

DAIRY TALK

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24/7

JULY 2016 | NEWSLETTER



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Cow health recording

Do you ever wonder:

- how many of your milk fever cows actually get pregnant?
- if trial work that demonstrates Metacam improves fertility in your mastitis cows really applies to your animals?
- whether the AI bull you used for your heifers actually resulted in more assisted calvings than the previous year?
- whether you get more calves born dead from those beef bulls that you used last year for natural mating
- if those extra few beef calf dollars are worth it?

Do you have the information to actually answer these questions on your farm?

Good quality data is powerful. Recording cow health conditions at calving is useful for many reasons; *you just need to get into the habit of collecting it.* Use your yellow notebooks (have a copy on the bike and a spare somewhere in case one falls in the trough), use a white board at the cowshed, use the Minda App or your Dairy Diary! It doesn't matter where you record data, *just record it somewhere permanent.* At a later date, when the spring has calmed down, you can enter them into MindaWeb/MindaPro or your other herd recording software.

As discussed in last months' transitioning cows' article, we referred to the targets for cow health issues at calving time. **The immediate benefit of recording means that you can detect a problem early and intervene to prevent future issues.** An example is, if you are running at >2% retained afterbirths, the trigger would be 2 cows in the first 100 cows calved with a retained afterbirth more than 24 hours after calving

NOT just the treated ones but all of them. If you have more than this occur in the first 100 cows calved, you could do some bloods and may find a low selenium problem. Correcting Selenium supplementation is a simple fix that can lead to an almost immediate resolution of the problem. But if you only recorded the very sick cows with retained afterbirths, that is the ones you treated with antibiotics, you may never have realised that you had so many. It could be that it was not until after calving had finished that you found that you had treated a few more cows than usual.

It is important that you encourage all your staff to record everything; you could even create incentives for the most interesting thing recorded! We have never seen a farmer record too much information! **Recording everything** including those wobbly milk fever cows that just get a Calol as they leave the shed **can make a difference to overall outcomes.**



What's new for calf rearing in 2016?



By Katie Denholm, Herd Health Veterinarian

The BRIX refractometer- revolutionise your calf rearing

There is a **new tool** for testing colostrum quality. It's called a **Brix refractometer** and it looks like this:



The Brix refractometer indirectly measures the antibody concentration in colostrum by refracting light. The more solids (antibodies) in the colostrum, the more light is refracted and the better quality your colostrum is. The Brix refractometer is very easy to use and simply involves placing a small sample of the colostrum onto the slide (as shown above). Much like a microscope, you look through the end of the device; you will see a scale reading of between 0 to 32%. Any sample that reads over 22% is satisfactory; any sample that is under 22% does not contain enough antibodies to make the colostrum suitable for feeding to newborn calves.

Why does it matter if the colostrum sample reads less than 22%?

If newborn calves drink pooled colostrum that is under 22%, they won't absorb antibodies into their bloodstream and will be more susceptible to calfhood diseases, in particular- scours.

Calves with low blood antibody levels are said to have Failure of Passive Transfer (FPT) and are more likely to get sick and are more likely to die. They also don't:

- grow as well and struggle to hit target weights
- produce as much milk when they reach the herd as heifers
- get in calf as well as their healthy counterparts

The above are all very good reasons to make sure your newborn calves get the best possible colostrum you can feed them at birth.

In New Zealand, trial work completed on farms from all over the country last season by our team at Cognosco (in collaboration with Veterinary Enterprises), found that first milking colostrum pooled for feeding to newborn calves was of a very poor quality. In fact, fewer than 10% of the samples we collected measured more than 22% on the Brix refractometer. We therefore have a considerable amount of work to do to improve the quality of pooled colostrum that we feed to our newborn calves in New Zealand!

How do we know if we have a problem with FPT in our calves?

Poor colostrum quality often leads to FPT in calves. How do you know if there is a problem on your farm? Ask your vet to take blood samples from 12 healthy calves (when they are between 24 hours old to 7 days old). Ask your vet to test their blood for antibody levels to check they have absorbed enough antibodies from colostrum. If more than 2 of your 12 calves have low antibody levels, you should look at the following colostrum management risk factors:

? Is your colostrum good quality?

? Are you feeding enough colostrum?

? Are you feeding the colostrum quickly enough?

Calves should be fed 10 to 15% of their bodyweight in the first 6 to 12 hours of their birth. Because a calf's stomach capacity is limited to two litres, you will need to split the feed into two. For example, a 40kg calf needs a total of 4 litres of colostrum, split into 2 feeds of 2 litres of colostrum within the first 12 hours of its birth.



How do we improve the antibody level of the colostrum pool for our newborn calves?

If you measure the pool of colostrum for newborn calves and it reads under 22% on the Brix refractometer, you should:

- ✓ Check that the colostrum you are adding to the pool for newborn calves is fresh first-milking colostrum (not mixed with days two, three and four colostrum).
- ✓ Try to minimise the time between calving and when the colostrum is first collected from fresh cows; the antibody level declines really quickly the more time that passes.
- ✓ Look at individual cow risk factors for poor quality colostrum; consider testing individual cow colostrum with the Brix refractometer to make sure only the best cows are selected to contribute to the pool.
- ✓ Consider risk factors like age, breed, mastitis and milk fever as possible reasons that an individual cow is not producing colostrum readings over 22%.

Even if the antibody level is good, bacteria in the colostrum could be problem.

Bacteria in colostrum causes souring and spoilage. Bacteria can also block the absorption of antibodies even if there are enough antibodies in the colostrum. The samples collected from all over New Zealand last season showed that bacterial levels are very high in pooled colostrum for newborn calves. Bacteria typically come from four sources:

- the cow;
- the test bucket;
- the storage vat;
- and the feeders.

