications for the technology in livestock operations include, but not limited to, pen riding surveillance for common feedlot conditions, hospital pen assessments for recovery and prognosis, fit-to-load assessments, necropsy performance and interpretation, hospital treatments and procedures, animal handling and welfare audits, etc.

The major value proposition is that livestock staff can connect to veterinary extension resources in their field of view while doing health and welfare tasks, but also to their veterinarian directly while the vet is off site. This telehealth function allows the vet to be "over the shoulder" of livestock staff while the task is performed, getting the full view as seen by the staff member and interacting live in the process in discussion and sharing resources. As above, a report can automatically be generated and transmitted from the interaction for later review. There is also the prospect of feedlot

operators that cannot engage a specialist veterinarian for regular site visits, being able to connect remotely or indeed local veterinarians less familiar with feedlot medicine and herd health being able to connect to the remote expert. Since image capture is a central function of the technology, future features will include AI enabled recognition of disease states and other common feedlot conditions with subsequent prompting of the livestock staff member to consider appropriate actions for the animal in the field of view.

Accurate and early disease diagnosis at feedlots are important to improve feedlot performance, health, welfare and carcase characteristics. Bovine Respiratory Disease (BRD) results from the complex interaction of pathogens with animal, environmental and management risk factors. Human observation combined with current diagnostic technologies have only a moderate sensitivity and specificity for diagnosis. MLA and the Australian Lot Feeders' Association have set the strategic objective to support research and development to enable release of an automation of health detection system by July 2027, with a positive return on investment to lot feeders. In the last 5 years, a number of automated tag systems have been developed to detect or diagnose bovine respiratory disease in feedlot cattle. Providing confirmation of the accuracy and value proposition of these tag systems will be important for commercial adoption. Research to calibrate such technologies against gold standards for infection and disease in live animals is required.

MLA Project B.FLT.3010 was recently completed, which was MLA's first dedicated investment to Gold Standards for Bovine Respiratory disease diagnosis. The project illustrated why we need better diagnostics than daily human observation; of the 29 animals clinically scored as ill by one to two consecutive observations at 7 am and 12 pm (but did not display illness at a 3rd scoring the following morning at 7am), not treated for BRD per the feedlot treatment protocol, and ultimately managed to harvest slaughter, only 3 presented with abnormal pulmonary status. These study animals might have potentially resolved any pulmonary lesions existing at the time of clinical (visual) scoring, or, were false positive designations at the time of clinical illness scoring.

MLA Project B.FLT.3010 identified promising diagnostics in a small numbers of truly sick and truly healthy animals, which included thoracic ultrasound (Se: 100%, Sp: 90%).

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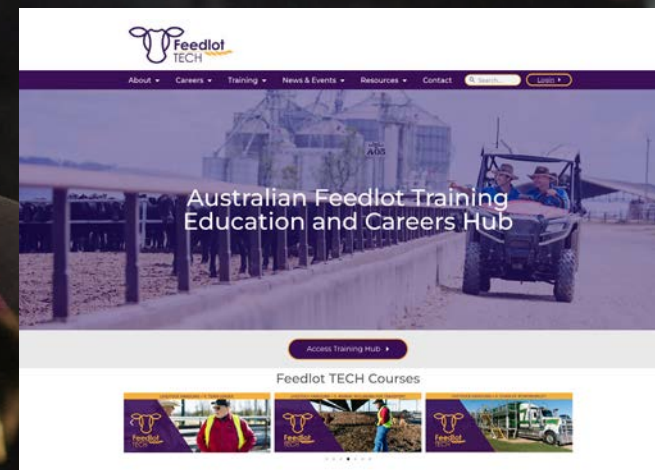


Understanding covered housing systems design

MLA is launching a *Covered Housing Manual* for Australian feedlots at ALFA Smart Beef 2023.

Hear the latest information on design and construction, regulatory approvals, bedding, manure management, welfare standards, animal health considerations and costs.

Scan the QR code to read more.



Proudly partnering with ALFA on Feedlot Tech

MLA in collaboration with ALFA, funds Feedlot Tech, a platform that offers training opportunities, career pathways, feedlot resources and industry updates. MLA and ALFA are excited to launch the following courses:

- Fundamentals of feedlot nutrition, Feeding and milling operations
- Pen riding
- Animal Welfare Officer online training
- Livestock handling fundamentals

Scan the QR code for Feedlot Tech training:



Short duration lairage maximises returns

By limiting time in lairage to less than four hours, recent MLA funded research has demonstrated the potential for hot carcass weight gains of up to 7.4kg over conventional overnight lairage.

This is an extra \$48 dollars* per head in revenue for mid-fed export cattle.

*Assumes a \$6.50/kg HCW price.

Scan this QR code to learn more about this research:



All of the news and information you need

MLA is committed to providing the lot feeding industry with the latest market information and industry news, including:

- prices and markets dynamic reports and indicators
- industry projections
- saleyard (NLRs) and slaughter reports
- ALFA and MLA's quarterly Lot feeding brief
- e-newsletters, such as MLA's *Quarterly Feed*
- MLA's *Feedback* magazine.



Scan here to sign up to MLA's e-newsletter for the lot feeding industry, the *Quarterly Feed*:



Navigating the Pens: A livestock handling demonstration



Ryan Brown
Smithfield Cattle Company

Dr Lachlan Strohfeltdt
BVSc, Protein Production Vets

ALFA recently launched a Pen Riding Fundamentals online course on Feedlot TECH, complimenting the already full suite of livestock handling and feeding & milling fundamentals courses on the online training platform.

The course was developed by ALFA with input and expertise from Ryan Brown of Smithfield Feedlot, Julie Brown of Western Noble Veterinary Services and Lachlan Strohfeltdt of Protein Production Vets.

The development of this course was funded by Meat & Livestock Australia through grain-fed levies and matching federal government R&D contributions in consultation with the Australian Lot Feeders' Association.

The demonstration at SmartBeef and information following provides a snapshot of the course.

The course is currently free to enrol in, visit feedlottech.com.au.

Basic principles of Pen Riding

There are simple and effective ways to carry out your daily inspections, that influence animal health and help your feedlot achieve the best outcomes. By following a basic set of principles, you can feel confident you've met your goal to inspect every animal, every day. Not following them can lead to missed health issues.

Important basic principles you should follow:

- Always have every animal on its feet
- Ride in a zig-zag pattern
- Always look to one side only
- Know the days on feed
- Calmly remove from the pen

Areas to observe before entering the pen:

Cattle behaviour

There are common ways cattle behave when they aren't well. Some of these you can see before you enter the pen.

- Location of cattle in pen.
- Loner animals.
- Signs of depression.



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Fodder Link was founded from humble beginnings in 2016 and has since expanded into a large-scale operation, providing feed to a broad range of enterprises across Australia. We are an incredibly diverse team of passionate, knowledgeable individuals that provide personally catered, ongoing business experiences with our clients.

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Pen conditions

Although the main aim of pen riding is finding cattle with health issues, it's not just the cattle you need to look at. Observing the pen surface and structures is about safety – yours and the cattle.

- Is it overly wet or dry?
- Is there excessive cratering, a heavy manure load?
- Is there any damage to the gate, rail, cables and water or feed troughs?

Safety risks

The biggest risks for pen riders are slips, trips and falls. You need to consider safety issues that could cause harm to the cattle, you or your team before you enter the pen.

What to observe when inspecting cattle in the pen?

Observation and assessment of the cattle is the most important part of pen riding. Your first impression is usually the best assessment. If in doubt pull it out. When new to pen riding, it's common to worry about the obvious visual signs. A very experienced pen rider will have a higher level of observation skills and will be mainly looking for BRD and happen to see other things.

Aspects of observation – an overview

Animal cues

Recognising animal cues is your first sign something isn't right. Cues are specific behaviours cattle show when there's an issue. If you see an animal showing these behaviours, it's a cue to take a closer look.

Physical signs

An animal may or may not show cues, so another way to determine if they have a health issue is to look for physical signs. There are general areas of the body you can look at.

