

**SPECIFIC
FOR YOUR
SUCCESS**

IN THE MIX

#62

SUMMER 2023

SILAGE HELPS TO FUTURE PROOF GIPPSLAND BEEF ENTERPRISE

Pictured left to right: Scott Atkinson, Lallemand Technical Services Manager and Anthony Snow, Gippsland Beef Producer



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LPC expands into Australia and New Zealand with New Edge Microbials

On November 22, 2023, Lallemand Plant Care (LPC) signed a Subscription Agreement to invest in New Edge Microbials (NEM), an Australia-based company that develops, produces and markets microorganism-based products for agriculture in Australia. As a result of this transaction, Lallemand will become the principal shareholder in NEM, which will become the exclusive platform to develop LPC products in Australia and New Zealand.

Australia is the World's 9th largest producer of wheat and 5th largest exporter. NEM is the market leader, and therefore the best platform for Lallemand to develop its plant care activities in this field. The NEM team is competent and dedicated - a perfect cultural fit.

Welcome

This edition of *In The Mix* marks a significant milestone in our journey as Lallemand proudly celebrates 100 years of yeast production. We also delve into stories that explore the path to future proofing beef and dairy operations, focusing on the crucial role of silage in safeguarding your livestock. Forage conservation remains paramount in pastoral-based systems, emphasising the need to plan not only for current production but also for the challenges that the next dry spell may bring.

As we approach the summer, take a moment to ponder, 'What can I do differently next year?' Whether it's reducing antibiotic use, optimising rumen function, closely monitoring your cattle, or strategically increasing silage production for operational resilience, Lallemand stands ready with solutions and expertise to assist you.

We extend our heartfelt thanks to all our customers for contributing to a robust year. Wishing you a Merry Christmas and a prosperous 2024 filled with success. Your continued support is deeply appreciated.

Alex Turney - Country Manager

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DID YOU KNOW?

Biofilms: friends or foe?

Biofilm is a way of life for bacteria. They are spatially organised microbial communities with emerging properties in comparison to the free-floating form.

Microorganisms inside the biofilm are embedded in a self-produced matrix that gives a three-dimensional structure to the population. For example, this structure leads to the appearance of gradients making the microorganisms living deep in the biofilm more tolerant to environmental fluctuations, such as the application of antibiotics or biocides.

Most bacteria on earth are organised in biofilm form, they are everywhere.

A biofilm can be formed either by undesirable (i.e. negative biofilms) or by beneficial (i.e. positive biofilms) bacteria.

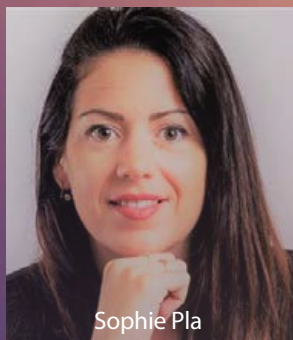
Most chronic infections in plants, animals, or humans are associated with pathogenic biofilms. It is noteworthy that 60-80% of human microbial nosocomial infections are caused by bacteria biofilms.

Biofilms can be positive and used by humans to transform food, as during the manufacturing of cheese for example, or act as bio-preservation agents for plants. Our gut and skin microbiota also contain biofilms.

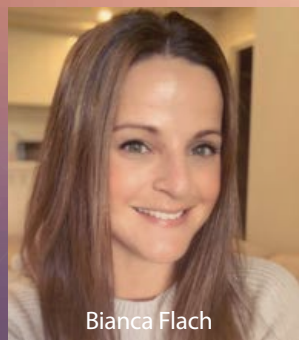
This article is extracted from an expert interview with Virgile Guéneau, watch the interview here:



Matt Bekker



Sophie Pla



Bianca Flach

Lallemand Animal Nutrition welcomes three new faces

Lallemand Animal Nutrition is pleased to announce the appointment of Matt Bekker to the newly-created position of Technical Services Manager – Ruminants.

Matt will have responsibility for the company's growing portfolio of yeast and bacterial probiotics, including LEVUCCELL SC and PROTERNATIVE; yeast derivatives, including AGRIMOS and YANG; antioxidants, ALKOSEL and MELOFEED; and livestock environment solutions, LAFILM PRO and MANURE PRO.

Matt has more than 35 years' practical and research experience in extensive and intensive livestock production.

Growing up on his family's dairy farm in the Adelaide Hills, South Australia, Matt spent his early years working as a sharefarmer on a 600-cow dairy enterprise at Meningie, South Australia, and then managing a 20,000-head feedlot in southern Queensland.

