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Inside this issue

- › Calf nutrition for long term benefits | pg 1-2
Dairy Australia
- › Avoiding antibiotic residues in calves | pgs 2,4
Lesley Irvine, TIA
- › Monthly farmlet report | pg 3
TIA
- › Spring discussion groups | pg 4
Lesley Irvine, TIA

Benchmarking

The TIA dairy extension team is currently collecting benchmarking data for the 2022-23 season. If you are interested in participating in the free benchmarking program, please contact Lesley on 0428 880 287 or Lesley.Irvine@utas.edu.au. Benchmarking can provide you with a lot of useful information about your business. It also provides important data to monitor industry trends—we are particularly interested in having more farms with less than 500 cows involved in the benchmarking. You can also participate in the benchmarking without sharing your data.

Calf nutrition for long term benefits

Dairy Australia

New research has shown the nutrition calves receive early in their life can positively influence their overall health and resilience as they grow and get ready to join the milking herd.

Successful calf-rearing means calves grow well and remain healthy even when exposed to infections. University of Melbourne PhD candidate, Emma Ockenden, has spent the last three and a half years examining the impact of two different feeding strategies on calf immune responses pre-and post-weaning. The results showed the level of milk fed pre-weaning has long-term impacts on that animal's

immune system.

Current industry standard is a minimum of four litres of milk fed daily to calves from birth until weaning. Recent years have seen many dairy farmers examine their feeding routines and take up accelerated feeding, that is, an increased level of nutrition. One accelerated method of feeding calves involves feeding at least eight litres of milk a day from a few days after birth until weaning.

Emma wanted to see if feeding higher levels of milk in early life would affect how the immune system of those dairy calves responded in comparison to calves



Photo by Nathan Bakker

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fed at current industry standards.

The immune response was measured during the pre-weaning phase via a blood test before and after vaccination of the calves.

“A superior response to the vaccine correlates to an animal that is more resilient, and we wanted to see if the level of nutrition or volume of milk fed to the calves influenced this,” said Emma.

Results of the blood test showed the calves fed the higher volume of milk had a superior immune response in comparison to those that were fed at industry standard.

All calves involved in the experiment were then weaned based on age rather than weight, with the calves receiving the higher level of milk being between 15 and 20 kilograms heavier than the calves fed at industry standard.

Post-weaning

While the increased amount of milk fed to the calves paid off with higher growth rates and improved immune responses in dairy calves reaching weaning, Emma was also interested in what happens to these calves post-weaning.

Post-weaning, pasture-based heifers are typically put out to pasture in paddocks away from the main milking herd or put on agistment properties where they receive less intensive management. This led Emma to examine whether the accelerated method of feeding calves had longer-term responses or effects post-weaning.

Post-weaning, these groups were all reared as per normal farm practice. The research was able to show calves fed at the higher level of milk pre-weaning still had better immune responses, regardless of what their post-weaning feeding regime was.

“We repeated the immune response challenge post-weaning when calves received a booster vaccination at 12 months of age. Even though the calves fed at industry standard pre-weaning had caught up to the other calves in weight, they still did not display the same level of immune response that the accelerated milk fed calves showed,” Emma explained.

Implications for calf-rearing practices on farm

Consider your calf feeding practices and whether the amount of milk you

are feeding calves could be increased. If you increase the amount of milk fed pre-weaning, you still need to keep your focus on consistent growth over the first two years of life. It is likely that this superior immunity will pay off as cows that are better able to resist disease will be more likely to produce high levels of milk, calve each year without difficulty, and remain in the herd for a long time.

The calves involved in Emma’s research are now entering the milking herd at Agriculture Victoria’s Ellinbank SmartFarm, where their performance will continue to be monitored to determine their milk production and other positive health aspects that improved early life nutrition can have over the life of a cow.

This research will form part of the DairyFeedbase23-28 research program that commenced in July 2023.