Symptoms of illness

The physical signs you see will be related to a specific condition. You'll need to become very familiar with the symptoms of the following common health issues and disease in cattle:

- Bovine Respiratory Disease (BRD)
- Lameness / footrot
- Digestive issues
- Acidosis

Pen conditions

Inspections also need to include observation of pen conditions. The pen environment provides information about cattle health and wellbeing, and you may need report some issues.

Food

If you prioritise pen riding in the morning, a completely slick bunk and aggressive behaviour will mean the cattle are hungry. If the bunk is full and you'd expect it to be consumed, then the cattle aren't eating.

Water

Water is the most important nutrient for animal wellbeing, and a key requirement for cattle to digest and metabolise food.

Manure

Manure can tell you about pen gut health in general. Faecal conditions that aren't normal include high levels of cratering, a lot of loose faeces and wet pen surfaces from wet manure and hard pebbly faecals. What's on the animal can be a sign as well.

Pen riding patterns

The best approach for pen riding ensures every animal is seen from both sides and moved. A good pen riding pattern, such as riding zig zag, increases time efficiency – especially when there's a lot of pens to inspect, time pressures and many high challenge pens.

Entering the pen

When entering a pen, you should:

- Walk at a normal pace as you enter the pen, then adjust your pace as needed:
- If cattle start running or circling around you, slow down. If cattle aren't moving at least 1-2 steps out of your path (except those with an abnormality), move to a fast walk.

Creating movement

The goal of creating movement is to see how cattle respond. Prey animals will try to hide pain or discomfort if threatened. You want to move through the pen and get the cattle up and walking a few steps. For suspect animals you've observed from outside the pen, getting them to move can show if there's an issue.

Direction of eye gaze

The intention is for the pen rider to be looking in front and to one side only, looking at each animal. This allows for a detailed observation of each animal as an individual, rather than focus being on all cattle at once and missing subtle signs of abnormality in individual animals.

Working together

Removing animals from a pen is commonly done in pairs. Once the pen is finished the second pen rider can help remove these animals. Good communication when removing animals ensures you respond to your teammates' movements and positioning, not just the animal you're isolating.

Monitoring the Bunk: A Bunk Scanning Demonstration

Dr Stuart McCarthy

Managing Director, Manabotix

Phil Lambert

*Feedlot General Manager,
Teys Australia Condamine*

This session features the latest in bunk scanning from Manabotix, with Managing Director Dr Stuart McCarthy joined by Tey's Australia's Condamine Feedlot General Manager, Phil Lambert, who has employed the core technology at his site for nearly three years.

As an outcome of research campaigns, MLA (in consultation with ALFA) and Manabotix have patented and commercialised a Bunk Scanner which is more precise and accurate at determining feed remaining in cattle feed bunks than human callers. The core system leverages high performance spatial inputs – from satellite positioning fused with near-field perception – coupled with special computational calculations to output feed remaining quantities, available at the end of every bunk length.

This world-first achievement is now in operation at several Australian feedlots – in southeast Queensland and more recently one site in Victoria – as well as select facilities in North America. In all these implementations, the use case is considered semi-automation of bunk management, with scanner data used to assist the human decision-making process in-cabin or back at the desktop.

Conference delegates will have a first-hand experience seeing the technology work and gaining an understanding of the data captured by the ute tray-mounted Bunk Scanner and how it can improve feed allocating decisions. The demonstration has interactive elements to further discussions about the core display outputs from the live Bunk Scanner.

The Bunk Scanner's first lot feeder customer, Phil Lambert, will share his experiences with the technologies, including benefits realised from monitoring and adjusting cattle feeding with increased accuracy and repeatability.

Our business wants more, so what's next?

As a next logical step for benefitting lot feeders, in more recent times the Bunk Scanner technology base has been extended to provide full automation of bunk management



Figure 1: Tey's Australia Condamine Feedlot Bunk Scanner in service, installed on tray of site's bunk calling ute.

via custom algorithms. Through a new MLA research project, a software suite was piloted containing algorithms and interfaces enabling cattle feeding systems to be implemented programmatically; the software suite is called Feedmetrix.

The pilot software has been implemented and assessed under experimental protocols at Mort & Co Lot Feeders' Grassdale Feedlot. This activity was managed and reported by an independent third party, Bovine Dynamics, and results published as MLA report B.FLT.1012.

Very briefly, the results of this campaign demonstrated that automation of bunk management is possible, and in fact employment of these technologies can enable cattle performances equivalent to a highly skilled bunk caller year-round. These results also indicate that derivative benefits are also possible, including easing staffing pressures and providing critical data for management and nutritionists through appropriate technology applications. Through this process, some algorithm improvements have been identified, leading to a new experiment at Condamine Feedlot; Phil will share his early views on his site's experiences with these new activities.

Overall, it is a very exciting and progressive time for automated bunk management. How would such technology applications improve your business?

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Reaching for the roof:

Reaching for the roof: partial & covered housing research



Dr Matt van der Saag
Project Manager, Feedlot & sustainability, MLA

Andrew Talbot
General Manager, Elders' Killara Feedlot

Alex Smith
Feedlot & External Cattle Operations, Rangers Valley

Lot feeding of cattle in Australia is characterised by a diverse range of businesses, genetics, market categories, and climatic conditions. In the last decade, Australia has been through catastrophic drought followed by several years of extreme rainfall under the La Niña weather pattern. Despite these climatic challenges, continued demand for grain-fed beef has sustained occupancy in feedlots above 1.2 million head of cattle.

location specific weather conditions, such as areas with winter dominant rainfall, to enhance livestock performance and management, mitigate environmental impacts, and improve animal welfare.

The industry has made a pledge for all cattle to be provided with either shade or shelter by 2026, and with this there has been substantial interest in covered and partially covered housing systems and their application to Australian feedlots. Historically, lot feeding in Australia has been characterised by open feedlot pens, with or without shade. At present around 70% of Australian feedlot capacity is provided shade or shelter. The interest in covered or partial covered housing systems is being driven by the potential for these innovative engineering solutions to better complement

Partial covered housing combines the benefits of both open and covered systems. These systems not only provide protection against extreme weather but also enable cattle to exhibit natural behaviors, aligning with the five domains of animal welfare model. A recent MLA study (B.FLT.4009) at UNE's Tullimba R&D feedlot demonstrated significant productivity benefits of a partial covered system (4m2/hd) compared to shaded or unshaded cattle in carcass weight (7 kg summer, 5 kg winter), average daily gain (+100g/hd/day), and feed efficiency (4-5%). Further, cattle provided shelter or shade had lower panting scores during hot conditions (HLI ≥ 86), indicating improved animal comfort.

In terms of management, there is very little data on the management of beef cattle under fully covered housing systems in Australia. To address this gap, a best practice design and management manual for covered and partially covered housing systems has been developed for the Australian lot feeding industry. The manual is built upon the best available knowledge from around the world for these systems, along with knowledge gained from visits to a variety of covered housing systems operational in Australia. Be sure to grab a copy of the manual at the 'Reaching for the roof' rotation.

The manual details design, construction, regulations, bedding, manure management, welfare standards, animal health considerations, and costs of these systems compared to best practice open feedlot pens. When properly designed, sited and managed, covered and partially covered housing systems have the potential to address challenges posed by the Australian climate, improve animal welfare, enhance environmental sustainability, and boost feedlot efficiency. To further quantify these benefits and to continue to understand management under these systems, a comprehensive research program on management (stocking density, bedding management, animal performance), animal

welfare, manure management and odour production for covered and partially covered systems will commence in 2024 by MLA, and results will be available to industry in due course.

Shedding light on advancements
 Hear from Matt van der Saag (MLA feedlot project manager) to see how industry is stacking up to the target and what progress is currently underway with experiences shared by lot feeders, Alex Smith of Rangers Valley and Andrew Talbot from Killara Feedlot. Andrew will share Elders' experience, learnings and positive performance outcomes from installing partial pen coverage with a two-tiered waterproof tarp-based system. Alex will provide an update on the MLA research project being conducted on site on partial pen coverage with an Entegra shed system.