From there, he moved into animal health and livestock nutrition, including the past 13 years as Technical Services Director – Asia Pacific with a leading premix manufacturer.

Matt holds a Master's Degree in Agriculture from the University of New England and is a member of the American Society of Animal Science.

He is the author of several scientific papers addressing gut health and performance in broiler chickens; the effect of antioxidants on bull fertility; feed digestibility and gut health in the presence of protease; and the role of copper in broiler intestinal integrity and performance.

Matt has a particular interest in genetic improvement, livestock nutrition, physiology and antibiotic-free production systems.

"Sustainability is today's hot button but animal health and welfare, performance and sustainability are all the same thing," he says.

"Lallemand has an incredible portfolio of high quality, naturally-derived products that are scientifically proven, have known ingredients and a known mode of action.

"There are more than 2.5 million dairy and beef animals on feed at any time in Australia and there's not one of them that couldn't benefit from one of these products.

"We have barely touched the surface but I have no doubt that Lallemand is poised for success and I want to be part of that journey."

Matt's appointment means Lallemand now employs eight technical services managers in eastern Australia.

Lallemand Animal Nutrition County Manager, Alex Turney, says he is delighted to have assembled such a first-rate team over the past decade.

"This team has more than 200 years cumulative experience across all facets of dairy, beef, pork, poultry and forage production," he says.

"In turn, they are supported by a fantastic customer and administration team, including our two most recent appointments, **Quality Officer, Sophie Pla**, and **Accountant, Bianca Flach**."

"Sophie Pla worked as a quality officer with Lallemand in France for eight years before relocating to Australia in October with her family.

"She has nearly 15 years' experience in quality management and holds multiple qualifications in her field, including a Bachelor of Science – Quality Analysis Chemistry from Université Paul Sabatier Toulouse III in France.

"Sophie is responsible for quality assurance across all of Lallemand's business units in Australia and remains part of the global team.

"Bianca Flach joined us in May.

"Graduating with a Bachelor of Commerce, Finance and Financial Management Services from the University of South Africa in 2016, she has 13 years' experience in accounting in South Africa, the UK and Australia and is currently completing her CPA program.

"If nothing else, their appointments made for interesting times in the office during the recent Rugby World Cup."

The silage journey for the Hofmans



Gippsland, VIC dairy farmers, John and Esther Hofman, have travelled the full journey of silage production, moving from baled to bulk pasture silage and now bulk maize silage over the past two years.

This ambitious couple milk about 260 spring-calving Holstein and crossbred cows on 100 ha of leased land on the northern outskirts of Fish Creek.

"We are quite limited here by the size of the property and facilities, so we are always thinking about different ways we can do better, particularly nutrition," John says.

"I realised that I could play it safe feeding 5 or 6 kg/day, along with pastures and silage, and get 540 kg MS each year or feed more and really push production.

"Now we're feeding 9.5 kg/day without any

impact on pasture consumption.

"The stuff in the paddock is always Number 1.

"We've found the better we feed them, the more they eat and that extra energy is going straight into improved milk production and body condition."

The cereal-corn-canola mash now contains LEVUCCELL SC probiotic.

This is complemented by about 4 kg DM of maize silage on the feedpad and 12–13 kg DM/day of pastures.

The program has increased average production by 25% to an impressive 680 kg milk solids at the end of 2023 season.

"Our cows are as close to being as fully fed as they can be," John says.

The Hofmans introduced bulk pasture silage and maize silage to the program last season.

"Until last year, we'd generally make 500 or 600 bales of pasture silage and feed it out in the paddock," John says.

"I'd cut all the grass and get a contractor to rake, bale and wrap it.

"Five years ago, I said I would never do bulk silage but 100 acres of adjoining land came up for sale 2 years ago.

"It meant we could grow, cut and pack a lot of silage at once, so pit silage was now an economic option.

"Plus, we'd always wanted to fit maize into our system and now we had the land to do it.

"We have difficult autumns in the past and we often have to buy in a lot of hay.

"Maize silage is far better quality feed than hay and it's cheaper – you can't even buy poor quality hay for \$300/tonne this season."

Last spring, about 60 ha of pasture was harvested by Meeniyan-based contractor, Matt Smedley from DCB Rural Contracting.

"That pit silage was the best silage we've ever grown," John says.

"It was cut at the right time, even a bit earlier than usual."

