SPECIFIC FOR YOUR SUCCESS

IN THE MIX #65

SUMMER 2024

Boosting feedlot lamb growth & profitability

LALLEMAND

Pictured: The Lallemand Team at BeefEx with guest speaker Richard Champion de Crespigny, the heroic Qantas A380 captain who saved over 460 lives

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As the holiday season approaches, we want to extend our heartfelt thanks for your continued support throughout the year. Your trust and loyalty mean the world to us.

Please note that our office will be closed from December 24th to December 27th to allow our team to enjoy a few days with their loved ones.

We appreciate your understanding and wish you a joyous holiday season and a prosperous New Year!

Welcome

Festive Season Greetings to All!

As we approach the end of 2024, I want to extend my heartfelt thanks to you our valued customers. This year has been bustling for Lallemand, and I'm sure it has been for you as well. The wider than normal rainfall has delivered strong crops across Australia in 2024, and the robust agricultural markets have positioned Australian agriculture in a very favorable state.

While we continue to navigate challenges such as climate pressures, geopolitical tensions, trade disagreements and supply chain disruptions, there remains a unifying factor: our collective mission to produce food for the world. Your contributions to the agricultural sector are invaluable, and this Christmas, let's celebrate the successes we've achieved and look forward to the future triumphs.

We are part of a noble and humble industry, and I am grateful every day for the incredible people I work with across Australia and beyond. Here's to a prosperous 2025, and we look forward to continuing our journey together!

Festive regards,

Alex Turney - Country Manager

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New 'Biofilm1Health' initiative to enhance positive biofilms for health and environmental solutions.

Lallemand Animal Nutrition and the Micalis Institute have launched Biofilm1Health, a joint laboratory aimed at advancing the One Health approach, which addresses animal, human, and environmental welfare holistically.

Biofilm1Health integrates high-throughput biofilm phenotyping and AI to enhance beneficial microbial biofilms, aiming to reduce chemical inputs and improve animal welfare. This collaboration is crucial for combating harmful microorganisms and promoting a healthier ecosystem.

"Biofilm1Health represents a significant step forward in our understanding and application of beneficial microorganisms," said Mathieu Castex, general manager of Lallemand Animal Nutrition.

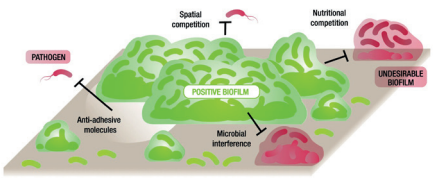
"By combining our expertise with Micalis Institute's cutting-edge research, we aim to create more effective and sustainable solutions for animal nutrition and environmental management."

The joint laboratory will focus on:

- Selecting beneficial microbial strains,
- Studying interactions within multi-species biofilms,
- Optimising product formulation for field applications,
- Developing methods to study environmental biofilms in-situ.

"This partnership bridges the gap between fundamental research and practical applications," said Romain Briandet, research director at INRAE.

"We're excited to explore real-world solutions that benefit both animals and the environment."



Micheal Savli joins Team Lallemand

Lallemand Animal Nutrition has announced the appointment of Micheal Savli as its new Technical Services Manager for Southern NSW and Northern Victoria.

Graduating from the University of New England with a Bachelor of Rural Science in 2019, Micheal has spent the past four years working with a Riverina-based feed supplement manufacturer, AusFarm Nutrition.

During this time, he provided sales and technical support to the company's customers, staff and channel partners before being appointed technical manager and nutritionist in 2023.

Micheal has completed a number of nutrition courses in recent years, including the NSW Department of Primary Industries ProGraze and the Dairy Australia Advanced Nutrition in Action programs.

In 2023, he was admitted as a member of the Australian Association of Ruminant Nutrition, passing his written and oral exams with high distinctions.

Lallemand Animal Nutrition Managing Director, Alex Turney, welcomed Micheal to the company.

"Micheal is a passionate and highly-motivated individual who has developed an in-depth knowledge about beef, dairy and sheep nutrition in a very short time," he says.

"He brings a fresh perspective to our business, particularly his understanding of livestock production systems in southern Australia, and is keen to make his mark in the silage and feed ingredients sectors."

Lallemand Animal Nutrition now employs nine regionally-based Technical Service Managers throughout Queensland, NSW and Victoria.

Each has in-depth experience in forage production, ruminant nutrition, animal health and livestock production.

Silage turbo-charges weaning program

The introduction of a silage-based weaner feeding program over the past five years is helping Queensland beef producers, Sandy and Jamie McCartney, to ensure their brahman cattle attain feedlot entry weights at less than 24 months of age.

The introduction of a silage-based weaner feeding program over the past five years means their high-grade Bos indicus cattle routinely achieve feedlot entry weights at less than 24 months of age. Upon feedlot entry, the bunk-trained cattle are recording significantly higher feed intake, growth rates and carcase quality than previously achieved.