Compost processing for crop productivity & soil carbon



David Barnes
*Operations Manager,
 Elders' Killara Feedlot*

Peter McKenzie
*Principal Agronomist/Director Agricultural
 Consulting & Extension Services*

In Australia, estimated manure production by the intensive cattle, poultry and pig industries is of the order of 1-1.5, 1-1.2 and 1.2 million t/year, respectively. Cattle feedlot manure contains a high amount of organic matter, as well as macro and micronutrients essential for plant growth, although the release rate of nutrients is dependent upon the nature of the manure, the nutrient concentration and form and climatic conditions. This manure resource has, in the past, been considered a "waste product" that had to be disposed of. This project investigated ways to turn this "waste product" into a valuable nutrient and organic matter source and to produce guidelines to define Best Management Practices (BMP's) for manure reutilisation.

This was achieved through field trials located on the Darling Downs of Queensland and on the Northern Tablelands of New South Wales.

The broad objectives of the project were to establish limits of nutrient loads in plants and soils define the nutrient cycle in manure reutilisation areas and to draw together research data via simple models for the development of Best Management Practices (BMP's) for the industry.

Because of the comparatively narrow range of plant and soil nutrient concentrations experienced at the project sites it was not possible to establish limits of nutrient loads in plants and soils. It is recommended that the comprehensive data contained in Reuter and Robinson (1997), "Plant Analysis-An interpretation Manual" be used to set plant limits. Because of the diversity of soils used in reuse areas it is unrealistic to set limits on soil nutrient concentrations. For example in some soils bicarbonate extractable phosphorus concentrations may exceed 200 ppm in their native state whereas this concentration may result in significant leaching in other soils.

The MEDLI model proved to be the most 'useful' model with respect to the study of modelling effluent irrigation. The results from the "Tullimba" field trial indicate that manure that is surface spread should be incorporated to a shallow depth and then sown with forage crops immediately after. This reduces loss of nutrient by sediment and in water flows. Australian climatic conditions often permit summer and winter crop production. To maximise nutrient recovery and export via crop harvests continuous cropping of forage crops should be employed. Relay cropping ensures maximum benefit by reducing nutrient build up in the soil and losses via volatilisation and water flows. It is important to export the crop material away from the manure and effluent reuse area. The material may be sold off-farm or used for silage in the rations. Manure applications to the reuse area must be postponed if annual soil tests indicate excessive levels of nutrient content in the soil. Continued cropping, supplemented with inorganic fertiliser, will reduce these levels over time.



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The application rate of manure to land areas is site specific. Factors such as method of handling, storage of manure and effluent and the resulting chemical composition, land spreading operation, soil fertility and nutrient buffering capacity, and climatic conditions will determine the rate of nutrient availability to plants.

Manure sub-samples taken at the time of application for chemical analysis allow calculation of nutrient additions. Generally, manure applications require subsequent inorganic N additions to balance the nutritive requirements of crops. Crop tissue analysis allows timely application of inorganic fertiliser assisting in avoiding potential deficiencies or induced toxicities that reduce dry matter yields. Forage crops producing high yields result in a large export of nutrients which can be in excess of nutrient additions. In particular, the export of K from forage crops can be greater than that from grain crops so that K may become deficient in manure amended soil and need supplementing with inorganic K. In addition to plant tissue analysis, monitoring inputs and exports of nutrient along with changes in soil fertility will be fundamental in maintaining plant nutrient requirements.

Real time soil moisture monitoring will improve irrigation efficiency and reduce the risk of nutrient losses in runoff and sub-surface flow. When calculating permissible nutrient loadings, there is a need to take into account initial P status and P buffering capacity of the soil and changes in P sorption on adding manure. The lower the fertility of the soil, the greater the value of manure. In the "Tullimba" soil applying 60 kg/ha or less on a 3-year cycle compared to current industry practice of annual applications of 20 - 25 t/ha has some advantages. It limits the amount of cultivations thus reducing deep and shallow soil compaction resulting from manure spreading operations and minimises disturbance of the soil structure. In addition, the combination of residual nutrient from further decomposition of manure with inorganic fertiliser in order to balance crop nutritive requirements allows depletion of nutrients derived from manure and thus reduction of pollution potential.

When and how can the industry benefit from the research?

The industry and the broader environment can benefit immediately from the research by adopting the following. Many of the recommendations should be included in guidelines for manure reuse.

- a. It is essential to measure the nutrient composition of each batch of manure before application.

- b. Soil analysis of the disposal area must be undertaken prior to application. P sorption capacity needs to be measured to avoid P loading and samples should be analysed down the profile.
- c. The rate of application should consider
 - i. potential plant production,
 - ii. risk of surface nutrient loss (rainfall, slope, infiltration rate)
 - iii. The soils capacity to retain nutrients,
- d. Manure should be applied as close as possible to planting of the crop to minimise risks of loss to environment. Manure should be well composted to reduce the risk of pathogen contamination of soil.
- e. If analysis of the manure indicates a low concentration of a particular nutrient, then a starter application of that nutrient should be made to maximise the utilisation of the other nutrients in manure. If the analysis shows a gross deficiency, then topdress applications may need to be made
- f. Crops should be sown at very high seeding rates to establish ground cover and a nutrient sink as quickly as possible.
- g. The N status of the crop should be monitored by coloured charts, or a SPAD meter and supplemental additions of N made as required to maximise the utilisation of the other nutrients in the manure.
- h. Relay cropping should be practiced to provide a nutrient sink. Cultivation should be avoided between crops to maintain soil surface characteristics favourable for infiltration.
- i. Large infrequent manure applications are preferable than smaller annual additions as the need for regular incorporation, which destroys soil structure, is reduced.
 - ii. Real time monitoring of soil moisture with an Enviroscan should be encouraged to optimise moisture conditions for plant growth and reduce the risk of nutrient loss in surface runoff subsurface flow.
- i. The yield and nutrient content of harvested forage must be monitored to avoid nutrient overload or depletion. This method of measurement is more sensitive than total soil analysis.

The full research paper can be downloaded from the SmartBeef website.

About the presenters



Dr Tony Batterham
Senior Veterinary Consultant, Apiam Animal Health

Tony is a senior veterinary consultant to beef feedlots and feedlot business unit manager, employed by Apiam Animal Health. He is a veterinary graduate from Sydney University and also holds a Diploma of Veterinary Clinical Studies from Sydney University, a Master of Clinical Epidemiology, and a Graduate Certificate of Data Analytics from University of Newcastle. Tony is also a graduate of the Australian Institute of Company Directors and has served two terms as an ALFA councillor.

He has led projects for Meat & Livestock Australia investigating benefits of acclimation and comparing diagnostic modalities for BRD in beef feedlots, and is currently involved in several projects researching autogenous vaccines and wearable technology for remote diagnostics and wellbeing assessment.



Dr Robbie Hayward
Veterinary Consultant, Apiam Animal Health

Dr Robbie Hayward earned his Bachelor and Veterinary Biology and Doctor of Veterinary Medicine from the University of Sydney.

Robbie is originally from Central West NSW and now calls Quirindi home, where he works as a veterinary consultant to beef feedlots at Apiam Animal Health. Robbie joined Apiam Animal Health in 2021 and has been involved in MLA founded and in house research projects.



Ryan Brown
Group Livestock Manager, Smithfield Cattle Company

Ryan first got involved in the lot feeding industry as a commission buyer for Smithfield Cattle Co. When the business had gaps in their operational staff, he stepped in and filled the gap as an entry level pen rider, and from there he worked his way up into his current leadership role.

Ryan's passion for the industry is palpable. Having worked in the cattle industry all his life, he has developed a deep understanding of the industry and its challenges. In his current role at Smithfield, Ryan helps customers navigate these challenges by sharing his views on the market and delivering on each customer's individual specialised needs.

He works closely with the feedlots' livestock teams and managers, as well as working alongside the senior leadership team to provide his unique perspective to the strategic direction of the business.

About the presenters



Dr Lachlan Strohfeldt
Founder and Principal Veterinarian, Protein Production Vets.