Harvested forage was treated with MAGNIVA Classic forage inoculant during processing.

MAGNIVA Classic two strain-specific lactic acid-producing bacteria, *Pediococcus pentosaceus* NCIMB 12455 and *Lactobacillus plantarum* CNCM MA 18/5U specially selected for ensiling pasture species.

The stack was then 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 covers, a dense polyethylene mesh that provides additional protection against sunlight and potential damage caused by animals and the environment.

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

"We never even considered using tyres," John says.

"Moving tyres around is a hard job – they're heavy, they're wet and they're full of spiders.

"The stack took 20 minutes to cover using the bags.

A 12 ha maize crop was planted using a strip cultivator last November by Yarram-based silage contractors, Wayne and Hayden Bowden.

"There was a bit of stress getting it planted on time," John says.

"We had a very wet winter so we a very limited window to harvest our pasture silage before planting the maize.

"We got a lot of rain just after it sprouted but then it warmed up, and off it went."

The crop yielded just under 18 t/ha when harvested in March.

Harvested forage was treated with MAGNIVA Platinum forage inoculant during processing. It combines a patented strain-specific bacterium, *Lentilactobacillus hilgardii* CNCM I-4785, with the industry standard, *Lentilactobacillus 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.

MAGNIVA Platinum also contains a number of special enzymes to assist with rapid fermentation.

It was sealed in the same way.

"We were very happy with the outcome," John says.

"We spent about \$65,000 to produce 230 tonnes DM of silage, which equates to about \$280/t DM as-fed.

"This compares to about \$450/t for grain."

The silage has had an obvious impact on production.

"We're just at the tail end of calving and our production is already higher than last year's peak," John says.

"Our cows are producing 35.5 L/day and – and we've still got another six weeks until peak production.

"Plus there's been a noticeable improvement in body condition."

The silage is fed out into a feed pad the Hofmans had constructed in Autumn 2020.

"People who say you need 500 cows to make bulk silage work are wrong," John says.

"Our biggest investment was a 13-tonne Giltrap feed wagon and a silage grab, about \$95,000 all up.

"We were feeding eight or nine rolls a day, so that's two to three one-hour trips – one to two in the morning and one in the afternoon.

"Feeding out really eats into your day.

"The wagon can load and feed out the same amount in half an hour to an hour.

"Then there's all of that plastic."

This year, the Hofmans hope to produce about 250 tonnes of pasture silage and 180 tonnes of maize silage.

"We always want to have a bank of at least 150 tonnes of bulk silage in front of us.

"With our bulk silage, we can keep it for up to five years whereas bales don't last more than a year."

John and Esther are aiming to purchase the property within two years, though they admit a lot has to go favourably in the next 2 seasons to make that a reality.

"We have put a lot into this farm in terms of fencing, laneways, feeding system in the dairy and the troughs.

John grew up on a dairy farm in South Gippsland and worked off-farm for more than a decade before returning to agriculture.

"I knew always wanted to be a dairy farmer but dad said I should get a trade first," he says.

"Esther and I started as sharefarmers under a 50/50 arrangement at Middle Tarwin in June 2014.

"Just over 5 years ago, we progressed to leasing this block at Fish Creek.

"We had to get the fish creek farm firing as soon as possible, so we resowed half of the property to perennial ryegrass prior to starting.

"We have since resown the rest of the place and paid off all the cows.

"It took two years to get to know the farm.

"You have to get your pasture management right first."

Silage helps to 'future proof' Gippsland beef enterprise

Gippsland beef producer, Anthony Snow, has commissioned three 350-tonne silage stacks in a bid to 'future proof' his breeding enterprise.

Anthony and Sarah Snow run about 400 Angus cows and calves across three properties totalling 520 ha in the Bengworden district, 20 km south-west of Bairnsdale, VIC.

Although located in a reasonably safe 600 mm rainfall region and having a 200 ML bore irrigation licence, the properties are not immune to drought.

"The last drought event made me realise that we needed to do things better," Anthony says.

"We were running about 220 cows at the time and we wanted to continue to grow the herd.

"We ended up spending about \$60,000 on hay, which was expensive and time-consuming.

"Until then, we'd been making up to 600 bales of baled and tube-wrapped silage each year.

"Baled silage is good but it has its limitations in terms of quality and storage life."

The three silage stacks were built and prepared over the past two springs and last autumn.