Sandy and Jamie run about 3,000 high-grade Brahman cattle across 10,000 hectares of owned and leased land based around 'Bucca Station', 25 km north of Bundaberg. Their enterprise turns off about 1,000 steers, surplus heifers and cull cows for the EU and MSA-graded domestic markets each year.

In 2019, the McCartneys began to explore silage-based feeding systems in response to the crippling drought then gripping much of northern Australia. "At the time, we were doing the usual stuff – MU8, pellets and hay – but we weren't getting the results and it was expensive," Sandy says.

"We got in touch with Lallemand Animal Nutrition Technical Services Manager, Jordan Minniecon, who put us in touch with (Tansey-based) silage contractors, Allan and Renita Anderson, who in turn, put us in touch with (Brisbane-based) ruminant nutritionist, Iain Hannah.

"The Andersons helped us every step of the way from planting through to harvesting and storage; Jordan helped us with the design of the pits and yards, and sealing systems; while Iain set up our rations and feeding program."

The McCartneys utilise about 2,500 tonnes of home and contract grown corn, grain sorghum and cereal silage in their weaning and feeding program each year. Silage used in the weaning program is stored in two above-ground 'bun' stacks, while a further 1000 tonnes are stored in two pits for long-term drought mitigation.

"With silage, we can wean and finish our steers and heifers whenever we want," Sandy says. "It's like having another property except you don't have to worry about fences, rates or the bank manager."

The McCartneys' weaning program aim to reduce the stress and nutritional set-backs associated with early weaning and to facilitate rumen development and function before the weaners return to a grass-based diet.

Calves are weaned at 160 to 240 kg liveweight, ear-tagged, drenched, vaccinated and then drafted into three weight groups: <180 kg, 180–240 kg and >240 kg. The weaners are introduced to hay and then progressively to a balanced, silage-based ration in feeding pens adjacent to the silage stacks and commodity shed. Heavier animals are fed in nearby containment pens.

Each ration typically comprises 85–90% silage, along with M8U, protein meal, a mineral premix and probiotics. "We want to make weaning as least stressful as possible and to produce happy, healthy animals that have fully developed rumens and are ready to go back to the paddock," Sandy says.

"It's about learning good habits – how to eat and getting used to silage, humans, horses and dogs. They get used to seeing that red mixer wagon and they know it's full of something they like eating.

Some people say that feeding weaners makes them fat and they don't do as well when they go back to the paddock but we've found they just take off.

"Because they're bigger, they seem to handle the ticks and worms better and they don't look back. If we stuck them out in the paddock without feeding them, they're only going to have longer tail and a bigger head in 12 months' time."

The weaners are supplementary fed between four and eight weeks until the steers reach 270 kg and the heifers reach 250 kg, equating to an average growth rate of about 1.17 kg/day. The average ration cost is $1.81/day based on a daily feed intake of 12.25 kg/day as-fed.

"We're pretty flexible – there have been years where it has not rained and we just feed them a bit less but for longer," Sandy says. "Alternatively, if it rains, we just cover the pit back up."

Weaners are then grown out to feedlot weights in the paddock.

Last year, the McCartneys custom-fed a group of steers at Sapphire Feedlot, Goondiwindi.

The feedlot manager reported that the steers went onto feed 7–10 days faster and recorded a higher daily feed intake, average growth rates and total weight gain compared with other cattle in the feedlot.

The steers had an average liveweight of 416 kg upon entry and recorded an average daily gain of 2.23 kg/day over 113 days. Upon slaughter, they had an average carcase weight of 370.5 kg. All of the steers had 0 or 2 teeth dentition and achieved MSA grades.

"We've been custom feeding for six or seven years with fairly mixed results," Sandy says. "When we started, we were flat out getting 1.2 kg a day and there were lots of non-eaters.

"Now we've got cattle that are bunk-trained and ready to eat from the moment they get there. We're getting almost twice the growth rates and getting them into profitable markets at 24 to 30 months of age. Every kilo you can put on, that's an extra $3 in your pocket."

All told, the McCarthys spent about $250,000 on earthworks and the purchase of a loader, mixer wagon, tractor and yards. "Anyone can do this," Sandy says.

"It doesn't have to cost a lot of money. All it takes is a couple of phone calls and the will to change what you're doing. Sealing the stacks and pits is the hardest bit about producing silage – but it's one day of pain for a whole lot of gain."

Maize silage adds a new dimension to 'fully fed'

The addition of maize silage to the ration is taking the concept of 'fully fed' to new levels on Macalister region dairy farm, Anderlea Dairy.

Ross Anderson, together with wife, Jenni Collings, and parents, Graeme and Chris Anderson, milk 500 crossbred cows in the Denison district south-east of Heyfield.

The fourth-generation enterprise comprises a 120 ha dairy platform, two 30 ha irrigated blocks and a 120 ha dry block, all located within six kilometres of each other.

In consultation with Warragul-based nutritionist, David Huggins, cows are fed 8 kg/day of processed wheat, canola mix and mineral pellets in addition to high yielding pastures and quality silage.

Average production stands at about 650 kg milk solids.

The Andersons put in their first 260 tonne stack of maize silage in March this year and are happy with how it's going.

