

COCCI & CRYPTO IN CALVES – TIME TO STOP THE ROT

Any farmer who has encountered clinical coccidiosis or cryptosporidiosis in their calf rearing system, will be familiar with the debilitating effects of the diseases on their animals. Rearers who have seen these diseases previously in groups of animals will know that they are difficult to prevent reoccurring and will be on-guard with every subsequent batch. For farmers who have never before seen the diseases, it comes as a shock when previously thrifty, healthy animals become sick with all the associated clinical symptoms and losses that the diseases bring.

WHAT EXACTLY ARE COCCIDIOSIS AND CRYPTOSPORIDIOSIS?

Both diseases are caused by a protozoal oocyst. These organisms are extremely resilient and are found in vast numbers in the calf's environment, thriving where they have the necessary conditions to maintain and grow in population. Conditions on farms is often optimal for protozoa to survive and thrive with dung, water and some protection from destruction, assisting in their survival. It is also important to recognise that because of their resilience, oocysts can survive for extremely long periods of time, often from one year to the next, unless removed or destroyed. The specific family of protozoa that are responsible for coccidiosis are called ***Eimeria spp*** and there are numerous identified species in farmed animals worldwide, three of which are generally associated with disease in calves in the UK. Cryptosporidiosis is chiefly caused in the UK by ***Cryptosporidium parvum*** which can also infect humans.

Both diseases affect young animals within the first few months of life with the calf ingesting the oocysts from other animals or contaminated surfaces. These developing oocysts then inhabit the lining of the gut where they replicate and multiply within gut cells, causing damage to the gut wall. Typical clinical symptoms include unthrifty animals, compromised feed conversion, loose, watery dung and dirty/stained rear ends. Severe infection is less common but is nevertheless still seen regularly in the UK. Clinical signs in addition to existing symptoms include thin, bloody faeces, often with mucus and shreds of gut wall being expelled. Unchecked, this can continue for over a week with the animal becoming increasingly less-thrifty, losing condition and often running a high temperature. Animals regularly die from the disease or from a secondary infection such as pneumonia, with animals affected by chronic disease usually remaining stunted thereafter, caused mainly by the damage to the gut and a resulting compromise in nutrition. Sub-clinical disease is often overlooked on-farm. Animals that show no visible signs of scour or depression can go unnoticed and are often considered to be performing normally, however a sub-clinically affected animal will be compromised, with a resulting poorer growth rate and long term performance outlook.

CONTROLLING DISEASE

Good maternal transmission of antibodies through colostrum can help a lot to provide some passive immunity in the first few weeks of life however as this passive immunity wanes, the young animal at risk can be exposed to the disease around 4-6 weeks of age. Therefore, excellent colostrum management is essential in providing the first barrier to infection for young animals. It is worth bearing in mind here that male dairy calves can be at higher risk, especially where their perceived value is lower and inadequate levels of colostrum might be fed. Ultimately however, the young animal needs to develop its own immunity to the disease and this can only be done through exposure to the disease in the environment whilst

minimising the infection challenge.

GETTING TO THE ROOT CAUSE OF THE DISEASE

Transmission of oocysts from infected animals to other animals through direct contact of infected manure or fluids occurs often. Examples might be where infected calves pass on the disease to others in a group when they are joined-up, or where an adult cow which ordinarily has a high degree of acquired immunity, passes on the disease around calving when her own immunity can be compromised.

However as already explained, oocysts live in the animal's natural environment where muck, water and protection are available. Apart from direct animal to animal contact, this is the single most common cause of infection (and crucially), without an environment to live-in outside of the animal, they cannot survive. This is where effective hygiene can have a massive impact in preventing disease.

HYGIENE

It is essential to have in place a standard procedure for cleaning and disinfecting calf housing between batches. By designing and implementing a simple, repeatable strategy for hygiene, we will have the best chances of reducing disease challenge.

BEST PRACTICE USING THE CID LINES PROCESS

Step 1: Remove all non-fixed equipment

Take away all removable equipment (buckets etc.) and clean and disinfect them along with the fixed equipment using the same procedure as below.



Step 2: Dry Cleaning

Remove all manure, litter and feed residues from the housing. Burn or compost well to reduce the chances of oocyst survival.



Step 3: Apply Detergent



Apply foam using a foaming lance to all surfaces and equipment using between 2% and 5% (depending on level of contamination) of Biosafe. Leave in contact for a minimum 15 minutes.

Step 4: The main (deep) Clean

High pressure (40-150 bar, preferably hot) water wash at a rate of 12-30 litres/minute and allow to dry thoroughly.



Step 5: Anti-Parasite Control

Spray (or preferably foam), **Kenocox** at a dilution rate of 4%, using 0.4 litres of solution/sqm. Leave in contact for minimum 2 hours. Rinse buckets and feeders before using again.



FARMER CASE STUDY



The Radstock Co-operative dairy at Manor farm, Hardington, Somerset, runs a large Holstein herd, rearing its own replacement heifers.

In overall charge at Manor farm is Ross Edwards who is the Velcourt manager, charged with the successful running of the farm. A key part of growing the business is the need to constantly look for improvements and innovations both big and small,

to move forward. One area that Ross identified as an area of improvement was in the calf rearing unit. Ross explained:

“The calf shed is the original milking stalls but despite its age and design, it was possible to make it functional by improving ventilation and pen design. However, one area where we knew we would make gains was with hygiene”

Despite a system of dry clean outs, pressure washing and spray disinfecting, there were areas of the shed such as eaves and cladding, which Ross knew would benefit from more attention.

“We spoke with our hygiene specialist Trevor Rogerson of Pearce Dairy and he recommended a few tweaks to the system such as separate and distinct cleaning and disinfecting. He also suggested and lent us a foaming lance that we could use to apply product more effectively”

Ross then adopted the protocol firstly of removing equipment and dry cleaning followed by foaming-on Kenosan cleaner. Ross commented:

“We foamed the Biosafe around the whole building, roof to drains. The Biosafe clung really well to the surfaces and after leaving it to loosen the muck, we washed it off as part of the power wash-down”

The results were impressive with both fresh and very old dirt and

muck coming-away with ease (along with a few cobwebs!) After allowing time to dry-out, the same foaming lance was used to apply Kenocox. He added:

“Whilst Kenocox can be sprayed-on, applying as a foam means that there is none of the run-off that you see with a spray. The foam penetrates deeper as well and it’s much easier to see what’s been covered. We used the same process on all the equipment as well so all we needed to do at the end was wash out the buckets and feeders before putting the pens back together again. It’s also a real benefit for us to know that Kenocox meets all food and milk quality standards and because of its speed of kill, we can restock within 2 hours”.

Since adopting the new protocol, disease incidence has been minimal. Ross explained:

“We have some minor issues to overcome where there are sources of disease away from the calf unit but the system for calf hygiene that we now have in place, mitigates the risk to a level we can manage whilst we address these other areas”.

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