The first stack, which comprises whole-crop barley and clover silage, was harvested and prepared by an Orbost-based contractor.

The other two stacks – comprising whole-crop oats and clover, vetch and annual ryegrass, respectively – were harvested and prepared by Yarram-based contractors, Wayne and Hayden Bowden.

"We really didn't have to do anything differently from what we normally do each year," Anthony says.

"We plant dual-purpose cereal crops over-sown with clover every year for grazing during winter and then harvest what's left.

"Last year, we locked up about 120 ha and the contractors did the rest."

The project was partially funded by the Commonwealth Government's Future Drought Fund.

"We got funding for part of the first stack but we paid for the other two," Anthony says.

"Each stack cost about \$30,000 but it's cheap insurance.

"This is quality forage that contains about 12% protein and 12 MJ energy.

"You can't buy this type of feed at any price when you need it.

"When you're in a drought, you could be looking at \$500/t for even poor quality hay by the time it's landed on the farm."

Harvested forage was treated with MAGNIVA Classic forage inoculant during processing.

MAGNIVA Classic contains two strain-specific, lactic acid-producing bacteria, *Pediococcus pentosaceus* NCIMB 12455 and *Lactobacillus plantarum* CNCM MA 18/5U, that were specially selected for ensiling pasture species.

In addition, it contains a number of enzymes to assist with rapid fermentation.

"What I really love about bulk silage is that it's all done in a day by experienced contractors using really good gear," Anthony says.

"We have good equipment but there's no comparison to what these guys are using.

"Having a fleet of harvesters, tractors and trucks show up at your front gate certainly boosts your confidence."

The 20 x 50 m stacks were then covered with SiloStop Max 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 heavy-duty 80 micron film is protected by an outer layer of SilageKeeper UV covers, a dense polyethylene mesh that provides additional protection against sunlight and potential damage caused by animals and environment.

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

The three stacks are located adjacent to the laneway system on the Snow's largest property.

"It's a good feeling driving in and seeing 1,000 dry tonnes of feed in front of you," Anthony says.

"Having these stacks means we can go into every winter or a long-term drought event with some degree of confidence."

Anthony is now toying with incorporating bulk silage into his yearly feeding program.

"Originally, the plan was to continue feeding baled silage during autumn and winter and save the bulk silage for the next drought event – but I am now starting to wonder if our feed dollars can be better spent," he says.

"Bulk silage is better processed, less wastage and is going to last at least five years.

"Having more bulk silage would allow us to 'super-charge' our operation.

"In a perfect world, we'd like to be running 500 breeders and maybe have up to five stacks, feeding out one each year and replacing it as we can."

Anthony has already purchased a second-hand feed wagon, as well as a shear grab that will enable him to remove silage from 'face' of the stack without allowing spoilage-causing oxygen to enter the stack during feeding out.

Pictured left to right: Scott Atkinson, Lallemand Technical Services Manager, and beef producer Anthony Snow.

Can you afford not to treat your corn silage

With high input costs, it is now more important than ever for farm profitability that homegrown corn silages produce the best feed quality possible.

Many producers are unaware that poorly managed and untreated corn can be subjected to significant losses of nutritional quality and physical dry matter (DM) of 20% or greater, and, in a time where purchased feed costs are so high, this can have a devastating impact on farm profitability.

Many producers believe that corn silage will ferment quite adequately naturally due to the high sugar content and easy-to-ensile nature of the crop. However, the advent of new DNA analytical methods such as metagenomics allows us to study the abundance of all the different types of bacteria found on corn for the first time. This insight suggests corn silage is no different than other forages when trying to produce the best quality silage.

Over just a short growing period, the microbial diversity of standing corn silage can change significantly week to week, and many factors such as weather and field management can play a part in this.

In figure 1 - The microbial diversity of standing corn silage can change significantly week to week, and many factors such as weather and field management can play a part in this. The different colored bars in the table represent different types of bacteria in a standing crop of corn, the bigger the bar the greater the abundance of that particular type of bacteria. Many of these bacteria can be undesirable with regards to making good quality silage. When it's time to cut silage, growers take a risk if they do not treat the corn to prevent undesirable bacteria from dominating the fermentation — and the result may be a poorly fermented silage.

Poorly fermented corn silage will lose dry matter both through the ensiling period due to undesirable bacterial growth and through increased spoilage when the silage is

opened due to poor stability, in which yeast and moulds cause the silage to heat and deteriorate dramatically in quality and feed value. This has a significant impact on costs due to lost silage.