"We have always been focussed on feeding our cows to their potential – but adding some maize silage has changed the game," Ross says.

"It seems to be a great quality feed – and great quality feed means great production, health and fertility.

"It adds a cost as we are buying it in, but expect a return on investment"

"It has a completely different nutritional value, it's easy to feed out and there's less spoilage.

"We're already planning to put in another pit for next year, possibly with a home-grown crop."

The maize was grown, harvested and delivered by a neighbouring contractor.

The crop was treated with MAGNIVA Platinum forage inoculant during processing. It combines a patented strain-specific bacterium, *Lactobacillus hilgardii* CNCM I-4785, with the industry standard, *Lactobacillus buchneri* NCIMB 40788.

This unique combination provides fast-acting 'front end' fermentation with proven 'back end' aerobic stability, allowing silage to be opened earlier and last longer after opening.

It contains a number of special enzymes to assist with rapid fermentation.

The 20 x 40 m stack was covered with SiloStop oxygen barrier film to limit the growth of spoilage-causing yeasts and moulds.

Independent testing has confirmed these multi-layer polyethylene films are up to 100 times more effective than conventional plastic in preventing the entry of oxygen into silage.

The 45 micron film is protected by an outer layer of SilageKeeper UV cover, a dense polyethylene mesh that provides additional protection against sunlight and potential damage caused by animals and environment.

The two layers are sealed with SealKeeper gravel bags, which provide a re-useable and environmentally-friendly alternative to car tyres.

"Part of the reason we went into pit silage was to reduce wastage," Ross says.

"We used to fill bins and bins with waste plastic and it's just not sustainable.

"We didn't even think about using tyres for the same reason."

Ross says bulk silage saves time and reduces wastage.

"At one stage, we were feeding up to 2,000 bales a year in the paddock using a bale feeder," he says.

"It was terribly inefficient.

"We were probably losing about 10% of our silage and wrecking our pastures, so we put in a feedpad two years ago.

"Initially, we were feeding bales directly in the trough but we were always getting bits of netting or wrap caught in the feed out wagon"

"We moved to pit silage two years ago and this cut wastage by two-thirds.

"We learnt some tough lessons in the first year.

"We didn't put our sites where they should have been, they weren't as prepared as well as they should have been and we weren't completely ready to cover the pits on the day they were cut.

"Last year, we put in a single, large stack on our dry block, where we can have a fair bit of pasture ready to be cut at the same time."

Ross spent more than a decade working and travelling before returning to the family farm in 2006 at the age of 30.

"I said I'd come home and give mum and dad a hand and see how we go," he says.

"At the time, they were milking about 380 pasture-fed cows on just the home property.

"The best way to know if you love dairying or not is to get skin in the game, so I became a sharefarmer with my parents six months later.

"I was interested in dairy farming as a kid but when I came back I realised I really didn't know much about it.

"I attended every course I could and got really excited about pasture management and nutrition.

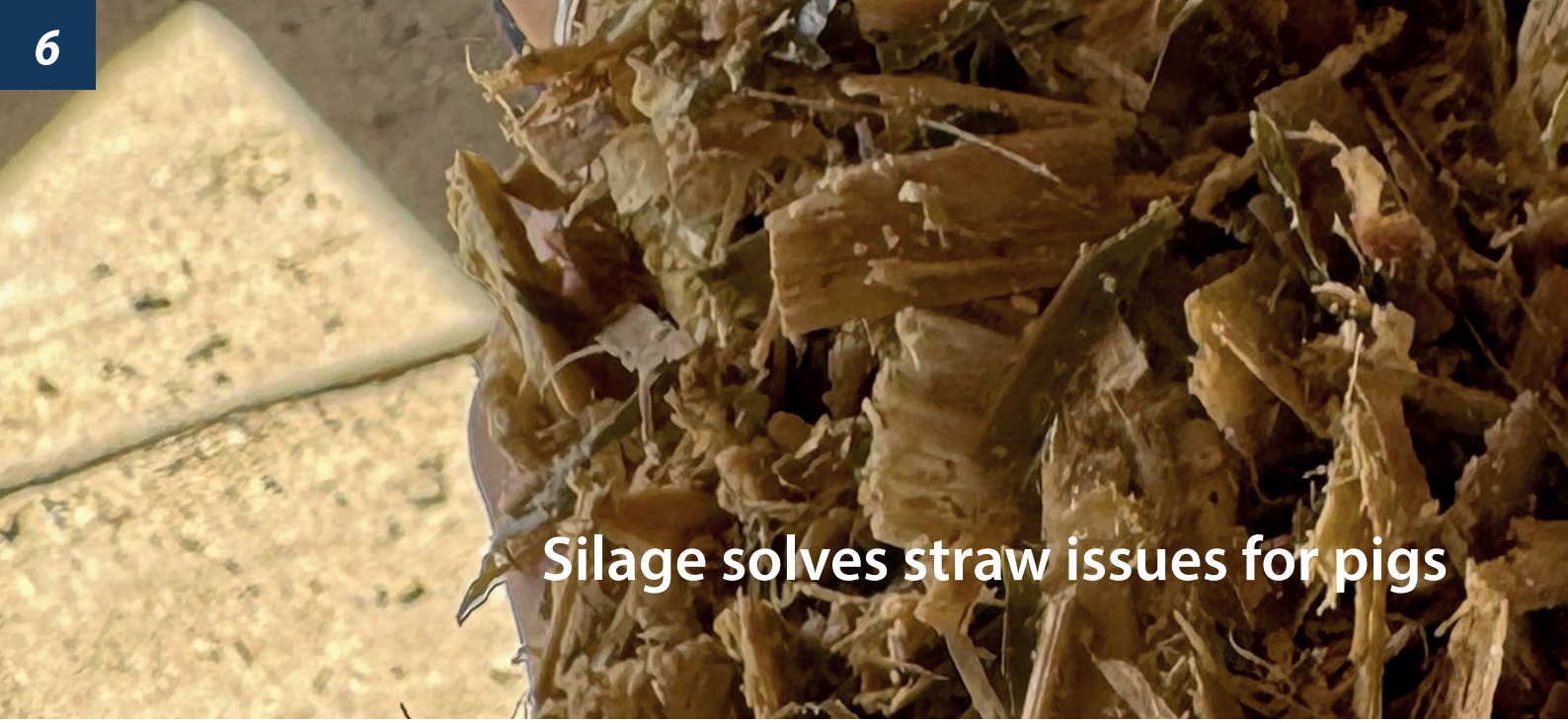
"We started feeding grain, primarily to feed another mouth – mine.