Established in 2019 in Toowoomba QLD, Protein Production Vets focus is exactly as it sounds – efficiently improving and maintaining beef production systems to help our clients feed the world. Dr Lachy speaks regularly at industry field days and conferences around the country and is a Lecturer in Production Animal Veterinary Medicine at the University of Queensland.

Dr Lachy has provided feedlot consultancy services throughout Australia for the last 10 years. Protein Vets follow the animal from conception through to feedlot, analysing and benchmarking data with custom developed software at many points in the production cycle.



Dr Stuart McCarthy
Managing Director, Manabotix

Dr Stuart McCarthy is Managing Director of Manabotix and loves providing special technology and robotics solutions to clients who want to get more out of their businesses. Over his career, Stuart has established himself as a trusted professional motivated by delivering impactful outcomes to clients.

He has been involved in many innovative and challenging engineering pursuits, ranging from autonomous agricultural machinery to delivering sophisticated digital analytics and decision assistance tools for resource sectors.



Phil Lambert
Feedlot General Manager, Tëys Australia Condamine

Phil Lambert is an experienced lot feeder with a career panning over three decades. Currently, Phil is the Feedlot General Manager at Tëys Australia Condamine Feedlot, located in Condamine QLD.

Condamine Feedlot has been proactive in adopting technologies such as the Bunk Bot and Scanner and therefore Phil is in a good position to be able to share their real experiences in adopting feedlot technologies, especially those that come out of the MLA Feedlot R&D Progrwam.



Alex Smith
Feedlot & External Cattle Operations, Rangers Valley

Alex Smith is the Feedlot Manager at Rangers Valley Feedlot located at Glen Innes in the New England area of Northern NSW. Prior to Working at Rangers Valley, Alex has worked in various roles in lot feeding starting in 2007 with Mort & Co at Gunnee Feedlot, then Grassdale Feedlot in Dalby.

Rangers Valley specialises in Long Fed Angus and Wagyu cattle, currently feeding 40,000hd with up to 15,000hd in custom yards.



Dr Matt van der Saag
Project Manager in Feedlot and Sustainability, Meat & Livestock Australia

Matt is a Project Manager in Feedlot and Sustainability with Meat & Livestock Australia, with the overarching objective of delivering R&D outcomes that meet the needs of the Australian Lot Feeding Industry.

Matt is an animal scientist with post graduate qualifications in animal health and disease. He has worked in in numerous roles across government, university and commercial sectors prior to joining MLA. Within the feedlot program, Matt's main areas of R&D focus are new methane mitigation technologies, new animal health treatments and products, animal welfare assessment, manure and effluent value adding and shade and covered housing.



Andrew Talbot
General Manager, Elders' Killara

Andrew began his career in 1986 with Elders and specialised in livestock sales, supply chain management, procurement and in 2002 started his involvement in the feedlot sector in backgrounding cattle for feedlot entry.

Today Andrew is the General Manager of Killara Feedlot in Quirindi NSW: a 20,000 head feedlot turning over 65,000 cattle per year. Andrew continues to be heavily involved in the livestock procurement and supply chain aspects of the business.



David (Barnsey) Barnes
Operations Manager, Elders' Killara Feedlot

David Barnes has been Killara Feedlot's Operations Manager for six years. Before his current role, he completed his trade in Refrigeration and Air Conditioning in Sydney, worked with his father in the family Electrical and Air Conditioning Business.

David enjoys the fast pace, handson nature of his position and the fact that no two days are the same. In both the large-scale challenges, such as droughts and floods, and the everyday challenges presented at the feedlot, David enjoys the problem solving which ultimately safeguards the health and performance of Killara's 20,000 head of cattle.



Peter McKenzie
Principal Agronomist/Director Agricultural Consulting & Extension Services

Peter is a seasoned agronomist with a rich background in the agricultural industry. Hailing from a wheat sheep farming operation in the central west of NSW, he developed a deep appreciation for the land and its potential. This passion led him to complete a Bachelor of Rural Science at UNE, Armidale, further honing his expertise.

Currently, Peter is the driving force behind his successful private agronomy consulting business. With a strong team of two dedicated employees, he is based on the vibrant Liverpool Plains of NSW, where he serves a loyal clientele. Peter takes pride in delivering exceptional service to his clients, offering advice rooted in scientifically proven industry best practices and his extensive experience.

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ALFA Young Lot Feeder of the Year Award 2023 Grand Finalists

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The Award is designed to encourage emerging industry leaders to contribute their ideas and vision for lot feeding at a national level. ALFA seeks and fosters qualities that empower participants to think outside the square, to be bold in their ideas and continuously develop and challenge their thinking about the Australian lot feeding industry and its future potential.

The overall winner of the ALFA Young Lot Feeder of the Year Award will receive a \$5,000 study bursary, which can be used towards undertaking a professional development course or an overseas study trip, and a prestigious grain fed beef industry scholarship to partake in the Australian Rural Leadership Foundation's renowned TRAIL: for emerging leaders program, valued at \$11,550.

All entrants were required to submit an essay outlining a perceived or real industry problem, discussing its implications to the feedlot industry, and exploring a proposed solution. The Grand Finalist essays follow. The winner will be announced at the ALFA SmartBeef23 Industry Dinner on October 11.

Finalists:




Jacob Leak - Operations Manager | Teys Australia Jindalee, NSW

Maddison Fryer - Feedlot Data and Operations Officer | Rangers Valley Cattle Station, NSW

Timothy Brennan - Livestock Supervisor | NH Foods Whyalla Beef, Qld

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Feeding for the future



Jacob Leak

*Operations Manager
Teyes Australia Jindalee,
NSW*

In a country where we have droughts to floods, Shortages in the supply of high quality grainfed beef is inevitable. Securing the cattle to supply a high quality consistent grainfed carcass is our goal.

The Australian Lot feeding industry is in a stage of exponential growth and development, with capacities increasing across Australian yards. Increased yard capacities create a drive for greater production in turn intensifying demand on feeder cattle supply and increased competition for that supply. With greater demand, we find ourselves with the issue of reduced supply, therefore creating high cattle prices and inconsistent supply and quality of animals. In order to remain productive and profitable while maintaining the throughput of quality consistent carcass's, we need to look further afield within the cattle industry to find a reliable supply of cattle. In low beef cattle supply situations, I feel this is where the Australian Lot Feeding industry and the Australian Dairy industry need to work together.

To produce milk, you need to produce a calf. This calf is then weaned so that the milk can be harvested by the farmer. The bull calves then become an additional by product for the farmer to which there is no real market for, thus creating supply chain and animal welfare issues. If reared properly to a specific weight these animals can be utilised in a grainfed beef production system therefore solving the problem for both industries.

We have branched out to explore different feeding options for the Holstein overcoming great challenges and with great success. We have developed a Holstein feeding program that aims, on a production basis to achieve consistent head numbers and increased live weight securing the throughput of quality, consistent, carcasses to the abattoir in times of beef cattle shortages. In addition, the program addresses animal welfare and supply chain challenges faced by the Australian Dairy

Industry through the utilisation of the Holstein bull calf in a grain feed beef production system. This program helps secure a consistent throughput of grainfed beef for the future and we feel it's a real winner.

With current volatility within the red meat market, small margins, large demand and continued change in consumer trends we have identified a need to produce a product that meets new market demand while being sustainable and profitable within an expanding industry. The product we aim to produce is a high-quality hormone free carcass with higher red meat yield and good MSA quality grading results to deliver an enjoyable eating experience for the consumer.

How do we achieve this you ask?

Traditionally Holstein steers are pasture feed for significant periods of time to achieve target finish weights and fat deposition, due to pasture not providing required energy levels which limits their growth curve. This creates carcasses with less muscle and fat deposition and greater percentage bone structure.

In order to produce a high-quality product that meets market specifications, we must feed to achieve a more traditional growth pattern by fully meeting the nutritional requirements of a Holstein.

Holsteins have a high maintenance energy requirement in comparison to beef cattle due to greater organ to body weight ratio, which physically creates large frames by rapid bone growth and slower muscle and organ development.

