



Veterinary Centre MoozNews

Milk Urea Nitrogen – New Trends with the 190 Cap

Mat O’Sullivan BVSc - VETERINARY CENTRE Oamaru



Milk Urea Nitrogen (MUN), provides an indication of dietary crude protein status in a herd. MUN is a by-product of microbial protein/nitrogen breakdown in the rumen. Where there is surplus in dietary crude protein, milk urea will rise. A deficiency will result in a fall in MUN. It is generally considered MUN levels above 19mg/dL indicate dietary protein is not limiting for milk production. Above 25-30mg/dL there is a surplus (which will load up nitrogen in the urine).

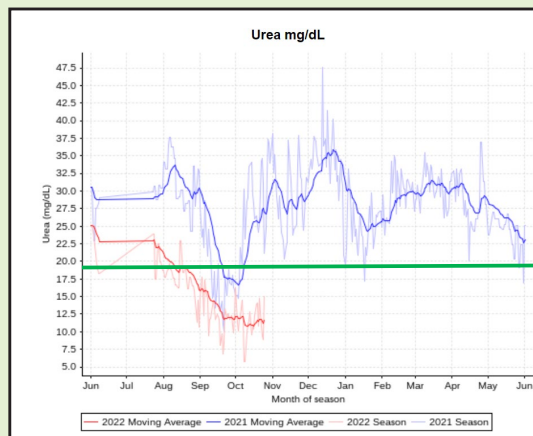
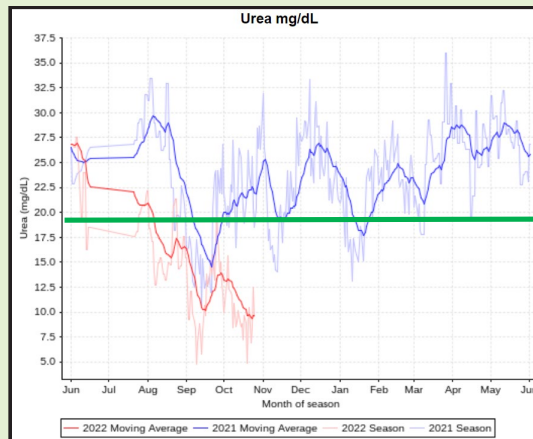
Before the introduction of the 190 Nitrogen cap, we sometimes saw these MUN levels drop below 19mg/dL at the end of the first grazing round, but then sharply increase as cows enter lush second round grass that had significant urea application.

Now into the second season of the 190 cap we are seeing many herds that have low herd MUNs continuing into the second round of grazing. Recent second round pasture analysis in the practice has shown some of these pastures just sitting around 17-18% crude protein (normally >25% CP). Match this pasture diet with low crude protein supplements – e.g. FB bulbs (6-11% CP), wheat (11% CP) and you have a diet which may be production limiting at a time of peak milk expectation.

It has undoubtedly been a cold spring which is limiting pasture growth, but on farms where MUN’s are as low as in the graph below, nitrogen will likely be playing a large part in pasture growth/feed deficit.

In herds where there is no deficit in energy but a restriction in protein, cow production may suffer but weight gain can occur. The exception to this rule will be cows that are genetically programmed to make milk ‘at all cost’ (e.g. overseas Holstein type breeds). These cows will mobilise muscle tissue to support milk production which adversely affects reproduction.

DairyNZ have some good tips for strategic application of nitrogen on their website. <https://www.dairynz.co.nz/environment/on-farm-actions/reducing-nitrogen-fertiliser-use/>



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The Traditional ★ ★ ★
Ham-on-the-Bone
PROMOTION

Yours this season when you purchase indicated quantities of selected drenches from the **Veterinary Centre** by the Big Blue Cross



REPRODUCTION MATTERS

Mat O'Sullivan BVSc – VETERINARY CENTRE Oamaru



Second Round of Mating

The second 21 days of your AI period is just as important as your first. Staff motivation can however drop meaning heat detection rates can reduce.

- Heat detection aids (K-mars, ScratchE's) will improve heat detection sensitivity if scrutiny of tail paint drops.
- If using tail paint use a different colour to paint cows inseminated in the 2nd round of AI.
- Refer to your AI chart if in doubt about

whether a cow is a return. If she was last inseminated 18 -24 days ago there is a good chance she is a genuine return.