"We weren't feeding that much – about 2 or 3 kg of triticale a day , and a bit of canola– but we could see what a difference it was making."

In 2009, the family constructed a 50-bale , single-operator rotary dairy.

Cows are fed before milking at 3.30 am and 2 pm.

"Our philosophy has always been that the family should eat together, so milking early means we can get home for breakfast and tea," he says.



Silage solves straw issues for pigs

An extensive experiment conducted by Australia's largest pork producer, SunPork Group, has confirmed that silage has an important role to play in enriching the environment of pigs. Straw is often used as the 'gold standard' for enrichment but it is the least-preferred option because of the risks it poses in terms of biosecurity, fire, mycotoxins and effluent management.

While silage is not traditionally associated as a feed ingredient in pork production, the SunPork Group has recently assessed its use as an 'enrichment' material as part of their commitment to leading animal care and sustainability. 'Enrichment' aims to provide indoor-housed pigs with a stimulating environment that allows natural behaviour, such as rooting, foraging, and nesting. Common methods of enrichment include the provision of straw, forage, wood shavings, shredded paper or toys, such as ropes, chains or balls.

The recent experiment, which involved more than 700 sows, examined the impact of providing silage to sows during the seven-day interval between weaning and mating on animal welfare and reproductive performance. SunPork Research Officer, Dr Lauren Staveley, says weaning is arguably the highest stress period for a sow. "She is separated from her piglets, she's producing milk, she's mixing with unfamiliar sows in a new environment, she's consuming a new diet and she's coming into heat – it's all happening," Lauren says.

"We wean the sows three to four weeks after giving birth and put them on a special weaning sow diet for seven days until mating. Providing the sow with enrichment material in the environment is a simple way to reduce competition, fighting and injury during this potentially stressful period. Increased intake of glucose and roughage between weaning and mating has been shown to also have positive effects on reproductive performance," Lauren states.

Freshly weaned sows were moved into groups of eight animals per pen in the mating shed and allocated to treatments, ensuring even distribution of parity and body condition. The Control group was offered a standard diet (13.4 MJ DE/kg) ad libitum for seven days post weaning. The Treatment group was offered the same diet and 3 kg/sow/day (0.33–0.35 DM equivalent) of export-quality corn silage (Figure 1), placed on the floor of the pen for the seven days following weaning (Figure 2).

Body condition and injury scores were measured for the seven-day experimental period. Blood and faecal samples were also collected from each group at entry and exit to monitor markers of metabolism and stress. Cameras were installed over every pen to determine welfare using the sows' 'startle' score.

A comprehensive set of reproductive data, including the weaning-to-mating interval, conception rate, farrowing rate, litter size farrowed, pre weaning piglet mortality and litter size weaned was also collected.

"We're still analysing the results but at the moment, we can say that the provision of silage to sows at weaning minimised the reaction to an adverse stimulus (Figure 3), which would suggest they are less reactive and so more comfortable. This is an important welfare finding" Lauren says.

However, there were no difference in injury scores. Lauren states "The injury scores in both groups were very low, which we attribute to the fact that we've eliminated close-confinement from our production systems, so the sows are used to group environments." The analyses of the reproductive measures are still being conducted, but to date don't indicate any treatment effects.

"Silage addresses all of the issues that straw poses for us. We are now looking at using silage at different stages of the production cycle, such as pre-farrowing," says Dr Kate Plush, Science Technology and Adoption Manager at Sunpork.

