



Diarrhoea (scour) in adult cattle

We have had a number of queries so far from farms that have been having problems with diarrhoea in milking dairy cows this winter, affecting cows at all stages of lactation, parity and feeding rates. Cows are milking below expectation, with no obvious predisposing factors underlying the diarrhoea on the farm. Anecdotally the onset of the scour was associated with changes in silage clamp or new feedstuffs, but nothing was ever proven!

Herd outbreaks of diarrhoea can be caused by:

1) Infectious causes of diarrhoea

- **Winter dysentery (coronavirus).** This causes herd outbreaks of explosive diarrhoea during the winter, which may contain some blood. It rapidly spreads through the herd, and generally resolves over 1 – 2 weeks.
- **Salmonella.** Cows are often severely ill with Salmonella, especially freshly calved cows and calves. Bloody diarrhoea is often seen.
- **Liver fluke.** Mainly causes diarrhoea in severely infected individual cattle, although most of the rest of the herd will be in thin BCS.
- **Individual cows.** Other causes of diarrhoea such as Johne's Disease tend to affect individual cows, rather than herd outbreaks.

2) Non-infectious causes of diarrhoea

- **Subacute rumen acidosis (SARA).** Forage shortages have resulted in high levels of concentrate feeding on some farms to compensate, which may result in acidosis. Maize silages have also been high in starch.
- **Toxic / irritant feedstuffs.** Gross mould contamination, mycotoxins, high levels of specific minerals (eg. molybdenum, magnesium) and high levels of protein can all cause diarrhoea, but are difficult to diagnose.



As a general rule, most herd outbreaks of infectious diarrhoea tend to resolve within a month, whereas nutritional causes tend to be ongoing but not as severe in terms of cow health problems. However, all ongoing causes of diarrhoea will reduce nutrient absorption, milk yield and cow BCS (and so future fertility). If the herd is affected by ongoing issues with diarrhoea, then:

- **Get your vet to test cattle** for infectious causes such as Salmonella and coronavirus.
- Check the overall diet for **risk factors for SARA**: forage intakes, Forage : Concentrate DM ratio, and intakes of effective long fibre.
- A **metabolic profile blood test** can help to investigate potential causes such as energy : protein imbalances or specific minerals.
- If infectious causes and SARA are ruled out, then suspicion often falls on **specific forage quality issues**. Forage mineral analysis can be helpful. If thought to be a high risk (eg. high DM silages), adding mycotoxin binders for a two week trial period is another option. Otherwise, diluting out potential "problem" forages or feedstuffs in an exclusion trial by substitution with other forages such as big bale silage is often the last resort



Energy balance in ewes

With spring lambing fast approaching, we have started receiving blood samples for metabolic profiling from ewes in late pregnancy. As usual, energy balance in these early lambing flocks looks good. However, we typically see a deterioration in flock energy balance as we start to receive blood samples from lower input flocks, particularly those where winter feeding has been more marginal or forage quality is poor.

We measure energy balance in ewes by looking at **blood beta-hydroxy butyrate (BOHB) levels**. Ewes with elevated BOHB levels have a poorer energy balance and are more likely to develop twin-lamb disease, whilst **the death rate in their lambs is higher**. Experimental studies have shown that various diseases, litter size and feeding practices all affect energy balance in ewes. However, there is relatively little field data to help us to understand which factors are most likely to affect energy balance of ewes on commercial farms.



A recent study from Canada, published last year (Prev. Vet. Med. 2018, 154, 18-22) has helped to shine more light on some of these factors. Researchers looked at worm burdens, ewe body condition, teeth, udders, litter size and a variety of feeding practices. Unsurprisingly, **litter size** came out as the most important factor affecting energy balance, **with ewe body condition being the next most important factor**. This just goes to highlight the importance of ensuring that body condition is carefully monitored between mating

and lambing, and that **ewes are drafted and fed according to body condition** to ensure that they are not too thin or fat at the point of lambing (target BCS 2.5 - 3.5 units).

Surprisingly, teeth abnormalities and forage trough space did not affect energy balance, hence suggesting that the study farms were good at ensuring that ewes that are struggling due to poor teeth are not mated and that access to forage is generally good. However, it should be noted that this study was done in Canada with different forages. In the UK, **insufficient access to palatable good quality forage** is often more of an issue in our sheep flocks.

The other finding from this study was that the presence of worm eggs in the ewes' faeces was associated with poorer energy balance. We hear a lot about protein and immune function in pregnant sheep, however, this study adds to the evidence that **energy balance is also important for good immune function!**

Given the relatively mild winter to date, ewes will hopefully be approaching lambing in good body condition. However, now is a good time to think about the energy balance of your ewes. A quick check of the following will help to ensure that your flock approaches lambing in good energy balance:

- Are thin ewes (under body condition 2.5) being offered additional concentrate?
- Is the energy density of the forage appropriate for twin and triplet bearing ewes (minimum of 10 MJ ME/kg DM)?
- Is there sufficient feeder space for the number of ewes in the flock (minimum 15 cm per ewe for *ad lib* systems)?
- Are the forages on offer always fresh and palatable?

With the peak risk for twin-lamb disease around 2-3 weeks before lambing, taking blood samples from 15-20 ewes around this time can help to identify and **address problems with energy balance, before they impact on the flock's performance at lambing time.**