Holsteins have significant nutritional maintenance requirements as young animals and traditionally receive inadequate energy supply from pasture in comparison to physiological nutritional demand. Time therefore limits their genetic growth potential being realised efficiently.

Finished Holstein Product



For our feeding program we are receiving animals at approximately 6months old and averaging 150kg. This allows us to provide sufficient energy and protein to realise their greatest possible genetic growth in the shortest time possible.

Holsteins are extremely efficient in their feed conversion if fed correctly meaning they can gain more or less.

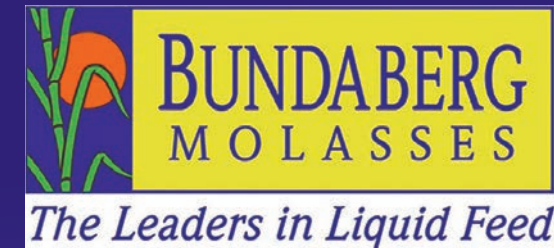
Our Holstein steers had a feed conversion rate of 5.85:1. This means, every 5.85kg of Dry Matter (DM) they are producing a gain of 1kg. An average intake of 8.19kg of DM over the course of their program, indicates an Average Daily Gain (ADG) of 1.4kg. Efficient feed conversion and reduced initial purchase prices allow for the feeding of these animals for the required time to achieve the greatest possible genetic growth and end point.

Current data displays a positive outlook on the program with average carcass yields of 49.85% and

carcass weights of 313kg. Achieving these figures on a production basis enables us to produce an animal averaging 628kg in 348 days with good carcass weights and high yields.

Improved carcass weight, high yields combined with increased MSA grading and AUS Meat marbling scores indicates that the Holstein can perform at a high level within a grainfed beef operation. In an industry that is experiencing exponential growth and development within Australia at present, shortages in the supply of high quality grainfed beef are inevitable.

The utilisation of the Holstein Bull calf within a grainfed operation alleviates production shortfalls with high-quality consistent carcass securing the through put of grainfed beef to abattoirs year-round.



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The importance of shade structures during Winter for animal welfare and overall feedlot production – trial at Rangers Valley Cattle Station



Maddison Fryer

Feedlot Data and Operations Officer, Rangers Valley Cattle Station, NSW

In 2020 the Australian Lot Feeders Association created the Shade Hub to encourage all Australian feedlots to provide access to shade for cattle under their care. There is also increasing focus of consumers on livestock welfare and care within feedlots, with shade being considered a basic requirement for cattle wellbeing. I believe providing cattle located in all climates with access to shade is a current and future problem for the feedlot industry. Outlined below is a summary of the benefits of shade on livestock performance by directly reducing heat load on cattle. Rangers Valley Feedlot is located in a cool, wet climate and therefore heat load is not a major issue of concern. However as seen in the winter of 2021, which received abnormally high rainfall, cattle performance is also affected by wet conditions. A trial is currently being conducted in the newly constructed shed structure (covered housing system) at Rangers Valley to determine the effects on cattle performance and welfare over winter and summer and calculate overall cost benefits.

Studies have shown that cattle can be negatively affected by hot conditions, having reduced feed intake, performance, and wellbeing. Providing shade allows cattle to regulate their thermal temperature, ultimately reducing panting scores, respiration rates and stress hormones. It further allows feedlot operators to satisfy the five domains of animal welfare, particularly the ability for cattle to display natural behaviours and be free from thermal and physical discomfort. Not only does providing shade improve cattle comfort, but it also demonstrates the feedlot industry's commitment to sustainability by improving resilience to climate variability and continuously improving animal welfare.

A study run in Queensland found that cattle with access to shade at 3.3m²/head increased hot carcass weight by 6kg, driven by higher rates of feed intake. Majority of

historical studies have focused on the benefits of shade in relation to heat load, however this essay is going to investigate the potential benefits during winter in colder and wetter environments.

The winter of 2021 was an abnormally wet season, with the total rainfall at Rangers Valley for the year being 1206mm, approximately 400mm greater than the historical average. As a result, there were significant negative effects on livestock comfort and performance. The long-fed (270 days on feed) Angus cattle at the end of their program (liveweights of 800+kg) appeared to be affected the worst, with a significant increase in morbidity and mortality rates. Of particular note was the increase in foot issues, due to consistently wet pen floors, and casts, due to cattle being exhausted and low on energy (reduced feed intake). Rangers Valley have historically (and still currently) run a woodchip bedding program in pens for all long-fed cattle over 180 days on feed (i.e. for the last 100 days on feed), however the negative effects mentioned above were still occurring even with additional bedding being added to pens.

Traditionally, shade structures have been made of a cloth material, their only purpose being to block out direct sunlight. This is suitable for the majority of feedlots in Australia as 60% are located in Queensland, a typically hot environment. However, concerns have been raised for feedlots located in the cooler, wetter climates that typically have more issues with wet weather effects than heat. A cloth structure does not prevent rainfall on the pen surface but would prevent direct sunlight and therefore evaporation potential to dry the pens, ultimately leaving pens wet for longer periods and negatively affecting cattle performance and welfare.

In recent years the use of covered housing systems has emerged as a potential solution for protection against summer heat and wet winter weather. A trial run at UNE's Tullimba Feedlot (located in a similar climate to Rangers Valley) found that there are benefits to cattle performance in both summer and winter when housed in pens with partial coverage by a waterproof shelter (covered housing system). The study found that ADG significantly improved by 100g/day and feed efficiency by 5.3%, ultimately improving HSCW by 5kg.

In May 2023 a 440m shed structure (covered housing system) at Rangers Valley Feedlot was completed. The structure covers half the width of the pen and the full length, attributing to 7.5m² area of shelter per animal. The density of these covered pens has not increased and remains the same as an un-covered pen, therefore cattle are still provided the same freedom of movement within the pen.

The decision to cover only half the pens was to allow cattle the choice of shade or un-shaded areas, further satisfying the five domains of animal welfare.

A trial is currently being conducted at Rangers Valley under the new shed structure to evaluate the benefits of partial pen coverage with shelter in a commercial feedlot. There are three treatment groups: un-shaded pen with conventional woodchip bedding at a depth of 150mm (control), partial shaded pen with woodchip bedding at a depth of 150mm, and partial shaded pen with gravel and interface layer of manure.

The objectives of this trial are to examine the effects of the three treatment groups on pen surface moisture and manure build up, temperature and humidity in the pens, performance and animal health while in the feedlot, carcass characteristics, and perform a cost benefit analysis.

It is hoped that there will be a significant cost benefit due to a large reduction in the number of cattle that require washing, and with the potential to capture up to 12MT of rainfall water annually. Both outcomes would further improve Rangers Valley's sustainability outlook due to a reduction in water usage and the ability to capture stock water on site. In my position as Feedlot Data and Operations Officer at Rangers Valley I have been heavily involved in the planning and running of the trial and hope to see a positive effect in all objectives, ultimately improving overall animal production and welfare.

I believe the implementation of covered housing systems, supported by positive data from the trial currently running at Rangers Valley, is a solution to the issue of providing shade to cattle within feedlots located in cooler, wetter climates.



Improving industry retention through ground level Leadership Development



Timothy Brennan

*Livestock Supervisor,
NH Foods Whyalla Beef,
QLD*

Staff retention has become a significant issue plaguing the Lot Feeding Industry. It has put pressure on businesses, cattle welfare, and team morale.

The future of the grainfed beef will be tested if measures are not made to rectify this significant issue. The need for ground level leadership development as a measure to mitigate high turnover is highly evident.

Labour shortages remain a problem to be conquered by lot feeders nationwide. These shortages affect welfare of animals, the morale of staff and ultimately the profit made by businesses. It is felt by entire organisations. It would be easy to say that the source of the industry's labour woes is poor recruitment. However, it appears a key driver of the shortages is the ability to retain staff long term. Maintaining labour is a balancing act on a pendulum of attraction and retention.