"We are also quite happy with the practicality of it. Our farm staff were very supportive about the experiment and commented on the ease of use including easy to handle, the pens were much cleaner, the drains weren't blocking and there was less slippage, even with regular pen hosing", Kate commented.

This experiment was funded by Lallemand and Australasian Pork Research Institute Limited. The SunPork team will submit this experiment for publication in a peer-reviewed scientific journal.

SunPork is Australia's largest pork integrator, accounting for about 20% of the country's pork production. Its business spans across the pork value chain.

The trial was funded by APRIL in conjunction with Sunpork Group and Lallemand Animal Nutrition.

Figure 2: Sows enjoy rooting around in the silage, but the size of the cut limits the risk of clogging drains.

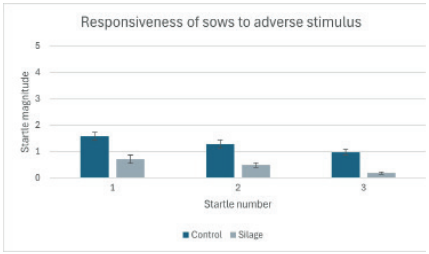


Figure 3: The startle response scores how the sow responds to a loud noise made 3 times in a row at 3-minute intervals – Startle Number. The score goes from 0 (no response) to 5 (flinch and change in posture) – Startle Magnitude.

Boosting feedlot lamb growth and profitability through rumen optimisation

Effective rumen management in cattle and sheep is essential for achieving optimal growth rates. Multiple studies have shown that a well-developed and healthy rumen is linked to higher average daily weight gains, making it a crucial focus for livestock management. This becomes even more important during stressful periods like weaning and should be maintained throughout the fattening phase to ensure livestock meet their target slaughter weights.

Recently, a trial by Vitam International was conducted in South Africa, to study the impact of feedlot systems on the rumen health of fattening lambs. The findings highlight important insights into managing rumen health and improving lamb growth and profitability in feedlot systems.

Why rumen health matters for fattening lambs

The rumen plays a vital role in the performance of fattening lambs, similar to its function in dairy cows and beef cattle. It not only facilitates digestion and nutrient absorption but also acts as a barrier that prevents bacteria and toxins coming from the gut and entering into general circulation.

Rumen microbes break down dietary polysaccharides into volatile fatty acids (VFAs), such as propionate, acetate and butyrate. These VFAs provide up to 75% of the metabolisable energy in ruminants. Well-developed rumen papillae are essential for maximising the surface area for VFA absorption, which directly impacts lamb growth and health.

However, maintaining rumen wall integrity while providing a diet that generates sufficient VFAs for growth can be challenging. High starch diets can generate high volumes of VFA leading to a decrease of ruminal pH, potentially leading to subacute ruminal acidosis (SARA), which may ultimately damage the ruminal epithelium and can create a disbalanced rumen microbiota.

Challenges in feedlot lambs

Lambs are particularly susceptible to stress, especially during the transition to a feedlot system. They are initially fed high-fibre diets, but as they move to finishing pens, their diet shifts to one that is high in starch and low in fibre. This rapid change, combined with the stresses of weaning and transport, can increase the risk of SARA and ultimately to acidosis.

Acidosis in lambs can range from mild drops in performance to severe rumen inflammation. This not only affects growth and feed efficiency but can also harm production margins, a key concern for feedlot operations.

The benefits of feeding rumen-specific live yeast

To mitigate the risks of ruminal SARA (and try to avoid acidosis) while promoting growth, Lallemand Animal Nutrition selected LEVUCELL SC, a rumen-specific live yeast feed additive. This live yeast helps stabilise rumen pH, protecting the rumen lining and papillae from the harmful effects of low pH. By maintaining a healthy rumen environment, LEVUCELL SC allows lambs to handle high-starch, low-fibre diets without compromising growth rates.

Feedlot Lamb Trial Results

In a trial conducted in South Africa in 2022, 600 Dohne Merino lambs were divided into a control group and a treatment group. The treatment group received LEVUCELL SC in their grower and finisher feeds. The results showed that adding LEVUCELL SC to the diet delivered clear benefits to lamb health and growth.

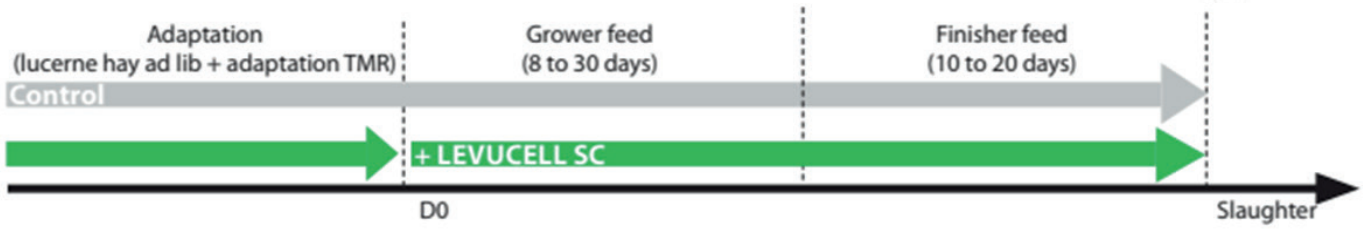


Figure 1: Trial design

	Control	LEVUCELL SC
Hyperkeratosis	4.10%	2%
Rumenitis	2%	3%
Ulcer	2%	0%
Rumen Score Mid and Severe ((Margin et al., 2021)	9.20%	3%*