- As mating continues the number of cows in sexually active groups (SAG's) reduces. Ensure cows which are AI'd are returned immediately to the herd to form new SAG's to encourage tail paint loss in new cows coming on heat.
- Use paddock checks to increase sensitivity. These should be done 2 hours after the morning and evening shift

Day 24 of Mating Have all the cows been put up?

If a farm has done early intervention with non-cyclers during the first 3 weeks of mating, then by day 24, in theory, the whole herd will have been mated. This is seldom ever the case!

There will be a mixture of unmated cows by this date which will include cystic ovaries, late calvers, missed heats, pyometras and genuine anoestrus cows.

If you have a significant number of these cows it is worth getting them scanned or palpated at day 24-26 and provide them with specific treatments.

Are those Non-returning Cows Pregnant?

On average 10-15% of non-returning cows are later found not to be pregnant. These are referred to as phantoms. If you have a herd history of large condition loss post-calving, metritis, high non-cycler rate, high NEFA at calving, low BCS at mating, metritis and BVD

you have a higher than average risk. Consider identifying cows from the first 2 weeks of AI and scanning these in early December. Early identification and treatment of these cows will reduce the empty rate. Please contact your Prime vet for further details.

The Cost of a Missed Heat

For the average producing farm in our area which AI's for six weeks and mates for a total of 10 weeks the cumulative cost of missing one heat in the first round is as follows:

- 17 days lost milk x (1.4kgMS/day x \$7.50kgMS) = \$178
- \$1,000 net cost of empty cow x 12.5% higher chance of being empty = \$125
- 30% reduction in chance of producing a heifer replacement = \$26
- Less the cost of extra feed above maintenance (17 days x 30c/kgDM x 6kgDM) = \$30

Total opportunity cost = ~\$359/missed heat in the first round.

- **A missed heat in the second round costs increases to approximately \$463 due to higher empty rates (25%) and no heifer replacements!!**



Bull Management

'Rule of thumb' is to have 1 sound bull to 30 non-pregnant cows. Ideally there should be two teams of bulls and these should be changed every second day.

A bull is capable of mating up to 3 cows a day before semen quality drops. The daily work rate in most herds will be the same after the 3rd week as it is in the 5th week as the number of cows coming on heat on a daily basis will be similar. Like-wise the work rate will be similar between the 6th week and the 8th week.

Therefore in a 700 cow herd which is doing 4 weeks of AI, they will need (based on 3 weeks of mating):

- 700 cows x 82% submission rate x 52% conception rate = 300 pregnant, this leaves 400 non pregnant, which requires 13 sound bulls in the herd at all times

In a 700 cow herd which is doing 6 weeks of AI, they will need:

- 700 cows with 65% 6 Week-In-Calf Rate = 455 pregnant
- This leaves 245 non-pregnant, which requires 8 sound bulls in the

herd at all times.

Bull numbers in general can be reduced by about 40% at the end of each cycle.

Remember to ensure that bulls have been both vaccinated and tested clear for BVD.



Measuring Grass Intakes – more than just residuals!



Ryan Luckman BVSc (Dist) MANZCVS (Epidemiology) - VETERINARY CENTRE Waimate

Over the past month, with the transition onto second round grass, we saw a drop in rumination rates on most of our collar farms. On the whole this is to be expected – rumination is largely driven by the fibre in the diet, and as we get into the lush second round growth we see an increase in quality, and lower NDF (fibre). In the first round rumination rates typically sat in the 450-500 minutes per day range. However, this round we have seen many hover just around the 400 minute mark. (see table right)

One of the questions we wanted to answer during this transition was – does this matter? Are they still getting enough energy (ME) intake regardless of this lower rumination rate?

To answer this question we created a “Lactational Energy Calculator” (see below) which assessed the key drivers of energy output (body weight for maintenance, milk production, and walking distances) against the current diet. It then projects the likely gain or loss in BCS over a 30 day period if this was to be continued. Over October we were targeting a gain of around 0.2 BCS units for the month.