Cleaning all your feeding and storage equipment, as well as minimising contamination from the cow herself is the key to keeping colostrum clean and suitable for feeding to calves. Use hot water and detergent to rinse off the fatty residues left by colostrum and rinse off the detergent fully before using your equipment.

Once you are happy that your colostrum is the best possible quality you can achieve, consider preserving it.

Five reasons to preserve colostrum:

- ✓ Calves prefer fresh colostrum and find it more palatable than old stinky stuff
- ✓ Antibodies in colostrum are important for passive immunity in newborn calves and decline rapidly under room temperature, if untreated or stored colostrum
- ✓ Antibodies in colostrum are also important to protect against infection at the gut level in older calves (although they won't be absorbed into the bloodstream in calves more than 24 hours old)
- ✓ Bacterial growth in colostrum prevents antibody absorption in calves
- ✓ Bacterial proliferation in colostrum is unhygienic and leads to rapid spoiling

Preserving colostrum

Stored colostrum is often full of bacteria and smells disgusting! Antibody levels in colostrum rapidly decline when it is left sitting around and we need to keep the antibody levels high and the bacteria levels low to feed calves the best possible colostrum.

How do we preserve colostrum for our calves?

Potassium sorbate - a new way to preserve colostrum in New Zealand:

Historically we have used a wide range of chemical and probiotic preservatives to preserve colostrum in New Zealand; these include Formalin, Hydrochloric acid and Formic acid. However, the issue with these old compounds is that many of them are not approved for use in the food producing industry and some of them are classed carcinogens.

Last season our Cognosco research team completed a study into refrigeration, probiotic yoghurt and a chemical called Potassium sorbate to preserve colostrum. Off the back of this research, there is a new school of thought on colostrum preservation in New Zealand; that is the use of Potassium sorbate. This is a method that has been employed for a number of seasons in the Australian dairy sector to great effect. The chemical has also been approved for use in the food-producing industry for making wine and cheese, and is totally safe for human consumption unlike the acid and formaldehyde-based products which have been used in the past. Better still, Potassium sorbate is inexpensive and works extremely effectively to preserve colostrum even at room temperature. Since very few farmers have refrigeration facilities for colostrum storage this means that a bit of potassium sorbate added to the drum can go a long way towards ensuring colostrum stays fresh and doesn't spoil as readily.

Mixing instructions for Potassium sorbate.

Potassium sorbate comes in a granulated form and needs to be mixed up as a 50% solution; for example 2.5kg to 5 litres of tap water.

Add this 50% solution at a rate of 1% to your colostrum vat; so if you have 500 litres in your drum, you will need 5 litres of Potassium sorbate. Treat each additional volume of colostrum with 1% Potassium sorbate before you add it to your vat. Do not use any Potassium sorbate that has been mixed up for more than a week.

Easiyo yoghurt doesn't work:

The latest research from our laboratory showed that Easiyo probiotic yoghurt is not effective at preserving antibody levels in colostrum and preventing bacterial proliferation. The concept of promoting 'good bugs' in the colostrum to counteract the 'bad bugs' by adding yoghurt has simply been shown to be ineffective; although the practice of adding yoghurt to the colostrum vat has been fashionable for a number of years.

Using temperature to preserve colostrum - refrigeration and freezing:

Refrigeration and freezing of colostrum to preserve it remains a good option, although facilities may be in short supply. Repeated freezing and thawing of colostrum may lead to denaturing of the large antibody molecules we are so interested in preserving, so it is best to freeze and reheat once only, preferably in a large bucket of boiling water.

Calf Milk Replacer (CMR)

Calf milk replacer post-colostrum feeding is an important part of calves' diet during their young lives. It is important to be aware of the energy requirements of young calves to ensure that they are adequately met in order to optimise their growth and reach their full potential. Remember, building the foundation for future milk production and reproductive success starts from day one.

The energy requirements for maintenance can be easily calculated using the following table:

Calf LWT (KG)	MJME required/day
25	4.8
35	6.2
40	6.8
50	8.1
60	9.3
70	10.4
80	11.5
90	12.6
100	13.6



Add to this the energy required for growth, which is 11.4 MJME/kg growth and you'll have the total energy needed per day. For example, a 40 kg Jersey calf gaining 0.8 kg/day will need 15.9 MJME per day. Use this figure to check current diet adequacy, keeping in mind that the energy content of whole milk is on average 3 MJME/L and for meal it varies generally between 11 to 13 MJME/kg DM.

To calculate ME of a product you can use the following formula:

$$((\text{fat}\% \times 9) + (\text{protein}\% \times 4) + (\text{carbohydrate}\% \times 4)) \times 0.4183$$

There are many different brands of CMR available. There are a few things to consider when selecting which CMR to use:

- ✓ Composition of the powder: >19% fat, >24% protein, energy content 20-23 MJME/kg.
- ✓ Good curding is important. The curds are slowly digested into small amounts of fat and protein, which are absorbed. Poor quality CMRs do not curd. This can be tested by adding 5 ml of rennet to 500 ml of reconstituted milk powder at a temperature of 40 degrees. After 15 min, milk replacers containing a high proportion of (skim) milk form a good curd.
- ✓ Do not change between CMRs during the season, as the differences in fat and protein percentages can upset their stomachs and cause scours.
- ✓ Do not overfeed.

Calf rearing is an important yet potentially stressful part of dairy farming with a range of different variables to consider. If you need specialist advice, or if you are interested in a farm specific young stock plan, talk to your local Anexa FVC vet.

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