

Hello and welcome to the October Newsletter. We have had a busy September – lots of clinical work, lots of TB testing, and Tom has been very busy with AI and embryo work in sheep. Sian and Russell held a second, very well attended medicines meeting 2 weeks ago – hope all the attendees got a lot out of it. Morgan is just back from her honeymoon – only a year late, not bad for farmers! They had a fabulous fortnight in Australia – it must be a bit of a shock to come back to autumn.

Unfortunately, we are very busy with TB testing, with a few larger tests being triggered with little notice. Please will you book your tests in as soon as you can so that we can accommodate your choice of date as much as possible. Also, a little reminder about the BVD blood testing – this is currently FOC and optional until the end of the year – after which time it is likely to be compulsory and you will have to pay. If you have not had the screening 5 animal blood test done in the last 10 months, let us know and even if you are not due a TB test before the end of the year, we will try to pop in when in your area.

This month Russ is reminding us about causes of down cows, milk fever being the most common. Read on...

Mary

Milk fever

Milk fever occurs because of a sudden increase in calcium requirement for milk production, that cannot be matched by the cow's ability to absorb calcium from the gut or mobilise her body reserves.

Initially, cows will be slightly wobbly, with fine muscle tremors. Untreated, this muscle weakness will progress, leading to a down cow, unable to stand. The cow will often have cold extremities (nose, ears and tail) and will also have gut stasis – leading to stiff faeces and bloat. An S-shaped neck is a common finding, but severe cases will often tuck their head against their flank.

However, not all down cows are milk fever. They should also be checked for mastitis, metritis and injury, as these conditions can look like, and occur alongside, milk fever.

Milk fever also is a trigger for many other conditions – delayed / slow calving, uterine prolapse, retained membranes, metritis, mastitis and displaced abomasum. For some conditions (e.g. DA), the risk remains even after successful treatment.

Treatment options for milk fever depend on how badly affected the cow is. For standing cows, oral calcium (either bolus or drench) is the preferred treatment. Commercial products containing calcium chloride and calcium sulphate will raise blood calcium in 30 minutes – equivalent to putting half a bottle i/v. They also provide a depot for continuing absorption, as well as activating the cow's own pathways for calcium mobilisation (more on this later).



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Down cows should be treated with intravenous (i/v) calcium. Each bottle contains 12g of calcium, which is enough to restore blood calcium even in the largest, most severely affected cows. Giving a second bottle can be harmful – it will switch off a lot of the mechanisms that mobilise the cow's own body stores, making relapses more likely, and in extreme cases may even stop the cow's heart. Subcutaneous calcium alone is unreliable in these cows as rates of absorption vary widely.



Once the down cow is able to hold her head up and swallow normally, giving oral calcium is the best way to prevent relapses. Each dose will contain 40-50g of calcium, equivalent to putting 4 bottles subcutaneously (s/c).

Prevention of milk fever usually relies on the 'DCAB' principle. This isn't nutritionist witchcraft but instead is simply an expression reflecting how much sodium, potassium, chloride and sulphur is in the diet. Reducing the DCAB makes the cow's body slightly acidic. This causes her to excrete more calcium in her urine and also activate the mechanisms for absorbing calcium from the diet and mobilising her bone stores.

So, how does this work in practice? Firstly, we need to reduce intake of sodium but more importantly potassium. These are highest in lush green grass (either in a field or a clamp), which explains why peaks of milk fever are seen calving outside in spring and autumn. Many dry cow rations will use bales, 2nd cut or wholecrop, with added straw as forages, as these are inherently low DCAB. If you are lucky enough to get brewer's grains, then these are also great for dry cows – they are a low DCAB, high palatability feed.

To this we add chloride (remember the calcium chloride in the bolus?) – usually as magnesium chloride or ammonium chloride, which further reduces the DCAB – if you check bags of dry cow rolls, you will often see these added in. The magnesium itself is important, as the cow needs it to be able to switch on her calcium metabolism properly, so dry cows low in magnesium will suffer high rates of milk fever. There is a limit to how much chloride can be added, due to the revolting taste (try a mag chloride flake yourself...), so forage choice is the key to a successful diet.

Monitoring milk fever risk is simple – we just measure urine pH, with the 'sweet spot' around pH 6.5. Much higher and the cow is not acidic enough to reduce the risk, much lower and she'll be so acidic that she feels ill and won't eat. Blood samples can also be used but need to be collected 12-24 hours post calving to be useful.



Even with the best control, some cases of milk fever will occur, with a target of <3% of cows needing treating (standing cases included) in high yielding herds. Screening data show that 25% of first calvers, 40% of second calvers and 60% of third calvers and above will have low blood calcium after calving. Routine calcium supplementation is therefore recommended in all older cows. Ideally, this will be oral calcium at calving, followed by a second dose 12 hours later. Subcutaneous calcium can be used but the lower dose of calcium given means less support for less time, making it less effective. Intravenous calcium should not be used as a prevention, as it pushes the blood calcium level so high it will switch off all the cow's natural mechanisms for the next 48 hours, dramatically increasing the chance of delayed onset milk fever.

If you would like to discuss milk fever treatment or prevention please contact the surgery or get in touch with Russell, this month's author.

Office opening hours

Monday – Friday (Except Bank Holidays)

8.30am - 5.30pm

Emergency out of hours service

Weeknights 5.30pm - 8.30am

Saturday & Sunday all day