For more information on calf rearing, visit <https://www.dairyaustralia.com.au/animal-management-and-milk-quality/calf-rearing>

Avoiding antibiotic residues in calves

Lesley Irvine, TIA



Photo by Nathan Bakker

It is common on dairy farms as the calf rearing season progresses, to start experiencing an increase in sick calves particularly with the tail-enders. This can be due to numerous factors, such as, increased bacterial/viral loads in sheds and calf rearer fatigue.

Each farm will have a decision process to follow on how to treat sick calves and this may involve the use of antibiotics. It is very important for our dairy industry that we make sure antibiotics are used responsibly so there aren't any residues to be found in meat (and milk) sold from the farm. Consumers of dairy products

(meat and milk) need to trust their food is safe and be confident the dairy industry isn't contributing to increased antibiotic resistance. We all want to make sure that antibiotics can continue to effectively treat sick people (and animals).

Responsible use of antibiotics

Antibiotics are only effective on illnesses caused by bacteria. This means that antibiotics should only be used to treat animals that are sick because of a bacterial infection. While it would be nice to have a laboratory at every calf shed that could give an immediate diagnosis on a sick calf,

➤ Continued on page 4.

TIA Dairy HIGH2 Farmlets Monthly Report - August 2023

28/8/23 - Week 9	Farmlet 1		Farmlet 2		Farmlet 3		Farmlet 4	
# Cows	29		29		29		22	
SR (cows/ha)	3.94		3.94		3.94		2.99	
Pasture species	Perennial ryegrass & white clover		Perennial ryegrass & white clover		Perennial ryegrass, white clover & plantain		Mixed species	
Nitrogen (kg N/ha.yr)	300		150		150		0	
Daily Production								
	Per ha	Per cow	Per ha	Per cow	Per ha	Per cow	Per ha	Per cow
Litres	93.8	34.5	93.1	34.3	90.7	33.4	78.8	34.1
Protein (kg)	3.0	1.12	3.0	1.11	2.9	1.08	2.6	1.11
Fat (kg)	3.8	1.39	3.8	1.38	3.7	1.34	3.2	1.37
Milk Solids (kg)	6.8	2.51	6.8	2.50	6.6	2.43	5.7	2.48
Production to Date								
	Per ha	Per cow	Per ha	Per cow	Per ha	Per cow	Per ha	Per cow
Protein (kg)	13.7	3.5	13.6	3.5	13.3	3.4	11.5	3.9
Fat (kg)	17.0	4.3	16.9	4.3	16.4	4.2	14.3	4.8
Milk Solids (kg)	30.7	7.8	30.5	7.7	29.7	7.5	25.8	8.6
Pasture Performance								
Pasture Growth (kg DM/ha.day)	37		38		30		30	
Pasture Cover (kg DM/ha)	2447		2416		2413		2592	
Milking Cows Intake (kg DM/cow.day)								
Pasture	15.0		15.6		14.9		15.0	
Concentrates	6.2		6.2		6.2		6.2	
Silage	0.0		0.0		0.0		0.0	
Other Supplements	0.0		0.0		0.0		0.0	
Total Intake	21.2		21.8		21.2		21.2	
Nitrogen Use								
	This Period	Season	This Period	Season	This Period	Season	This Period	Season
Nitrogen Applied (kg N/ha)	0	16	0	15	0	15	0	0

Results presented in this report cover only a snapshot in time and should not be used as indicative of long-term results.

Comments on Farmlet 1

20 cows (about 70% of target number) entered F1 on Thu 24/8/23. Trial cows are in lactation 2 to 6. Cow numbers increase to 29 in a few weeks.

At start of grazing trial, cows were 27 days in milk, and 530 kg liveweight (7 day average, walk-over scales)

Rotation is 44 days. Feed wedge looks good but predicts feed shortfall in 14 days. With increasing soil temp and day length, expect pasture growth to increase and fill this gap.