*P<0.1

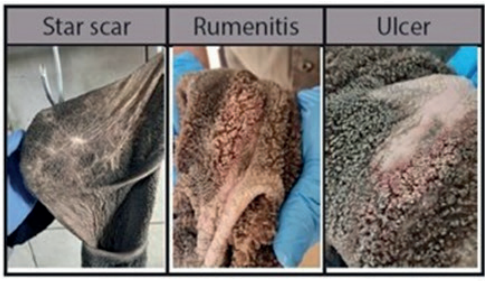


Figure 2: Rumen scoring results

The treatment group experienced a 2% increase in average daily gain and an improved feed conversion ratio of 4.8 compared to 5.1 in the control group. This led to an increased margin over feed cost of 10.35 US$ per lamb in the treatment group versus 8.09 US$ per lamb in the control group. The return on investment was 3:1.

Furthermore, the treatment group showed a reduction in severe ulcers, and hyper-keratinised rumen papillae compared to the control group. Which shows that feeding LEVUCELL SC helped keep lambs health.

A Healthy Rumen Leads to Better Growth and Profits

Feedlot lambs face environmental and dietary stresses that can compromise rumen health and growth rates. By feeding a rumen-specific live yeast like LEVUCELL SC to help stabilise rumen pH, lambs experience less rumen damage associated with low pH. This positively impacts lamb performance through better average daily weight gain, improved feed conversion rates (FCR) and higher returns on feed investments.

Protecting the rumen is crucial for achieving optimal health and growth in feedlot lambs. The use of LEVUCELL SC has been shown to enhance lamb performance, leading to greater profitability in feedlot systems.

Lallemand introduces silage testing service

Lallemand Animal Nutrition has introduced a silage quality testing service for silage contractors and livestock producers.

Company Managing Director, Alex Turney, says the new service compliments the company's existing services. "Our inoculant, sealing and securing technology helps to produce better quality silage," he says.

"This testing service will help our customers to get the most from their silage program by being able to monitor and adjust their mixed rations for optional livestock health and performance.

"In the longer term, we think this new service will reveal valuable insights about the nutritional quality of silage produced in Australia, rather than the 'book value', and help us to better understand all the variations that can be experienced due to harvesting conditions, storage, geography or crop.

"To utilise this service, contact your Technical Services Manager, who will provide sample bags and advice on sampling method. Remember to sample across the face of the stack, seal in the supplied reply-paid bag and complete all your details."

Rock River Laboratory, a global provider of analytical services to the agricultural sector, will then undertake comprehensive complete nutritional analysis, including dry matter, crude protein, starch, fibre, ash and digestibility. Results will be provided within five days.

Rock River Laboratory Director of Sales & Client Relations, Cliff Okker, says regular testing of forage and feed ingredients is an essential step in providing a consistent, high quality and cost-effective ration.

"It's all about consistency because that's what cows like," he says. "Any change in consistency affects livestock performance. One of the most important ways of keeping a consistent diet in front of them is to regularly assess the nutritional value of forages and feedstuffs."

"Some of our dairy customers in the U.S. sample their rations two or three times a week, which allows them to adjust diets before their cows tell them something's wrong. The end goal is to remove any fluctuations in average daily gain or milk production."

Cliff says routine testing can easily pay for itself in improved livestock performance and reduced feed costs. "It's unbelievable how much profit is tucked away in there," he says.

"Say you are making a 18% CP feed using a mix of canola and corn. If testing showed the protein content of canola delivered to your farm had increased from say, 40% to 43%, you might be able to save $5 tonne in the cost of delivered feed by reducing the amount of canola in the ration.

"Multiply that by a hundred tonnes and the value of testing can quickly add up. You can achieve major savings from measuring and adjusting just one ingredient – imagine if you do it for multiple ingredients."

Cliff says correct sampling technique is essential. "Testing feedstuffs is like sighting a rifle," he says. "The more shots you fire, the more you are going to get a better understanding of your accuracy and consistency, we can't pull a 100% representative sample each time.

"The average of three samples is going to be more accurate than one – and the average of 10 samples is going to more accurate than three. The rules are simple: sample all the major feed ingredients routinely, particularly those that vary the most; collect representative samples; and adjust your ration for any real variation."

Cliff says improper sampling technique is the greatest source of error in forage analysis. "A testing laboratory can determine the quality of the sample submitted – but it's not going to be very helpful in balancing a diet if the submitted sample was not representative of what's actually being fed," he says.

