



## Cold Weather Calf Rearing

With winter upon us and the thermals retrieved from the back of the wardrobe you've hopefully given a little thought to caring for your calves in this cold weather.



Unlike their older herd companions, calves generate far less body heat as their rumen is still developing and therefore they are much more susceptible to the cold. For example a cow with a fully functioning fermenting rumen may be quite happy at temperatures as low as -15°C! Whereas a calf under 3 weeks may start to suffer from the cold when temperatures drop below +15°C. The temperature at which an animal must expend energy to keep warm is referred to as the **Lower Critical Temperature (LCT)**. We humans also have a LCT and just like calves, when we fall below it we start to use up energy to warm ourselves up. That's why we shiver.

In the short term a calf will just about manage, but over prolonged periods, when the temperature struggles to break into double figures, a detrimental effect can be seen as the calf diverts energy from growing and thriving to keeping warm. This is known as *cold stress*. The obvious short term sign is a reduction in daily live weight gain as calories are burnt for heat and in exceptional circumstances a negative DLWG may be seen as calves go to extreme lengths, burning fat reserves and even muscle to keep warm. With feed efficiency at its highest whilst on milk and before the rumen is firing fully, this can be a costly time to not achieve good growth rates and can increase rearing costs substantially.

Reduced growth is not the only problem for our shivering young stock. The calf's defences are under constant attack day in, day out from the billion or so bacteria and viruses living on, in and around it. This ongoing battle requires a lot of energy and the immune system, although important, is runner-up to keeping warm.

*Continued ....*

### January 2018

- Cold weather Calf Rearing
- Post Mortems
- Service Update
- Social Media

### EVENTS

#### Thursday 22nd February – Milk Feeding Calves

What's best, how much, what does the label really mean?

#### June 2018 – Heifer Fertility

Who to breed, when to breed, what to breed them to

#### October 2018 – Benchmarking

How are your calves performing and how do you compare to others in the group?



# Cold Weather Calf Rearing — *continued*

But all is not lost. With careful management and some extra TLC; growth, immunity and heifer health can continue unimpeded throughout these dark winter months. All it takes is a few simple steps:

## 1. Up the calorie content

The first and perhaps simplest thing we can do is give our calf the energy they need to grow, fight off infections and generate heat all at once.

**MORE MILK.** Whether this is more volume per feed, additional feeds or more milk powder\*. Aim to increase volume by 0.33L if feeding whole milk or 50g/L extra milk powder\* for each 5°C drop below 15°C for calves under 3 weeks or below 10°C for older calves.

**MORE FAT.** Whole milk typically contains 18% more energy than the average milk powder. Feeding a milk replacer with a higher fat content will provide more energy without having to feed a lot of extra litres. Have a look on the label and aim for 18% Fat/Oil content

**MORE CAKE.** Calves with higher starter intake by 3 weeks are more resilient to cold weather. Cake should be a minimum of 18% crude protein. Encourage early intakes by providing small quantities of concentrate from day 1 and ensure continuous access to clean fresh water. Chopped forage is preferred as this allows calves to eat more.

## 2. Insulate

Just as you wouldn't fancy a night under the stars at this time of year nor should your calves.

**PROVIDE SHELTER.** Wind-chill and rain exacerbates cold stress so keep calves out of the elements. Test your housing by

getting down at calf level and checking for draughts. Try sitting with them if you have a spare half hour. Are they all huddled up? Shivering? Is there a particular area that they avoid? Your calves will let you know when they are cold.

**JACKETS.** When you're thinking about reaching for the coat and hat it's time to start putting layers on your calves. Prioritise the young (<3wo), the small and the sick. Wash jackets between calves and only put them on a calf that's dry. A min/max thermometer in the calf house is a useful tool for deciding when to get the jackets out and when it's warm enough to pack them away. Jackets are cheap and can save on feed costs.



**BEDDING.** Straw is better than sand or sawdust as it allows calves to nest down. But whatever you are using it needs to be clean, dry and plentiful.

**KEEP IT DRY.** Fix that broken gutter or leaky trough. Ideally move drinkers away from the bedded area and muck out/bed up regularly. Take a look at the drainage and talk to us about air flow and ventilation to help remove damp, stale air. As well

as reducing your bedding and feed costs, good ventilation will reduce pneumonia and scour rates. It's a no brainer.

## 3. You do the warming

Save your calves the trouble and give them a helping hand through these frosty times.

**A HOT BEVERAGE.** Providing warm water (18°C) in cold weather not only heats the calf directly but can also encourage starter intake. Same goes for milk. It should always be fed at 37-39°C (calf body temperature) but be careful not to heat above 45°C as this may damage the proteins.

**CENTRAL HEATING.** It's not only sick and new born calves that'll benefit from a heater. External heat sources like a quartz linear heater can effectively warm your young stock without running up an extortionate electric bill.