	Date	Daily Rumination Average
1	25/10/2022	378.9
2	24/10/2022	450.7
3	23/10/2022	450.8
4	22/10/2022	436.3
5	21/10/2022	445.1
6	20/10/2022	473.0
7	19/10/2022	411.1
8	18/10/2022	375.5
9	17/10/2022	404.9
10	16/10/2022	434.5
11	15/10/2022	417.2
12	14/10/2022	427.6
13	13/10/2022	435.6
14	12/10/2022	430.2
15	11/10/2022	442.4
16	10/10/2022	455.8
17	9/10/2022	452.9
18	8/10/2022	479.4
19	7/10/2022	480.4
20	6/10/2022	487.2
21	5/10/2022	471.2
22	4/10/2022	494.8
23	3/10/2022	445.7

Farm Name	Joe Bloggs				Date	25/10/2022	
	ME	Wastage	kg of Feed	Multiplier	Protein %	Protein (kg)	ME
Grass	12.5	10%	17	11.25	25%	3.83	191.25
Silage	11	25%		8.25	25%		
Grain	13	5%	3	12.35	11%	0.31	37.05
PKE	11	5%		10.45	14%		
Baleage	10	20%		8	17%		
Molasses	12	5%		11.4	4%		
Straw	6	40%		3.6	3%		
Other (i.e DDG)	12.5	5%		11.875	28%		
Average ME of Diet (maintenance & milk demand increases with lower ME feeds)			12.6				
TOTAL DM (kg) Offered			20.0				
TOTAL DM (kg) Eaten			18.2				
Totals						22.8%	228
						Protein %	Total ME
Liveweight (kg)		500	Walk (km) Flat		2.50	Maintenance (MJME)	
Milk kgMS/Cow		2.20	Walk (km) Rolling			56.05	
Ver 3			Walk (km) Hilly/Steep			Milk (MJME)	
						173.8	
						Walking	
						5	
						Total Demand (MJME)	
						235	

Feed Offered vs Demand (%)	Expected Weight Change
97%	-0.18 Kg/Day
-6.56 MJME	-0.17 BCS
NEGATIVE ENERGY BALANCE	Expected BCS Change over 30 days

Lactational Energy Checker

One of the key things we found during this analysis was that almost no-one was measuring their actual grass intake. The adage was that they were “grazing to residuals”, so were eating as much as possible. This statement seemed to hold true regardless of whether farmers thought they were feeding 15kg, 17kg, or 19kg of grass daily.

When we double checked this against entry/exit covers and hectares grazed the reality was that often the actual grass allocation on offer was 2kg+ lower than budgeted. This typically meant that the cows were in a negative energy balance on our calculator (also reflected on milk protein).

On many of our collar farms with lower rumination rates, these rates did appear to be reflective of the lush grass - their diets balanced on the calculators, milk protein was on the rise, and milk production was rising. However, we found it a valuable first step to use the Energy Checker to ensure that we could rule out underfeeding as a contributing cause to this rumination drop.

The Lactational Energy Checker will of course work without collars, so if you're keen to assess your current diet then get in touch with your prime vet. But please first measure your actual grass allocations!!



Hamish Newton BVSc, PhD
Oamaru Veterinary Centre

UdderNEWS



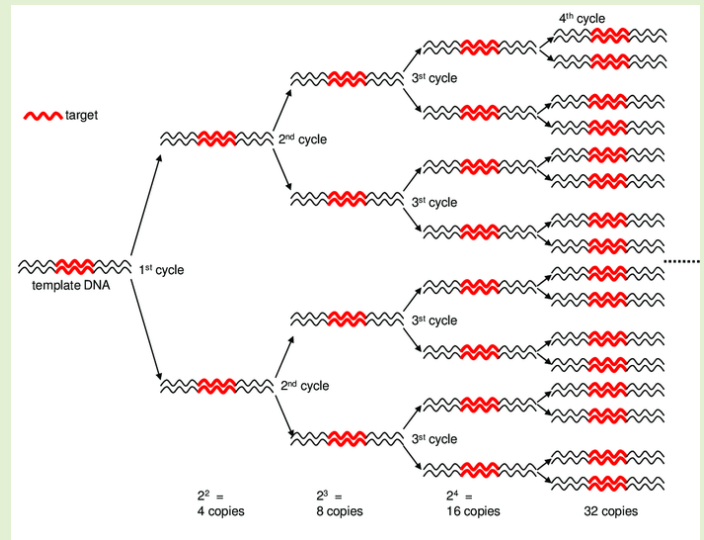
Using the PCR test for mastitis diagnosis

We now have access to a PCR test for the common mastitis bugs and whether the bug is carrying the genes to break down penicillin. This test has allowed us to get a diagnosis of what bug is causing mastitis even after a treatment failure. With traditional culture techniques, trying to culture or grow a bug after antibiotic treatment (even after the milk withhold period has elapsed), is very frustrating as there is a "post antibiotic effect" which makes growing bugs very difficult. With the PCR test the bug does not actually need to be growing. The PCR test makes multiple copies of the target DNA specific to a bug or a gene (if present). It then detects the copied target DNA.