Treating corn silage with specific inoculant that has been independently trialed and proven to overcome the microbial biodiversity seen in the standing crop. This helps maintain the corn silage quality and reduces DM losses through the fermentation. Plus, it reduces losses due to instability by actively inhibiting the growth of yeasts and molds.

In figure 2 - The abundance and types of bacteria found in the corn silage changes greatly in silage treated with MAGNIVA Platinum compared to an untreated control over 64 days. In the MAGNIVA Platinum silage, the abundance of desirable *Lactobacillus* populations (blue bars), increased more quickly than the control. At 64 days ensiling, the only type of bacteria to be found in the treated silage was *Lactobacillus*. This results in a silage with a reduced risk of heating or spoiling.

The control samples contain a far higher diversity of different types of bacteria, meaning it is more likely to encounter undesirable bacterial growth, reducing the fermentation efficiency and increasing the risk of DM and nutrient loss in the silage and increasing the risk of aerobic instability when opened for feeding.

Managing feed costs is crucial to achieving on-farm profitability. Quality silage plays a significant role in driving efficient production.

- Corn silage is the number one energy consumable on most dairy operations.
- The controlled fermentation of corn helps to preserve this energy and nutritional value and prevents dry matter losses and spoilage.
- Why risk up to 20 percent of your silage's dry matter? Think of it as losing every sixth load of silage that comes through your farm gate?

Figure 1: Standing crop (corn)
Microbial diversity prior to harvest (relative abundance)

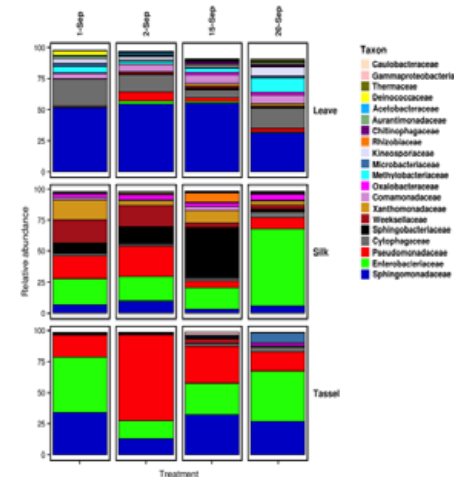
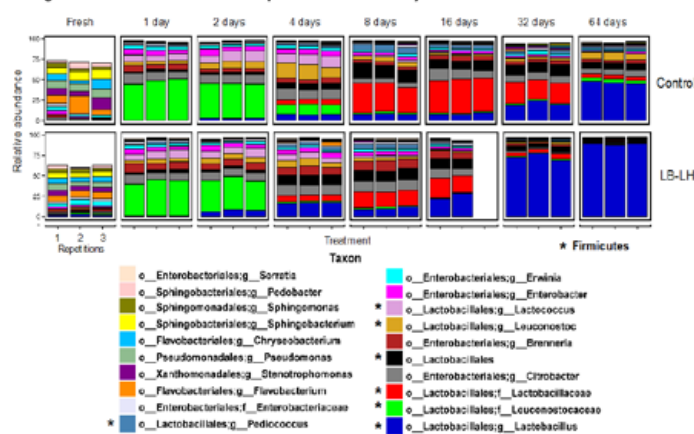


Figure 2: Succession of bacteria amplicons over the 64 days of fermentation





Silage inoculants - it's the microscopic differences that count



The name of several strains of bacteria found in forage inoculants are set to change following a modification to the taxonomy of the genus, *Lactobacillus*.

Taxonomy is the practice and science of categorisation or classification of all living things into groups based on their domain, kingdom, phylum, class, order, family, genus and species.

The genus *Lactobacillus* contains more than 260 bacterial species that have extremely diverse genotypic, phenotypic and ecological features.

Following a detailed review, the genus has been reorganised into 25 separate genera, including the newly-created *Lentilactobacillus* and *Lactiplantibacillus* categories.

Hence, *Lactobacillus buchneri* and *Lactobacillus hilgardii*, two bacterial species found in MAGNIVA Platinum, are now officially called *Lentilactobacillus buchneri* and *Lentilactobacillus hilgardii*.

Likewise, *Lactobacillus plantarum*, which is found in MAGNIVA Classic, becomes *Lactiplantibacillus plantarum*.

Both inoculants are marketed by Lallemand Animal Nutrition.