"When testing silage, take five to eight samples from across the face in a 'M' or 'Z' pattern. Take one sample at each point of the letter and half-way in between each point. Place these samples in a bucket, mix well and sub-sample from here to send to the lab."

Cliff says modern analytical methods, such as total tract neutral detergent fibre digestibility (TTNDFD), can provide a more accurate measure of fibre digestibility. "Don't just look at traditional measures of quality like dry matter, crude protein, starch, fibre and ash – what really counts is whether your cows can actually use these nutrients." he says.

"Exactly how digestible are they? Determining NDF based on a single digestibility test at 30 hours is like watching a movie for one scene and then trying to guess what the ending's going to be."

"TTNDFD is a totally different concept. It looks at four different NDF digestibility time points to gain a better understanding of the rate of passage and utilisation through the digestive tract. It tells you what's actually happening in the rumen, not in a laboratory. A two- or three-point change in TTNDFD in a diet can correspond to a 0.5 litre/day change in milk yield."

Cliff says it is also important to monitor processing levels in silage. "The way we measure this is by looking at the percentage of starch that will pass through a 4.75 mm screen while being shaken for 10 minutes on a Ro-Tap Sieve Shaker," he says.

"Properly processed corn silage should have a processing score of more than 60% and ideally, more than 70%. Conversely, poorly processed corn silage will lead to lower rumen starch degradation and lower total tract digestibility."

Boost protein without the toxicity

LALLEMAND Animal Nutrition has been appointed the Australian distributor of a novel feed additive that provides a highly concentrated source of non-protein nitrogen while reducing the risk of urea toxicity.

An extrusion of maize starch, urea and sulphur, Amireia 200S contains 200% protein, 22% total dietary nitrogen and 3.2% sulphur.

Lallemand's Technical Manager – Ruminants, Matt Bekker, says Amireia 200S delivers a complete, efficient and cost-effective source of non-protein nitrogen with the benefit of a safe, slow-release form of nitrogen in the rumen.

"Providing cattle with an additional source of nitrogen to boost rumen function, growth rates and milk production has often been a trade-off between cost and safety," he says.

"Protein-based sources of nitrogen are typically expensive, while non-protein nitrogen sources, such as urea, can cause toxicity if accidentally consumed at high levels.

"Most beef producers are aware of the potential dangers of urea toxicity.

"The onset of poisoning is acute and rapid, with symptoms including muscle tremors, abdominal pain, incoordination, respiratory distress, recumbency and often death."

Amireia 200S is manufactured by Amireia Pajoara, a Brazilian company that pioneered the research, development and commercialisation of 'starea' (i.e. gelatinised starch and urea) for use in livestock nutrition.

Its patented formulation technology 'traps' nitrogen and sulphur in the carbon chain of the maize starch, effectively providing a slow-release mechanism.

"Amireia 200S slowly degrades in the rumen over 8 hours," Matt says.

"This slow release of readily available energy, nitrogen and sulphur optimises the growth of beneficial microbial species, and in turn, volatile fatty acids required for growth and milk production.

"This increases the efficiency of metabolism and reduces the amount of waste ammonia or urea released to the environment."

Studies have shown that Amireia 200S has no negative impact on toxicity, nutrient intake, ingestive behaviour, digestibility, nitrogen balance, ruminal pH, ruminal ammonia nitrogen concentration, volatile fatty acids or blood parameters when consumed at up to 80 g/day per 100 kg bodyweight.

Matt says Amireia 200S has great potential for use in the northern beef industry.

"Tropical pastures can sustain high levels of livestock production during the wet season but their nutritional value declines rapidly after a relatively short growing period," he says.

"Protein and energy levels quickly fall beneath minimum requirements, leading to liveweight and body condition losses.

"The drying pastures become more fibrous as they mature, further reducing digestibility and therefore feed intake.

"In many cases, cattle become physically full before they can consume sufficient levels of nutrients."

Most beef producers provide some type of supplementary feed, such as dry licks, molasses or blocks, to their cattle to address these nutritional deficiencies at different times of the year.

Matt says Amireia 200S can be easily added to dry licks or blocks.

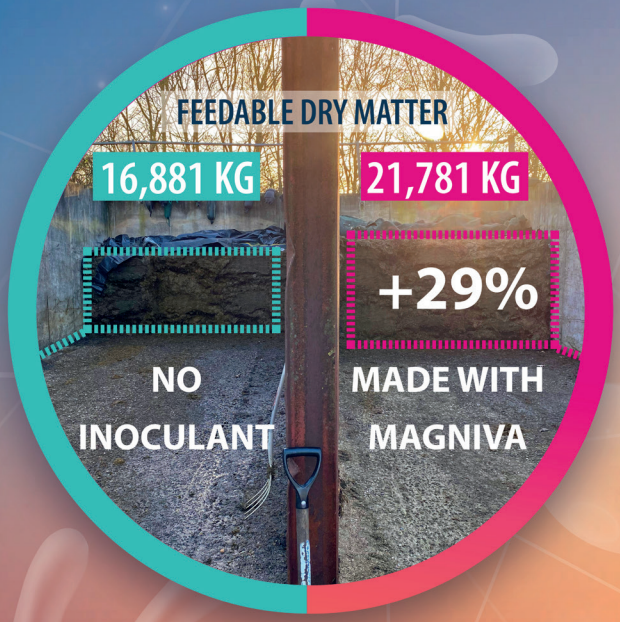
"The form is a moderate to fine grained particle that mixes readily with other feed ingredients and is readily accepted by livestock, even at high inclusion rates," he says.