Attraction and retention both hold their place, nevertheless without each other, desired employment levels cannot be met. In a highly competitive labour market, lot feeders are campaigning, advertising, even poaching against each other in a bid to maintain staff levels. However, they are struggling to retain people already in their employment. It is evident that a great amount of time and effort is being invested into recruitment, however, is lacking in regard to retention. Most feedlots would be pleased to say they can hold staff for 2 years, yet this is rarely the case. Whatever the reason, poor retention reflects poorly on leadership. In a survey conducted with Whyalla beef staff, it was found that leadership was a key driver for retention. At the end of the day, many people don't leave their jobs, they leave management.

Poor retention is costly on both the business and entire industry level. Subsequently, missed opportunities, decreased production, increased risk of incidents, decreased knowledge and decreased animal welfare are all outcomes. Labour in the sector is already at critically low levels.

With the mounting pressure of a growing industry, failure to meet labour needs hinders individual and broad sector growth. A growing industry needs a growing labour force. Poor retention leads to missed opportunities. Businesses will risk becoming preoccupied in the day to day operations and in doing so will forego opportunities to investigate, research and develop projects.

The growing number of cattle on feed coupled with a struggle to fill vacant positions increases the cattle to staff ratio. This has the potential to result in a reduced animal welfare outcome which in turn will diminish business performance. Finally, the continual loss of experience from the industry compels businesses to spend more time training and responding to an increase in incidents both from a safety and Quality Assurance standpoint.

Majority of workers in the lot feeding industry are situated at ground level. This level is also where the majority of staff turnover occurs. Senior and middle management place a large amount of trust and responsibility in ground level management to lead, motivate and drive their teams.

However, this architecture is often flawed. In many instances, ground level management haven't received the appropriate support in; training, expectation setting or even exposure to leadership roles. Therefore, it is unjust to expect them to lead and engage staff effectively. As most workers fall under the responsibility of ground level management, it makes sense that these managers need to be the best people managers in the business. This is a major problem resulting in poor staff retention. A Wagyu with a poor start in life can't be expected to be a high marbling performer, this is the same with ground level leaders.

There needs to be more work done to support staff in the early stages of their leadership development. Our industry already has many great leadership programs that it endorses, for example the Margin and People Management Course and the Australian Rural Leadership Foundation Trial and ARLP programs. These programs are incredible, however due to their investment requirements, they are targeted at middle to senior management. Therefore, I challenge us to think of how



we can collectively support our ground level managers. How can we as an industry support the people that directly lead the majority of our workforce? My solution to this is to introduce industry driven Leadership Development Programs for ground level managers and leading hands.

The Emerging Leaders Leadership Program is proposed to be offered to all members of the lot feeding community. It will be a short, cost effective but powerful workshop retreat that achieves three key outcomes:

1. *Establish self and social awareness of its participants;*
2. *Give participants exposure to leading a diverse range of personalities; and*
3. *Develop early leadership networks.*

The leadership program will strive to achieve self and social awareness by exposing participants to activities that promotes specific behaviour and reflection. Understanding self-identify is essential in maintaining authenticity and behaviour. Furthermore, being able to read the behaviours of others will help in developing a leadership style that meets the needs of the team. Leadership cannot be simply learned from a textbook, rather it should be based off experiences and reflection.

Therefore, exposing participants to a diverse array of personalities will enable experiential learning.

Additionally, after completing these activities, participants will form valuable networks with others on the program. It is hoped that this will help to establish strong connections outside of the program and lead to future support and growth. Self-awareness, social awareness, and networks are three fundamentals to strong leadership foundations. The emerging leaders' program will strive to equip leaders with the foundations to set up their leadership journey.

Overall, the lot feeding industry is facing significant issues with staff retention and labour shortages. The growth of the industry and building number of cattle on feed will further worsen production and animal welfare outcomes if measures are not made to improve retention. I strongly believe that ground level leadership programs are the missing piece in the industry's leadership development framework. Ground level leadership programs could be a key mitigation strategy for the high industry staff turnover rates, and therefore requires our attention.



ALFA Community Heroes Award 2023 Entries

Sponsored by Lallemand Animal Health



Australian feedlots are vital to the fabric of rural and regional Australia by creating jobs, supporting families, and contributing to local economies and the environment.

This award recognises and rewards those feedlots that are actively nourishing their local communities and environment by going above and beyond to support their community, that 'give-back' and better the environment around them.

Learn more about this year's entries here:

'Dimes for Dolly' Charity Auction - ARONU FEEDLOT | QLD

CQ Carcase Classic Field Day - BARMOUNT FEEDLOT | QLD

Annual Feedlot Cricket Day - ARONU FEEDLOT | QLD

Stockyard's Education Program - STOCKYARD BEEF | QLD

"Dimes for Dolly" Charity Auction

ARONU FEEDLOT, QLD

Established in 1964, and purchased by AACo in 2002, Aronui Feedlot is proudly recognised as Australia's oldest commercial feedlot.

With such a rich history within the lot feeding industry, it comes as no surprise the team behind Aronui play a vital part in the local community and beyond, hosting multiple annual fundraising events for a variety of charities.

The team recently held an auction for Dolly's Dream, a charity which sits within the Alannah and Madeline Foundation. Dolly's Dream works to change the culture of bullying, anxiety and depression through direct support and education for young people and families.

Aronui administration, HR and training officer Matilda Stitt said the team initially had plans to host a simple staff lunch to support Dolly's parents (Kate and Tick Everett) but, after further discussion, a much larger plan evolved.

"AACo wanted to focus efforts on key charities that connected to our people and operations," Matilda said, adding Dolly's parents, who had previously worked with the company, are part of the wider AACo family.



'Dimes for Dolly' was held in May at the Bellview Hotel, Queensland, had more than 300 people in attendance, and raised more than \$19,600 from the generosity of donated auction items which ranged from artwork and hampers, to a night away at the Stamford Plaza in Brisbane.

With all proceeds from the night going directly to Dolly's Dream, the evening celebrated the efforts of local butchers and farmers, small businesses, and feedlot industry leaders.

Matilda said the reception to the charity event had been overwhelming. "We are so humbled to have been able

to raise awareness for mental health in this capacity," she said. "Employees at Aronui, and in the greater AACo community, have access to such an excellent support network and we believe that everyone deserves that opportunity.



"It was amazing to see the feedlot and community come together for such an extraordinary cause," she said, adding the evening would not have been possible without the tireless efforts of the "incredible team" behind the scenes.

"Our maintenance and livestock teams went above and beyond to fabricate fire pits and spit attachments, cut firewood, set up, help cook and serve and sell raffle tickets."

"It also would not have been possible without the overwhelming response from the local community to be involved," Matilda said. "From small, locally owned businesses to large suppliers of our industry, everyone had a part in donating, whether it was their time or prizes."

Running a local event to support mental health in agriculture and addressing the effects of bullying within our industry and community is a direct reflection of Aronui's values. The positive impact Dimes for Dolly had on their community is evident through the small family-owned businesses and large industry leaders alike coming together to raise awareness for mental health services provided by Dolly's Dream.

The exposure and promotion they were able to provide for their cause, their local businesses and lot feeding is tremendous to see. Dolly's Dream general manager Stephen Bendle said the whole team, including Kate and Tick, were excited to hear about the results of the auction.

"I remember talking to the managers out there about the event, especially Tilly who was so enthusiastic. "The generosity of those at Aronui will mean that our Dolly's Dream Support Line will continue 24/7, more school workshops will be available to help kids and we can help families deal with the impact of bullying."

CQ Carcase Classic Field Day

BARMOUNT FEEDLOT, QLD

Located halfway between Rockhampton and Mackay, Barmount Feedlot has a long history in the beef industry and is renowned for supporting a number of community initiatives.

Most recently, Barmount Feedlot owners Phil and Lynise Conaghan proudly opened the gates to host an on-farm field day during the CQ Carcase Classic Competition, while participating in the Feed on Class (pen of grain fed steers).

The on-farm field day gave more than 100 people, including industry experts and the wider community, an opportunity to take a closer look at how the feedlot is run and to ask questions and gain insight into the beef industry.

