Milk fever – quick, preventative action is the key to control

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Modern dairy production is intensive and highly commercialised, meaning the consequences of diseases can have a pronounced effect on production levels and profit.

Milk fever is one of the most prevalent diseases on dairy farms today, yet some nutritional solutions currently available present a number of practical problems for the farmer. In light of this, Trouw Nutrition International has launched Calfix, a unique and effective feed based solution that reduces the risk of milk fever. This article looks at the disease and why it is so important for farmers to act early.

About milk fever

Milk fever is a metabolic disease associated with excessively low blood calcium levels. The disease mostly affects dairy cows after calving, as their metabolism is unable to react to the steep increase in demand for calcium required for milk and colostrum production. Although most cows are slightly hypocalcaemic after calving, the blood calcium level of a healthy animal should not fall below 2.0 millimoles per litre.

Milk fever occurs when the cow's metabolism is not able to absorb enough calcium from the intestines or mobilise it from the bone quickly enough, resulting in extremely low blood calcium levels (less than 1.5 millimoles per litre). This process happens very rapidly, with 90% of cases occurring in the first two days after calving.

Two variants

There are two variants of milk fever: subclinical and clinical. Subclinical milk fever is a less advanced form of the disease and its consequences are less severe.

Many incidences of subclinical milk fever go undiagnosed due to the absence of clinical symptoms. As a result, subclinical milk fever can also have an acute effect on production, leading to cases of mastitis, retained placentas, ketosis and increased culling rates of dairy cows.

A number of factors can influence the chances of an animal developing milk fever.

Animals fed on lush pastures or on diets high in calcium and/or potassium in the period before calving have an increased risk of contracting the disease. The presence of high levels of calcium in feed reduces the cow's active calcium metabolism, leaving it more susceptible to the disease.

Clinical milk fever is widespread with 7.5% of cows on an average dairy farm contracting the disease. As a general rule, it can be said that the number of cases of subclinical milk is about four times higher. With such high incidence rates come hefty consequences for production and profit.

A study undertaken by Trouw Nutrition International reports that the average cost to the farmer for milk fever and the associated cost of related production diseases is about €175-200 per cow per year.

Milk fever is a common problem with 90% of cases occurring in the first two days after calving.

Three strategies

With so much at stake for farmers, quick preventative action is key. As such, it is the duty of feed specialists to develop efficient and viable dietary solutions for the disease.

Three of the most popular solutions, how-

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ever, are not completely effective. One approach is to feed the cow a very low calcium diet before calving. This trains the cow's metabolism to access calcium from the intestines and bones. This method can lead to difficulties with ration formulation and, as such, is often not a practical solution to reduce the risk of milk fever.

The use of anionic salts is another approach traditionally used to combat the negative effects of low blood calcium levels. Cations, like potassium make the cow's blood more alkaline (increased pH), which decreases the calcium regulatory system's ability to mobilise bodily stores of calcium.

Anionic salts such as calcium chloride or magnesium sulphate counteract this by making the blood more acidic. Fed to cows in the period before calving, the anions stimulate the metabolism to make calcium more available, improve calcium regulation and reduce the risk of milk fever. Anionic salts, however, need a very exact approach to ensure effectiveness.

Commonly used in continental Europe, drenching or pasting involves boosting the cow's blood calcium levels just before and after calving. Although viable for use in herds suffering from the metabolic disease, this approach requires the time of calving to be accurately predicted, is highly time consuming and is less cost effective than nutritional solutions.

An innovative new approach

CalFix, developed by Trouw Nutrition International, is a dietetic feed containing a unique calcium binder with additional nutritional elements that support liver and rumen function, fertility and immunity. CalFix does not impair feed intake, in trials it even improved feed intake by about 10% compared to a control diet. Fed to the cow in the three weeks before calving, CalFix's unique calcium binder retains dietary calcium in the small intestine, rendering it unavailable for absorption.

This prepares the cow's metabolism for the increased demand for calcium around calving in two ways: by making calcium absorption from the intestines more efficient and by stimulating the calcium mobilisation from the bone.

By creating an active calcium metabolism around calving, the risks of low calcium levels are greatly reduced. The product is available in different variants to suit local market conditions. A controlled study carried out at the University of Berlin on 113 multiparous dairy cows, measured blood calcium levels weekly before calving, at calving, then six and 12 hours after calving and three and 28 days into the lactation period.

The findings demonstrate that at calving, the blood calcium levels of the cows supplemented with CalFix were significantly higher than those of the control group (2.0 millimoles per litre and 1.85 millimoles per litre respectively).

This trend continued throughout the duration of the study, proving that CalFix improves low blood calcium levels and reduces the risk of (sub) clinical milk fever.

Similar results were found at a trial at Nutreco's Ruminant Research Centre and, in addition, improved feed intake after calving was reported. Its practicality and effectiveness makes CalFix the perfect choice for farmers keen to reduce the risk of sub clinical and clinical milk fever.

Summary

As milk fever occurs at the most productive period of a lactating animal, it is vital that the farmer acts early to prevent the far-reaching consequences of the disease. To this end, reliable, safe and effective dietary solutions such as CalFix are a viable way to safeguard production.

Having been recognised by the animal production industry with a silver innovation award at Eurotier 2010 and by the DLV (Deutsche Landwirtschaftsverlag) as 'innovation of the year 2011' in the feed ingredients category; CalFix is an example of Trouw Nutrition International's commitment to providing the customer with innovative products that meet their needs. ■

References are available from the author on request