So don't get S.A.D about your young stock over winter. Remember it could be worse.... You could be in Minnesota rearing calves at a Baltic -20°C. It's not all bad though – at least there's no flies!

\*Take care if feeding over 160g/L of milk replacer as may lead to nutritional scours



Josh Swain

# Post Mortems are a Must

A recent apparent pneumonia outbreak on one of our seasonally calving dairy herds this autumn proved to have an interesting and unusual outcome.

Over the course of a few days, a large number of both beef and dairy calves ranging from a few days old to a couple of weeks old became lethargic and off their milk.

When examined by both the vet and the farmer it was difficult to establish exactly what the problem was- these calves all had very high temperatures and apparently very mild pneumonia (a bit of coughing and some fast breathing). When I listened to the lungs with the stethoscope they sounded normal- there was no evidence of extensive lung damage.

Calves on this particular holding are left on the cows for up to 48 hours after birth, and there is little intervention during that time. They are then housed in group pens of about 10 calves.

As a significant number of calves were affected we decided that some laboratory testing to try and establish the cause was warranted, so a sick Holstein bull calf was humanely euthanased. On post-mortem examination there was some very mild lung damage, but not much else obviously abnormal.

I took various samples from the calf - including from the lungs. Looking at the samples down the microscope a veterinary pathologist was able to tell that they did not have pneumonia in the classic sense (where respiratory bugs are inhaled then infection is set up in the airways) but had infection in the lung tissue that had spread from the blood stream.

A few days later they had managed to grow the causal bug in the lab - it was Salmonella Dublin.

S. Dublin is not present in all cattle herds, but once it does enter your herd (normally through contact with bought-in carriers) it will generally be present at low levels indefinitely. Healthy animals with a robust immune system will not be affected in endemic herds, but may succumb during periods of immune suppression (e.g around calving).

In this case the bug was probably passed from the cows (immune, but shedding the bacteria) in colostrum and milk to the calves (which did not yet have a functional immune system). Once the calves were group housed they probably passed it between each other in their faeces.

Sensitivity testing at the lab allowed us to make an informed decision about which antibiotic was most appropriate to use for the affected calves. All of the remaining calves survived after a prolonged course of treatment and nursing.

Reducing the spread and impact of this pathogen once it becomes endemic in a herd can involve a combination of individual calf housing,

vaccinating the cows so they pass protective antibodies in their colostrum, pasteurising colostrum/milk and paying close attention to the hygiene of the calf's environment and feeding equipment.

This case highlights a few important points about how you should investigate a disease outbreak in your calves:-

- ◆ Information gained from post mortem examination can be extremely valuable. In this case several faecal samples were negative for Salmonella- meaning that without a post mortem we would likely not have established the cause.
- ◆ The sooner a post mortem is carried out after death, the more likely we are to get meaningful results- after 24hours the carcase degradation makes it more likely that lab tests will be inconclusive, after 48hrs it is very difficult to get useful information.
- ◆ Calves that have not yet been treated are the best to take samples from.
- ◆ Establishing which bacteria and/or viruses are involved in calf disease allows us to target appropriate treatments as well as appropriate vaccinations and other preventive measures. It also allows us to make sure that we are using antibiotics in an appropriate way and reducing their unnecessary use.

Salmonella, along with several other calf diseases, is a zoonosis (it can affect people as well as animals). This demonstrates why it is critical that staff looking after calves wear appropriate protective clothing and pay close attention to personal hygiene (hand-washing) after they handle calves.

In this case the risk to public health was insignificant as all milk produced on the farm was pasteurised pre-sale.



**Tom Shardlow**



Picture- Post-mortem examinations can provide crucial information about the cause of disease. This picture from another post mortem of a calf that died suddenly shows severe pneumonia with normal lung at the top and diseased lung at the bottom. Samples taken from this case allowed us to identify which bugs were present so we could create a tailored pneumonia vaccination programme.

# Youngstock Service Update

The revised service has been running for just over a year and has proved a great success. The farms that are part of the service have seen good improvements amongst their youngstock and continue to measure, monitor and manage.

'It represents astonishing value for money and would highly recommend it to everyone.'

*Patrick Stevens*

- It's hugely cost effective
- You have a personal youngstock vet to discuss issues with
- Three interesting and varied meetings/workshops a year to which you can bring along as many members of staff as you wish
- Two vet tech data collection visits per year
- Two vet visits per year with reports and action plans

All for £42 per month



Remember to keep your eyes peeled for our Twitter and Facebook pages - lots of useful info, dates for your diaries and top tips. We are on Twitter as @SFHCalfClub and on Facebook as Synergy Farm Vets, so give us a follow or a like to stay ahead of the game in 2018

Some highlights from 2017:

Happy New Year from the Youngstock Team



Esme Moffett Tom Shardlow Josh Swain