“Attendees gained a greater appreciation and understanding of the science behind feedlot nutrition, accuracy of feed delivery, depth of staff training and efficiency of feedlot production,” Lynise said. The CQ Carcase Classic Competition is a popular and highly regarded annual event that allows beef producers of Central Queensland the opportunity to showcase their beef as well as benchmark their own achievements against the best cattle producers in the region.



Local community organisations also benefit from the competition with commission monies from competitors distributed to nominated community groups. Barmount Feedlot entered two pens of cattle in the competition with Capricornia School of Distance Education (CSDE) named as beneficiary, recently receiving more than \$3000.



Lynise said, due to the geographical location of the community, there is no secondary school close by. “At the completion of primary school, children attend either boarding school or are enrolled via a school of distance education.

“Selecting CSDE as Barmount’s nominated beneficiary was a conscious decision made to prioritise educational opportunities for geographically isolated children. “The CQCC Committee determines the list of beneficiaries and, in previous years, Barmount has contributed to either our local school, CSDE or our local ICPA branch.”

Lynise said, in addition to supporting the carcase competition, Barmount saw the day as an opportunity to promote the industry to an audience of predominantly grass-fed beef producers. “We wanted attendees to gain insight into the ‘what, why and how’ and to gain appreciation for what is a highly regulated and precision-driven industry.” Lynise said the day also provided an opportunity for the Clarke Creek State School P&C Association to cater the event with the team raising about \$2000.

“To offset costs incurred by the P&C, Barmount Feedlot donated Barmount grain fed smoked briskets which were slow cooked on-site for 13 hours the night before.” Providing support throughout the day, Lynise said Barmount staff were instrumental in running the event. “During the day, participants had the opportunity to view the cattle entered in the competition and compare the progress of the nominated pens.

“Guests were invited to interact with our team and engage in conversations about feedlot operations.” Lynise said there was a significant amount of planning involved to ensure the day ran smoothly.

“We worked closely with the organising committee to coordinate the event, which involved determining key timelines and milestones, logistics, resources and management of competition cattle,” she said, adding a staff roster was also created to ensure adequate coverage throughout the field day.

“Roles and responsibilities were assigned to staff members such as checking in and assisting attendees, overseeing activities, setting up and packing up of tents and chairs, organising space for sponsors and ensuring that safety and biosecurity protocols were maintained.” Lynise said there were also a great line-up of guest speakers on the day including Damien Nankervis, NSA Feedlot Nutritionist, Katelyn Lubke, MLA, Adam Coffey, Cattle Australia, Darren Hamblin, Strathdale Wagyu, and Warren Hogan, Judo Bank.

“For us, the highlight of the event was the positive feedback provided by attendees,” Lynise said, adding



participants were “pleasantly surprised” by the level of precision maintained in feedlot operations.

With a rich history in the beef industry, Barmount Feedlot is committed to continue producing the best quality product for consumers. “We love the challenge of feedlotting and working alongside our dedicated family and staff who share and embody our core values.”



Annual Feedlot Cricket Day

ARONUI FEEDLOT, QLD

Established in 1964, and purchased by AACo in 2002, Aronui Feedlot is proudly recognised as Australia's oldest commercial feedlot.

It comes as no surprise the team behind Aronui play a vital part in the local community and beyond, hosting multiple annual fundraising events for a variety of charities.

With a vision of facilitating an event to support and engage the local community, the team created an annual event for all to enjoy - recently hosting their third Feedlot Cricket Day to great success.



Aronui administration, HR and training officer Matilda Stitt said the team were excited to create a platform for feedlots to come together and participate in a day of laughter, socialising and community, all while raising funds for the Bowenville State School P+C.

"Once the limitations of the pandemic were alleviated, providing an event to celebrate the lot feeding industry, our staff, and our local community became that much more important to us," Matilda said.

"By hosting a local event, we recognise how valuable it is to create opportunities for our kids and to provide not only ours, but other feedlots, a safe environment for staff and their families to network within our industry.

"This has had an excellent impact on morale and culture on site."

Matilda said the team at Aronui are "extremely passionate" about this initiative and hope to see it continue to expand.

Established in 2020 by two friends from opposing feedlots, the event has grown from two teams to six with hopes of more in the future. Matilda said the friends developed the idea after talking about organising a social get together to celebrate the industry.

"The locality of Bowenville is near to us in the darling downs, as well as at the heart of many feedlots.

"It is a small school without a lot of exposure who deserves fundraising opportunities like the surrounding bigger schools, so we jumped at the opportunity to involve them as we had decided we wanted to provide a BBQ for everyone this year, enlisting the school for help."

Matilda said hosting social events in rural and remote communities gives everyone a chance to relax and socialise and develop a sense of camaraderie. "The chance to offer this again for even more feedlots would be amazing," she said, adding the Community Hero prize money would be put back into growing the event.

"Providing the opportunity for families and other companies who share the same passions as us to be enriched with social interactions and relationships outside of work is so important here at Aronui."



Stockyard's Education Program

STOCKYARD BEEF, QLD

A commitment to the development of local schools and the careers of young Australians in regional Queensland has propelled the growth of the Stockyard Beef Education Program. The program's mission is to enrich the community's educational landscape and help to secure a vibrant future for the feedlot industry.

The program covers primary and secondary years and has three streams of support:

- Funding of resources and facilities for local schools
- Financial and in-kind support of agricultural studies in the curriculum
- School based placements and work experience at Stockyard's Kerwee Feedlot

Part of a vertically integrated supply chain, Stockyard's Kerwee Feedlot breeds, raises and grain feeds cattle across two properties – Kerwee Feedlot in Jondaryan, Queensland, and Kingsgate Station in the Northern Tablelands of New South Wales.

Established by Del and Robin Hart A.M, Kerwee Feedlot is renowned as one of the most modern feedlots in Australia and the nation's longest-held cattle feedlot under single ownership – still 100 per cent owned and operated by the Hart Family.

With this in mind, the team behind the brand are proud to give back to the local community, and one of the ways they are doing just that is through their Education Program.

Stockyard's Beef Sustainability Officer, Molly Sage said the program was initially borne out of a desire to support local school fundraising efforts but had grown to include supporting agricultural studies and providing pathways to meaningful careers in agriculture.

"For primary schools, our support is focused on providing the necessary resources for the schools to maintain a high-quality learning environment for local children, many of whom have parents who work for Stockyard.

"With a growing gap between urban and regional education, this work has greatly improved the supply of invaluable resources including reading materials, sporting equipment, and computers for the students at Bowenville State School and improved school facilities including new gates for Jondaryan State School." Ms Sage said.

For secondary schools, Stockyard supports agriculture lessons with donated cattle and regular visits from Stockyard livestock team members to help facilitate practical, firsthand and real-world learning. This is complimented by on-farm tours for high school students, facilitated in conjunction with AgForce Education and Schools Program.





“Our work has inspired young individuals to pursue agricultural careers, with tangible outcomes seen through five paid school-based placements at Kerwee Feedlot in the past 12 months.

“Providing pathways to meaningful careers not only keeps kids engaged, but they are also far more likely to stay in the region. This is a win for our local communities as we keep bright kids in the region, but it is also a win for our industry as we are providing a steppingstone for careers and inspiring the next generation of agricultural leaders. This makes for a thriving, sustainable community and industry,” she said.

“We are also working to build the connection between the origins of food for local children and build their understanding of the important role feedlots play in the global food supply.”

Taking place throughout the year, the rolling program has grown organically over time, deepening Stockyard’s support with the local school community.

Ms Sage said, what initially began as a one-off donation several years ago has now ‘snowballed’ into an all-encompassing program.

“As a business active in the local community, we also keep our eyes open for schools and community groups that may need assistance,” Ms Sage said.

Ms Sage encouraged other feedlots to follow in the footsteps of Stockyard Beef to provide pathways to better education in the regions and employment for young people within the sector.