Comments on Farmlet 2

20 cows (about 70% of target number) entered F2 on Thu 24/8/23. Trial cows are in lactation 2 to 6. Cow numbers increase to 29 in a few weeks time.

At start of the grazing trial, cows were 28 days in milk, and at 538 kg liveweight (7 day average, walk-over scales).

Rotation length is 40 days. Feed wedge is looking good with no feed gap evident at this point in time.

Comments on Farmlet 3

20 cows (about 70% of target number), entered F3 on Thu 24/8/23. Trial cows are in lactation 2 to 6. Cow numbers increase to 29 in a few weeks time.

At start of grazing trial, cows were 28 days in milk, and at 533 kg liveweight (7 day average, walk-over scales).

Rotation is 48 days, slightly slower than F1 & F2, aim to buffer emerging gap in feed wedge. If gap not filled with increasing pasture growth rate, may fill with silage.

Comments on Farmlet 4

18 cows (about 80% of target number), entered F4 on Thu 24/8/23. Trial cows are in lactation 2 to 6, with cow numbers to increase to 22 in a few weeks time.

At start of the grazing trial, cows were 28 days in milk, and at 519 kg liveweight (7 day average, walk-over scales).

Rotation length is 52 days. Currently there is surplus in the feed wedge but as this is the lowest N input farmlet, this provides a buffer.

› Continued from page 2

we don't yet have that. However, there are some guidelines available to help make the decision on whether antibiotics should be used or not. Firstly, use antibiotics if your vet has recommended their use. Antibiotics should also be used if:

Tests indicate bacteria are the cause of illness

- There is blood or mucus in the manure
- The calf has a high rectal temperature (greater than 39.4°C)
- The calf is dull, slow to rise, or not

interested in feeding

If a calf is treated with antibiotics:

- Record each and every treatment
- Record calf ID, date, treatment and the drug's withhold period (found on the label)
- Ensure the calf is clearly marked as 'treated' as per farm protocol (e.g. with paint, neck collar, leg strap etc)
- Ensure the calf is separated from untreated calves to avoid risk of cross contamination and reduce the risk of a treated calf being

accidentally sold

- Ensure equipment used to feed treated calves is clearly identified and never used to feed sale calves even if it is washed thoroughly

Following these guidelines will prevent antibiotic residues in food by ensuring antibiotic treated calves are not accidentally sold.

For more information on calf management, visit <https://www.dairyaustralia.com.au/animal-management-and-milk-quality/calf-rearing>

This article is based on a Dairy Australia fact sheet prepared by Dr Sarah Bolton.

Spring dairy discussion groups

TIA is holding a series of spring dairy discussion groups focussing on how best to manage the season given the forecast of a likely El Nino event. At each discussion group we will have a local farmer share the decisions they are considering plus we will be joined online by a meteorologist from the Bureau of Meteorology (BOM) to discuss tools the BOM has available.

Discussion group dates and locations:

- [Tuesday, 26 September at the Agriculture Centre of Excellence, Freer Farm \(room A1-03\), 182-206 Mooreville Road, Burnie](#)
- [Wednesday, 27 September at Study Centre Circular Head, 12 Nelson Street, Smithton](#)
- [Thursday, 28 September at Scottsdale RSL, 30 George Street, Scottsdale](#)
- [Friday, 29 September at The Empire Hotel, 19-23 Emu Bay Road, Deloraine](#)

Each discussion group starts at 11am and lunch will be provided. Please register by clicking on the event above.

Contact us

Tassie Dairy News is provided free to Tasmanian dairy farmers and is funded by Dairy Australia and the Tasmanian Institute of Agriculture (TIA) as part of the Dairy HIGH 2 project.




For more information, please contact Lesley Irvine on 0428 880 287 or email Lesley.Irvine@utas.edu.au

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Phone:

TIA	(03) 6226 2121
DairyTas	(03) 6432 2233
TasTAFE	1300 655 307

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	@TasInAg @TIADairy
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