Lallemand Animal Nutrition Country Manager, Alex Turney, says while these changes may not be a primary consideration for silage contractors and livestock producers when considering which forage inoculant to use this spring, it does reinforce the bigger picture.

"Forage inoculants alter the rate of fermentation in preserved forage and more specifically, help to create an anaerobic environment that prevents the proliferation of spoilage-causing yeasts and moulds.

"In essence, we are using beneficial bacterial species to control undesirable bacterial species in an extremely complex biological environment.

"These new names reflect that complexity – and also the incredible level of knowledge that goes into forage inoculants."

Lallemand is a global leader in the research, development, production and supply of strain-specific yeast, bacteria and microbial derivatives that are used in a wide range of industries.

Lallemand is continually searching for new strains of yeasts and bacteria that are fit for purposes. Its nutrition division is a leading supplier of scientifically-proven silage inoculants, probiotics and yeast derivatives used in the preservation of fodder and in livestock feed.

"We pride ourselves on developing 'strain specific' biological solutions," Alex says.

"For example, MAGNIVA Platinum doesn't contain members of the Hilgardii and Buchneri families, they contain the specific strains CNCM I-4785 and NCIMB 40788.

"Lallemand investigated hundreds of different strains with the Hilgardii and Buchneri species before identifying and assessing those that delivered the desired outcome.

"In combination, these two specific strains deliver a fast-acting 'front end' fermentation with 'back end' aerobic stability that has been proven in dozens of leading agricultural research institutes throughout the world.

"In practical terms, producers, if they need to, can open the silage pit sooner without any impact on nutritional value or aerobic stability and avoid spoilage during feeding out.

"In the same way, MAGNIVA Classic contains two specific strains of *P. pentosaceus* and *L. plantarum* that dominate silage fermentation in less than four hours."

Quality silage is no fluke

More than 90 silage contractors and their staff recently gathered at the Landpower workshop in Melbourne to refresh their skills in producing quality silage.

The event was hosted by Landpower, one of the largest privately-owned farm machinery distributors in Australasia, in partnership with Lallemand Animal Nutrition.

Landpower represents some of the world's leading farm machinery brands, including CLAAS, via the CLAAS Harvest Centre network in Australia and New Zealand.

CLAAS Harvest Centre Product Manager, Luke Wheeler, gave a detailed presentation on how to optimise crop flow, silage quality and fuel efficiency when operating a CLAAS JAGUAR forage harvester.

CLAAS JAGUAR is the world's leading forage harvester, with more than 45,000 units produced over the past 50 years.

It can be fitted with the new SHREDLAGE processor, which intensively processes corn kernels and long-chop maize to improve the digestibility of starch and fibre.

With more than 20 years' experience working on JAGUAR harvesters as a service technician, product specialist and product manager, Luke's in-depth knowledge was clearly evident and appreciated.

The Landpower presentations and breakout sessions involved preparation equipment, harvesting and compaction equipment along with the latest technology in telematics and NIR for measuring silage production. With machinery covering all the silage making steps the focus was especially on producing clean feed with the latest in mowing and raking equipment to reduce the risk of soil contamination of silage. While the CLASS Wheel Loaders focused on the efficient compaction of the silage pile.

Lallemand Technical Services Manager, David Lewis, addressed recent advances in forage inoculant and sealing technology, as well as best management practice.

David stressed the importance of using a scientifically-proven, strain-specific inoculant to match the ensiling conditions.

"High protein crops face greater fermentation challenges, while high starch crops face greater aerobic stability issues," he says.

"Do not assume that all inoculants 'work' or have the same efficacy.

"Choose a forage inoculant that has a known potency that is clearly stated on the label; one that has specific enzymes to assist bacteria to produce an optimal fermentation and improve digestibility; and one that has been formulated for optimal stability and solubility."

During the workshop sessions David also stressed the importance of measuring and managing the silage process as this is the most important time when decisions and the procedures at harvest impact on the silage outcome and quality from harvesting to storage and feedout. These can all have an influence on the animal feeding outcome. Unfortunately you can't go back and change or add something later after harvest.

Given silage contractors are major nutritional suppliers to their customers forage need its important to understand the decisions and outside influences that can impact silage quality.

"Measure and manage the silage process because if you don't measure it, you can't manage or improve it," he says.

It's important to learn and use the new technology that comes in new machinery like the Auto LOC, Telematics and NIR.

These functions can supply instant information for better and faster decisions along with reducing time and potential stress, especially when the days are often very long during a busy silage season.