Read more feel-good feedlot initiatives at feedlots.com.au/communityheroes



ALFA Innovation Competition 2023 Entries

Sponsored by IAP



Clever ideas and innovations that have been incorporated into day-to-day feedlot operations have been entered into the ALFA Innovation Competition 2023. The winner and runner-up will be determined by popular vote and announced at SmartBeef23 on 12th of October.

Entries:

- Bombine Feedlot’s ‘Gunk’ Innovation
- Launcells Feedlot’s ‘Drip Free Sock’ Innovation
- Pakaderinga Feedlot’s Cattle cable crimper
- TFI Southern Cross Feedlot’s ‘TB straw Spreader’ Innovation
- Jindalee Feedlot’s ‘Bunk Hungry Boards’ Innovation
- Connors Junction Feedlot’s ‘T-Grab’ Innovation
- Koojan Downs’ ‘Dry Gums’ Innovation
- Smithfield Feedlot’s ‘MaxiMukMoover’ Innovation
- Five Star Beef Feedlot’s ‘Safer Post Mortem tool’ Innovation

Jindalee Feedlot’s ‘Bunk Hungry Boards’ Innovation



What’s the issue/challenge?

Jindalee had a trial of Friesian X calves with an average induction weight of only 150kg enter into their feedlot program.

They had to place a cable along the bunk to stop the calves from slipping under the bunk rail and over the bunk into the feedlot. In doing this, they came to realise the cattle could no longer reach the feed on the far side of the bunk.

How does the innovation/idea work?

Our Hungry Boards hook onto the bunk and decrease the width of the bunk. This pushes the feed closer to the pen side of the bunk and allows the calves to access all the feed.

As the boards hang from the bunk, they can angle of the boards to be adjusted allowing more or less space in the bunk as the cattle grow. The hooks are secured over the bunk, and the boards are heavy enough to not move in the bunk. However, they are also light enough that two people can remove them quickly to maintain bunk hygiene.

Cost of innovation: \$1250

Koojan Downs’ ‘Dry Gums’ Innovation



What’s the issue/challenge?

Dry Gums was designed to keep gum boots dry on the back of the ute when raining, as sometimes it’s best not to bring them in the cab when they are too muddy or smelly!

How does the innovation/idea work?

Dry Gums helps to dry your boots with its upright position and aerated design, whilst maintaining functionality with a lightweight, but strong frame that adjusts to fit most ute tray headboards. When your Dry Gums is no longer needed, simply remove it and store away for the summer!

Cost of innovation: \$60

Connors Junction Feedlot's 'T-Grab' Innovation



What's the issue/challenge?

Shifting tyres to silage pits by hand is labour intensive, dirty and time consuming work. With a limited work force and time a precious commodity, we needed a better method of getting tyres onto the pit for distribution.

How does the innovation/idea work?

Fitted to an excavator, the T-Grab collects, holds and transfers tyres from the tyre stockpile across to the pit simply and efficiently. Tyres only need to be handled during placement. Watch the T-Grab in action below!

Cost of innovation: \$60

Five Star Beef Feedlot's 'Safer Post Mortem tool' Innovation



What's the issue/challenge?

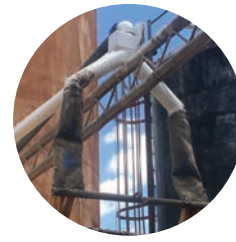
Current practice to extract brain samples from cattle to help diagnose health issues is for an instrument like an axe to be used. We have found this tool to be difficult to use in this task and can pose a significant personal safety risk to the user.

How does the innovation/idea work?

Our innovative idea involves using a hole saw on a battery-powered drill. We have found this to be a much safer option when conducting a postmortem, as it greatly removes the risk of personal injury. We have had great success in sharing the innovation with others, including Dr. Kev Sullivan who in fact now uses an adaptation of our method himself, along with other feedlots he works with implementing the safer practice on site

Cost of innovation: \$400

Launcells Feedlot's 'Drip Free Sock' Innovation



What's the issue/challenge?

Launcells use a molasses based liquid supplement. This is transferred from a storage tank by pump and delivered into the mixer using a pipe. After loading the supplement, the liquid continues to drip from the end of the pipe. Dripping increases shrink (loss), splashes on windscreens attracting dirt and dust and the low pH of the supplement erodes the paint from machinery.

How does the innovation/idea work?

The Drip Free Sock is lie flat hose fixed to the pipe outlets. After loading, the lie flat is folded over using a bar and simple pulley system, preventing drips. The lie flat hose is dropped down for loading by releasing the pulley.

Cost of innovation: \$57

Pakaderinga Feedlot's Cattle Cable Crimper Innovation



What's the issue/challenge?

Fixing heavy cattle cable to eyelets can be a time consuming, difficult job, and can often pose a personal safety risk. Pakaderinga Feedlot's Cattle Cable Crimper innovation has helped their maintenance team bypass these issues.

How does the innovation/idea work?

The Cattle Cable Crimper makes attaching cattle cable to eyelets safer, faster and easier. It achieves this by mechanically putting a tight 180 degree bend in the cable, which facilitates easy fitment of cable clamps. Watch the above video to see the Cattle Cable Crimper in action.

Cost of innovation: \$100 - \$150

Smithfield Feedlot's 'MaxiMukMoover' Innovation



What's the issue/challenge?

Maintaining cleanliness along the fence lines in our pens to prevent fly breeding requires significant resources, including employee time, diesel fuel, and the use of a machine. The costs associated with these resources have been steadily increasing. Additionally, weather events can disrupt our schedule, resulting in a sudden rush to clean multiple pens within the limited time frame of the fly's life cycle.

Given these challenges, it becomes evident that increasing the amount of manure collected per drag can lead to substantial cost savings. By doing so, we can dramatically decrease the time taken to complete pen cleaning tasks, thereby reducing labour, diesel consumption, and the need for machine availability. Moreover, this improvement will have a positive impact on animal welfare, which is of utmost importance to us.

How does the innovation/idea work?

The "MaxiMukMoover" attachment transforms our standard spreader bar, enabling it to collect up to double the amount of manure per drag and ensuring it is efficiently relocated far away from the fence line. This is achieved through a simple yet effective design. The low profile of the "MaxiMukMoover" allows for easy manoeuvring under the bottom cable, and even when fully engaged, the flexible rubber flap of the conveyor belt effortlessly bends to accommodate passing under low cables.

It's value really comes into play when there is large amounts of manure to be moved. This feature ensures smooth and uninterrupted operation throughout the dragging process, maximizing efficiency and productivity. Furthermore, when the "MaxiMukMoover" is not required for other tasks, it can be easily removed.

Cost of innovation: \$80 + 4 hour labour

Bombine Feedlot's 'Gunk' Innovation



What's the issue/challenge?

Bombine has invested in a shed for feeding cattle. They want to ensure each pen has sufficient bunk space available at higher pen stocking densities, but still provide flexibility and ease of cattle movement. How does the innovation/idea work?

The Gunk provides a section of bunk that can be swung open to close the central feed lane. This enables an alternative direct access of cattle to the cattle yards, located at the end of the shed.

Unlike a traditional gate, the Gunk also maximises bunk space available to cattle when closed, ensuring feed intake is not compromised by inhibiting feeding space, even when pens are stocked at higher densities.

Cost of innovation: \$1650

TFI Southern Cross Feedlot's 'TB Straw Spreader' Innovation



What's the issue/challenge?

Bedding is becoming common practice to increase cattle comfort and wellbeing in both conventional and sheltered feedlots.

At TFI's Southern Cross Feedlot, they use a variety of bedding including straw, woodchip and almond shell throughout the winter months. The task of spreading the bedding evenly can be inefficient and require excess manual handling. In addition to this, bedding that is not distributed evenly can cause cast cattle. Once TFI are at their 30,000 head capacity, throughout their bedding program they will be spreading in excess of 10,000 bales a year, dependant on weather.

How does the innovation/idea work?

The TB Straw Spreader, manufactured by Maintenance Manager Tim Bagshaw, reduces the need for manual labour and is more efficient than traditional practices. The TB Straw Spreader breaks up and evenly distributes bedding quickly and safely.

Cost of innovation: \$3500



55215