A VET'S VIEW

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THE management of cows around calving is widely discussed within dairy farming. This transition period, is the three weeks either side of calving. Many metabolic changes occur during this critical part of the lactation cycle.

One of the most significant changes is the cow's calcium demand. This jumps from 40g/day a week before calving, to 100g/day[1] a week post-calving. Inadequate calcium in the blood (hypocalcaemia) is common at this time, and is seen as either classic 'downer cow' syndrome or a sub-clinical disease.

Hypocalcaemia is a 'gateway disease' meaning it opens the door to many other periparturient diseases. Ketosis is eight times more likely, LDAs are almost five times more likely and retained foetal membranes are three times more likely[2,3].

Management and nutrition can be structured to help prevent these issues. Traditional milk fever prevention recommends restricting calcium intakes in the late dry period. This allows the dry cow to adapt to low calcium levels, begin to mobilise her own reserves and is prepared when the increase in demand occurs. In practice, this method is difficult to achieve – the levels of calcium needed to effectively lower blood calcium is 20g/day and most forages fed in a normal dry cow ration contain 60g/day[1]. Using a calcium binding agent to restrict calcium availability can be effective, but is costly.

Milk fever can also be prevented by supplementing the dry cow diet with large quantities of anionic salts which alter the dietary cation-anion balance (DCAB). Anionic salts, such as magnesium chloride, alter the cow's pH, which allows them to mobilise more calcium.

A full DCAB ration consists of feeding large quantities of anionic salts with the normal dry cow ration. However, this places the cow in a state of mild metabolic acidosis and requires regular urine pH tests to ensure levels are not too high or too low. Such high levels of salts can reduce voluntary dry matter intakes[1].

A partial DCAB ration consists of feeding smaller amounts of salts with feeds such as forage maize, wheat straw and brewer's grains, known to have low DCAB values.

Another approach is to give all at risk cows a Bovikalc® calcium bolus at calving. Bovikalc® contains more than three times as much calcium as a bottle of 40 per cent calcium and also has a similar effect to a partial DCAB ration by aiding calcium mobilisation and prolonging its effects[4].

When it comes to managing milk fever, consultation with your vet and nutritionist is necessary to achieve the most successful outcome.

References: **1.** *Husband (2005) In Practice 27, 88-92.* **2.** *Houe et al (2001) Acta Vet Scanda 42, 1-29.* **3.** *Mulligan et al (2006) Irish Vet J Vol 59(12), 697-702.* **4.** *Sampson et al (2009) Vet Therapeutics Vol 10, 3.*