The event was also supported by three other members of Lallemand's southern team, Phil Lines, Kurt Stein and Scott Atkinson.

Support transition cow digestion to improve performance

WITH LIVE YEAST BEFORE CALVING:



• **+ 2.3**
kg/day milk



• **+ 0.7**
kg/d body weight



• **+ 1.5**
kg /day DMI

The transition period in a dairy cow spans from dry-off through the postpartum and fresh phases. It represents a critical time for the cow with major dietary, metabolic and physiological changes. Feed management is crucial as the transition from a high fiber diet to a diet high in rapidly fermentable carbohydrates can be a challenge for rumen health.

■ How does calving influence the cow digestion?

Different studies analysed rumen wall histology before and after calving. In some studies, a dietary change — increased levels of nonstructural carbohydrates (NFCs) — occurred from 3 weeks before to 6 weeks after calving.

Observations show typical desquamation of the rumen wall, sloughing and decreased delamination between epithelial strata.

In addition, genetic analysis show the rumen wall responded to inflammation through changes in gene expression levels. For example, the level of the anti-inflammatory cytokine IL-10 in the rumen epithelium doubles after calving. The tight junctions that hold epithelial cells together are weakened after calving. This could increase the translocation of pathogens and endotoxins (like lipopolysaccharides, or LPS) from the rumen leading to inflammation, metabolic unbalances and other challenges.

■ How can be diet the adapted?

• Adapt close-up and fresh cow diets:

- **Energy:** close-up diet: 1.62Mcal/kg DM; fresh cow diet: 2.06Mcal/kg DM
- **Crude protein:** close-up diet: 12-14%; fresh cow diet: 17-18%
- **Provide effective fibre** with an adequate particle size (at least 30% NDF in the close-up diet; > 27% in the fresh cow diet)

- **Support the rumen microbiota during this specific period** by favouring fibrolytic bacteria, which improves nutrient extraction and helps to increase rumen pH.

Numerous trials have measured the benefits of feeding live yeast *S. cerevisiae* CNCM I-1077 (LEVUCCELL SC) during the transition.

When fed 30 days before calving as part of a daily ration, the live yeast supports high energy levels in early lactation. The average performance effects right after calving are:

- + 2.3 kg/day of milk,
- + 0.7 kg/d for body weight,
- + 1.5 kg for dry matter intake (DMI), which limits energy deficiencies during this critical period.

In addition to animal performance, these trials provide evidence of positive outcomes on various reproduction and welfare indicators (feeding behaviour, rumen pH, etc.).

■ Is there a specific approach recommended for primiparous cows?

Before their first calving, heifers have greater nutrient needs because of extensive mammogenesis. Thus, supporting heifer nutrition is even more important. The negative energy balance will be even greater in primiparous cows.

OPTIWALL: A new yeast cell wall supplement that supports broilers during vaccinations

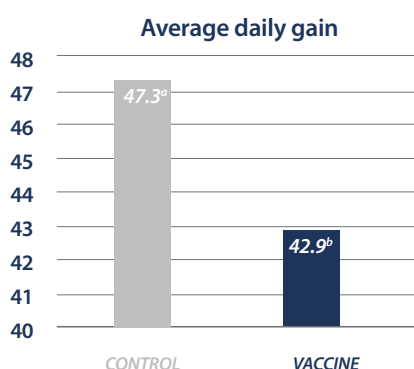


Figure 1

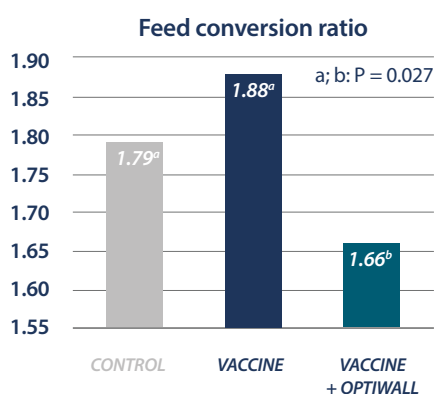


Figure 2

Coccidiosis remains a major threat in poultry production, and live coccidiosis vaccines are gaining ground as a strategy to help reduce antimicrobial and coccidiostat use. However, growing evidence reports negative impacts of the vaccines on broiler performance. A pilot study explored the potential of a new yeast cell wall (YCW) supplement, OPTIWALL, to mitigate the negative effects of coccidiosis vaccines on performance in broilers.¹

Experimental setup

The trial was conducted by the Lallemand R&D team in a French experimental farm in 2022 with three groups of one-day old mixed sex ROSS 308 broilers. One group served as the control, one group received the coccidiosis vaccine only, and the final group received the vaccine and OPTIWALL.

