

Learning from your cousins – part 2

THE 46th Annual Conference of the American Association of Bovine Practitioners (AABP) took place in Milwaukee, Wisconsin, from 19th to 21st September. I was fortunate enough to attend the conference itself plus an excellent two-day pre-conference seminar on "The replacement heifer from birth to calving".

As well as the information I imparted in my first article, I had picked up one or two

valuable lessons by this point. Each day there were scheduled milk breaks. My initial assumption that this was a play on words was unfounded.

In fact, milk breaks consisted of chugging down half litre bottles of flavoured milk. I declined this cultural opportunity but was able to source coffee to keep me going through the long hours. Also, like on the roads it was important to use the escalator on the right in America; one or two embarrassing mishaps meant this lesson was quickly learnt!

Some of the most valuable lessons of my entire trip were learnt when Rob Corbett discussed nutritional management of the milk-fed calf. Most importantly is that a large number of farmers are starving their calves.

A comparison between whole milk and a conventional milk replacer (CMR) 20:20 (protein:fat)

demonstrates that whole milk has 50% more protein and 67% more fat. Table 1 shows the mixing and feeding recommendations of a CMR, whilst Table 2 highlights the difference between feeding maximum and minimum levels of a CMR.

If left on its mother, a 45kg calf will nurse 6-10 times a day, consuming

week and then stopping. If this is high quality starter (22-25% protein) then 1kg/day is adequate; if a typical starter (18% protein), then 2kg/day is needed.

When I go on farms to troubleshoot calf disease in future I will pay much closer attention to nutrition. Incidence often correlates with changes or deficiencies of nutrition. Morbidity and mortality can be reduced by improving nutritional management. Calves have an amazing ability to fight disease if the immune system has the proper fuel. If it doesn't, then that immune system becomes a luxury!

Rob Corbett then considered feeding systems for dairy calves. Table 3 shows water requirements for calves. Calves with limited access to water may show up to 38% reduction in lean tissue weight gain, due to a poorly developed rumen.

We were also encouraged to get the formula of the starter mix to see if it's any good: a lot of American starter feeds have fillers in them such as cottonseed hulls.

This reduces the cost of the starter, it may also increase DMI – but that's not always a good sign. Poor quality starters will have a fast passage rate, be poorly digestible and low in

protein. The best protein source in a starter is soyabean meal.

On a good quality starter and milk, the calf should start rumination at 5-6 weeks. If it starts earlier than this, it is not getting enough milk. How many of your clients know the exact feed, energy and protein content of their TMR? And how many of the same clients know the same constituents in their calf feed? This has to be an area we as vets can help with.

Sandra Godden then discussed capturing the benefits and avoiding the pitfalls of pasteurised milk feeding systems. The potential benefits are:

- improved health due to reduced pathogen transmission v. raw milk;
- improved rate of gain v. CMR;
- improved calf health v. CMR;
- improved economic efficiency v. CMR;
- utilisation of a non-saleable product;
- improved longevity and future performance.

However, like so many

OLIVER TILLING presents the second of his reports of a visit to the conference of the American Association of Bovine Practitioners with an account of some valuable lessons learned



16-24% of its bodyweight as milk. That's 7.6-11.2 litres a day or 0.91-1.4kg dry milk solids. In real terms, a calf left on its mother will consume 2-3 times more milk solids than a calf on 0.45kg, 20:20 milk replacer, which is 0.25-0.39kg v. 0.09kg of protein.

It is essentially impossible to meet the nutrient demands of milk-fed calves at suggested feeding rates of a CMR. If it's the only product available then we must increase the amount of dry matter fed per day by increasing solids, volume or frequency.

Rob Corbett's suggested feeding programme is 15% of the calf's bodyweight in the first week of life, i.e. 2.5L twice daily, increasing to 20% of its bodyweight on day eight – 4L twice daily. If fed in a consistent way – volumes, mixing, temperature and timings – the calf should not suffer nutritional scours.

The concern of the farmer might be the additional cost of extra powder. We have to change his mind-set to one of the cost of kilograms gained, at the stage of life when a calf is at its most nutritionally efficient.

When it comes to weaning, then this should never be forced. If a calf is not consuming enough starter prior to weaning, it will suffer a loss of body condition. Base weaning on DMI, not age. Calves must be consuming adequate starter for three consecutive days before reducing milk fed for a

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Minimum v. Maximum Feeding Levels for a Conventional Milk Replacer

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| <ul style="list-style-type: none"> • 36kg calf • Mixed at 10% solids • Fed at 8% bwt • 0.29kg milk replacer solids/day | <ul style="list-style-type: none"> • 36kg calf • Mixed at 12.5% solids • Fed at 12% bwt • 0.55kg milk replacer solids/day • > 87.5% increase in solids/day |
|--|--|

Table 2.

Age in Months	Litres/Day
1	5-8
2	6-10
3	8-11
4	12-14

Table 3.

things in farming, pasteurisation is not a silver bullet, with more intensive management of the milk feeding system required. Locating the pasteuriser with appropriate water, electrical and drainage supply is the first hurdle, then those operating it need appropriate training with protocols put in place for handling raw milk and pasteurised milk.

The quality of the product is still important regardless of the fact it is to be pasteurised: avoiding contamination of milk at harvesting and transport to and from the pasteuriser is essential.

The pasteuriser must also be monitored regularly – temperatures, cooling, self-cleaning and bacterial counts. An inconsistent milk supply can also be a problem so strategies such as adding saleable milk to the pasteuriser may need to be considered.

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Figure 1. Forage, starter and water – how important is each to the milk-fed calf?

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Mixing and Feeding Recommendations of a Conventional Milk Replacer

- 10-12.5% solids
- 8-12% Bwt/day
 - Common standard is 10% but this assumes a 36kg calf
 - Average calf weight = 41kg
 - Therefore feeding less than 10% bwt/day

Table 1.



Figure 2. Do we know anything about the constituents of calf starter feeds?



Figure 3. Calves will eat plenty of forage if provided but it has no bearing on rumen development.