The other great advantage of this technology is that if you are just looking for a Staph aureus carrier a "clean" sample is all that is required rather than a meticulously taken sample. This is because the PCR test will only detect the DNA from Staph aureus as the test does not have the ability to detect the DNA from all the common contaminant bugs so you won't get a result that says "contaminated" which is the lab's way of saying "there were more than three different bugs grown – please take cleaner samples".

The downside of this test is that it can only detect what it is set up to detect, namely Staphylococcus aureus, Streptococcus uberis, Streptococcus dysgalactiae, Streptococcus agalactiae and the most common staphylococcal β -lactamase penicillin resistance genes. It cannot find the more unusual causes of mastitis, which is the great advantage of traditional culture done in a commercial laboratory.

In summary we now can detect the most common bugs that cause mastitis in NZ from a cow that has not cured. If you are getting treatment failures and don't have a pre-treatment sample in the freezer we can now get an answer for you most of the time. We can also use this test to detect Staph aureus carrier cows if you take a clean milk sample, even if there is a bit of poo into the container.



BVD Bulletin

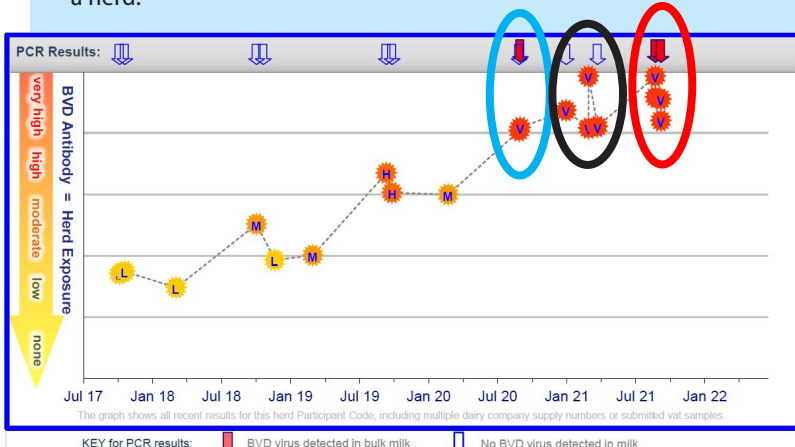
Andrew Muir BVSc BSc (Hons)
VETERINARY CENTRE Oamaru



Bulk milk samples are coming through and there has been the odd farm that has gone positive in the bulk milk samples. The following is an example where they went positive in the bulk milk in the 2020 season (blue circle). The PI was removed from the milking cows and they went negative (black circle). The client did the right thing and tested their replacement 2020 born calves and 2019 born heifers last season. Unfortunately some 2019 born animals were missed and they made their way into the herd in the 2021 season turning the bulk milk positive again (red circle). They have since been found and removed.

Take home points

- If you want to keep BVD out of your herd you have to test replacements.
- Check that there is a BVD record for all animals that are going to enter a herd.



Johne's News

Andrew Muir BVSc BSc (Hons)
VETERINARY CENTRE Oamaru



Sometimes we are asked when is the best time in the season to run a whole herd Johne's test. Last season LIC did a trail to look at how Johne's antibodies change over the season. They showed that for most herds the highest percentage of positive/ high positive animals was seen in March. However if these animals had been tested in December the majority of them were already suspect or positive by then.

The take homes from this are:

- That you are better testing in the middle to the later part of the season.
- If you do test earlier in the season it is very important to ensure that all the suspects are blood tested as well.





We are stocking a new block to go on the feet of lame cows called **High Heels**. This has been designed by a vet working in the Taranaki.

Advantages of the high heels:

- They are quick and easy to apply. The glue is fully bonded within a minute.
- They glue bonds just as fast in cool temperatures and you don't have to mix the glue.
- They are made of rubber which squishes slightly making them more comfortable than rigid plastic or wooden blocks.
- They are 25mm thick as opposed to other products which are thinner. This ensures the diseased claw is kept well off the ground.
- You can position them further back on the claw making the cow more comfortable when they walk on them.
- We have trailed the High Heels on 7 cows on a local farm. These have stayed on from 3 weeks to eight weeks and counting! The claim is 80% retention at 3 weeks.
- High Heels come in a six pack and retail at \$24/block inclusive.
- In order to get them to stick it is imperative you use a grinder disc to create a flat bonding surface for the glue. The recommended grinder disc is the 'Dometec DL soft' that is sourced from Veehof. Our retail cost ~\$350.
- We are happy to show you a few tricks when applying them so that they stick well. The link to the website and instructions is <https://www.highheels.net.nz/instructions>



Veterinary Centre MoozNews EXTRA

Effect of Lameness on Reproduction

Mat O'Sullivan BVSc – VETERINARY CENTRE Oamaru

Lame cows continue to be among the three main problems we are seeing on our clients farms together with mastitis and infertility. Lame cows are clearly visible but often not treated promptly.