Chicks were vaccinated at day 0 and fed either a standard diet or the same standard diet supplemented with the YCW at the recommended dose (1kg/t in the starter diet, 500 g/t in the grower/finisher diet).

Confirming the deleterious effects of coccidiosis vaccine

The trial confirmed the vaccine reduced growth performance. Average daily gain (ADG) and body weight are significantly lower in the vaccinated birds vs. the control group (Figure 1).

Preserving feed conversion

OPTIWALL supplementation helped mitigate the negative impact of the vaccine on broiler performance. This positive effect is particularly visible on the feed conversion ratio (Figure 2).

OPTIWALL is a selected and optimised YCW developed by Lallemand Animal Nutrition to ensure consistent and guaranteed levels of mannan oligo saccharides (MOS) and β

glucans, both documented to contribute to animal performance and natural defenses. Recent research presented at the World Poultry Congress in 2022 provided evidence supporting the mode of action of this specific YCW on animal performance through enhanced gut health.²

The authors showed OPTIWALL supplementation in broilers helped:

- Increase the number of goblet cells
- Increase the villi height/crypt depth ratio
- Enhance the immune function

This suggests that OPTIWALL could help modulate inflammation in the gut, which would minimise the nutrient diversion required to address an inflammatory response, thereby benefiting birds' performance.

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- ¹ Chevaux et al., 6th International Poultry Meat Congress, March 1-5, 2023, Antalya, Turkey.
- ² Giannenas I, Vasilopoulos S, Dokou S, Savvidou S, Stylianaki I, Demey V, Chevaux E, Barbé F. The effect of 2 yeast cell wall products supplementation on broiler performance, whole body and meat composition and quality, intestinal health and welfare parameters. Poster. World Poultry Congress, Paris, France. 2022.



100 ANS DE PRODUCTION DE LEVURE



Lallemand celebrates one century of yeast production in Montreal

On Thursday, September 21st, 2023, Lallemand celebrated a significant milestone: 100 years of yeast production in its production plant on rue Préfontaine, Montreal. Colleagues from all around the world, clients, partners, and local politicians joined company executives for the celebration of this important landmark.

"100 years! This is a great opportunity to pay tribute to our supportive business partners, valued customers and our talented employees who have all played a part in our success story," stated Antoine Chagnon, President and CEO of Lallemand. "I raise my glass to those who built this factory, originally dedicated to baker's yeast for the local market, and the visionaries who made it a launching platform for the global company that Lallemand has become today" he concluded. Mr. Chagnon took the helm of the company in 2015, succeeding his father Jean, and grand-father Roland before him.

Notwithstanding its respectable age of 100 years, Lallemand's Préfontaine plant has a bright and rich future ahead, due to the potential of microbes to help addressing some of the most pressing issues of our times.

"We are all facing new challenges: climate change and feeding the entire planet are on the menu for the coming decades, and innovative microorganisms can play a key role in facing them. Among others, they can help us reduce carbon emissions, lower the use of antibiotics and chemical preservatives, increase the amount of plant proteins in our diet, and promote the use of microbial fertilizers or biological crop protection products that reduce the use of fossil products," said Antoine Chagnon. "We are also working on the next generation of probiotics to promote further health benefits," he added.

Lallemand has now a diverse and global presence in 50 countries over 5 continents, employs more than 5000 employees and operates 48 production facilities, including 24 yeast and 10 bacteria plants. The company develops, produces, and markets yeast, bacteria, fungi, and derivatives of these microorganisms for applications in baking, wine, beer, distilled spirits, fuel ethanol, animal and human nutrition, pharmaceutical industry, and other food and agricultural industries.

Pictured left: Celebration of 100 years of yeast production in Montreal.

Pictured right: Antoine Chagnon, President & CEO of Lallemand, and Jean Chagnon.



DISCOVER PETWAG: THE PET WELFARE ASSESSMENT GUIDE

Earlier this year our pet team launch PetWAG, a unique tool to help veterinarians and pet owners assess dog well-being. PetWAG is a four-step guide to measure and monitor dog welfare based on personality and mood state. It provides practical tips and nutritional solutions that will help support and improve pet emotional well-being.

Discover PetWAG:

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