Amireia 200S can also be used as an alternative protein source in intensive livestock rations such as dairy, intensive beef and sheep rations where crude protein can be optimised while saving space in the ration formulation

"We believe Amireia 200S will be a cost-effective replacement for many other protein sources, which will help producers to reduce their feed costs without any impact in livestock performance," Matt says.

Amireia 200S is packed in sturdy 25 kg bags that provide a two-year storage life.

• Matt Bekker has more than 35 years' experience in extensive and intensive livestock production, including a comprehensive background in dairy, rangeland beef and feedlot management. Matt served as the Asia Pacific Technical Services Director with a leading global animal nutrition group, gaining valuable experience across Asia and Oceania before taking his current role. He joined Lallemand Animal Nutrition in 2023 as the lead for the company's growing portfolio of yeast and bacterial probiotics used in ruminant animals. Matt serves on the Australian Association of Ruminant Nutrition committee and is the current Federal President of the Australian Association of Animal Sciences. He holds a Masters degree in Agriculture from the University of New England and is the author of several peer-reviewed scientific papers.



MAGNIVA
FORAGE INOCULANTS

UNLOCK TREASURE:

EVERY CROP. EVERY TONNE. EVERY TIME.

New data on the dry matter intakes (DMI) of first cut silage has busted the myth that inoculants are not needed when harvesting conditions are favourable.

Lallemand Animal Nutrition worked with Reading University's Centre for Dairy Research (CEDAR) to establish the value of using its MAGNIVA Platinum inoculant. That research showed a 1.5kg increase in the daily DMI of first cut silage compared to forage that was untreated. Luis Queiros, Global Category Manager for MAGNIVA, says this demonstrates that even under ideal weather conditions silage inoculants play a crucial role in producing and maintaining the best quality silage.

"Why risk your biggest silage yield by not treating it?" he says. "Some producers will only consider using silage inoculants if the growing conditions are less than the ideal, perhaps when it is wet or during a drought. However, using a product that is specific to whatever that challenge might be is vital to producing quality silage and to driving animal performance, even under perfect weather conditions."

There are good reasons for this. When weather conditions are good through the growing season, forages are likely to have higher sugar and protein values, and yields can be maximised, although there is also a risk that forages can be drier than normal.

While higher dry matters and sugar levels are great for cow performance, they make silage more susceptible to the growth of spoilage organisms during the fermentation process. Higher protein levels can also buffer the crop, making the fermentation process more difficult to achieve. Luis advises that to retain these values and avoid spoilage, the pH of the silage needs to be lowered as quickly as possible. "That is what a good inoculant does" he explains.

The bacteria mostly found in silage inoculants produce lactic acid which lowers the pH, thereby preserving sugar and protein levels. If this does not happen the silage can quickly spoil.

"The high sugars and protein levels in the silage which farmers have worked so hard to achieve, can be lost very quickly to spoilage bacteria" Luis warns.

Higher sugar content forages also require an inoculant that can control spoilage organisms, such as moulds and yeasts, growing during the fermentation period, and when the bunker or bales are opened for feeding to stock. In this situation, yeast levels in high sugar silages can quickly increase because they use the sugar as a food source.

"Even worse they cause the silage to heat significantly, so all that extra sugar that the good weather conditions have provided is wasted and further energy is lost through the silage heating" says Luis. Moulds will start to grow, elevating levels of waste and lowering intakes. This can be a health risk to cattle as moulds are a source of mycotoxins, harmful chemicals produced by the fungi. The MAGNIVA Platinum range is proven to significantly reduce yeast and mould spoilage.

MAGNIVA Platinum gives you better quality silage with reduced DM losses.

The trial also showed that MAGNIVA Platinum kept more energy and nutrients locked in by keeping the silage cool. An 8°C difference was recorded in the peak temperature reached between treated and untreated forages – a difference that will waste an extra 28MJ of energy per tonne fresh weight silage.

The cost of producing any cut of silage is significant so investing in an inoculant to maintain quality is a sound investment, says Luis. If weather conditions are volatile, there are even more reasons to use an inoculant, he adds.

With wet ground and narrow harvesting windows comes the risk of low dry matter forages and more soil contamination, Luis advises. "In both cases, it is important to drive initial fermentation fast, by quickly lowering the pH. This can be achieved by adding an inoculant that produces lactic acid only" he says.

The MAGNIVA range of inoculants are designed and independently proven to drive fermentation efficiently under a variety of conditions. Luis' advice to farmers is clear: "Unlock the treasure in your silage by treating all silages at all times."

In The Mix is published three times a year.
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