At this time of year with peak milk production and AB well under way the economic effect of lame cows can be huge due to lost milk production, lost body weight and the fact that lame cows are less likely to cycle on time.

Lame cows are half as likely to conceive and take on average 40 days longer to conception, compared to their healthy herd mates.

If you need help with lameness contact Andrew, Luke or Ryan at The Veterinary Centre.



Large Animal Vet Technician on the job - Vivienne Tribble



Product of the Month ARREST C

Recommendations

- Double Action Cattle Drench for the control of roundworms, tapeworm, lungworm and adult liver fluke in cattle.
- Clear/White combination drenches are best used in calves under 100kg.

Active ingredients

- Levamisole
- Albendazole

Application

- Oral Drench

Withhold

- Meat WHP 14 days

Available in 5L and 20L

Price **\$0.33** Excl GST
Based on 20L per 100kg



BVD Testing of Calves



Testing your replacement calves is an easy and effective way to nip BVD in the bud on your farm. It means that infected calves can be removed from a herd while they are young and before they cause more problems especially if they come into contact with cows or heifers during mating. If you are considering DNA testing your calves doing a BVD test only requires ticking an additional box on a form if they are over 35 days of age. If you aren't going to DNA test then getting a blood sample or an ear notch is an easy way to check your calves.

Calves Feeding



Calf Weaning

Jess McKenzie BVSc (Dist) - VETERINARY CENTRE Waimate

Making sure a calf is fully prepared before weaning reduces the chance that they will need preferential treatment post-weaning. Preferentially managing small groups of animals to 'catch them up' is time consuming and can be difficult to manage, so it is best avoided by good management early on.

Factors to consider before weaning calves:

- 1) **Rumen Development** – Are they consuming the desired amount of feed? Is its rumen sufficiently developed to be weaned off milk?
 - The only way this can be assessed is by measuring the amount of concentrate or pasture they are readily eating, which should be at least 1kg/day of meal or 2kg/day of pasture.
- 2) **Weight** – Individual calves should reach a minimum weight prior to weaning.
 - No specific weaning weight has been defined by research, however common weights used are 70kg for Jerseys, 80kg

for Crossbreds, and 90kg for Friesians.

- Reaching a minimum weight is an important milestone as it indicates that they are ready to transition from individual to group management.
- 3) **Age** – A combination of weight and age is often good to use when making the weaning decision eg. a minimum of 8 weeks AND 90kg.
- 4) **Ability to Compete Within a Group** – Is the calf able to compete within the group before they are weaned? Any that aren't should be held back until they are.

The aim is to have calves that continue to gain weight post-weaning - they should never lose weight or remain static. Some animals don't thrive post-weaning so it is a good idea to weigh them 7-10 days post-weaning to make sure they have gained weight. Any that haven't may need continued access to calf meal, regardless of weight or age, or examination by a vet.

Timely Reminders & Handy Hints for November

- Pink eye in calves – We are coming up to the Pink eye season in calves. A single dose of Piliguard vaccine given 3-6 weeks before the risk period will significantly reduce the risk of an outbreak.
- Covexin 10 – If you have unexplained deaths in young stock every year despite using 5 in 1 vaccine, you should consider using Covexin 10 in 1 vaccine, which provides additional protection against two other major clostridial diseases – Clostridium sordelli and Clostridium perfringens type A.



ACVM A009028 (Covexin 10), ACVM A008192 (Piliguard)



FREE
Delivery Service



Relocating Calves

Relocating calves can result in growth checks, or be a trigger for other animal health issues including pneumonia, scouring and parasites. Recently weaned calves are at particular risk as they are also undergoing changes in diet, rumen development and are usually younger in age.

A few criteria to consider for relocating recently weaned calves include:

- Fully weaned and off milk for at least two weeks.
- Meet the minimum target weight for their age.
- Transitioned onto a full pasture diet or supplement provided for transition.
- Competing and coping well within the group.
- Drenched and vaccinated.
- In good health.