Prevention of Milk Fever

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Milk fever is a common metabolic disorder in dairy cattle that generally affects older, high producing cows. It may also be referred to as parturient paresis or hypocalcemia. The majority of milk fever cases occur within 48 to 72 hours of calving although some may occur in late lactation. It is estimated that 3 to 8% of cows are affected by this disease with some herds having a prevalence as high as 25 to 30%.

Symptoms appear when blood calcium levels are low, hence the name hypo (low) calcemia (calcium). At first, cows experience muscle tremors, lack of appetite, and unsteadiness. Eventually, cows will be unable to rise, body temperature will be low, and constipation may occur. Death can occur if the cow is not treated promptly.

In order to understand how to prevent this condition, one must understand why it becomes a problem. The onset of milk production drains on the animal's blood calcium levels and she is unable to replace this calcium. The body loses its ability to mobilize reserves of calcium in bone and absorb calcium from the gastrointestinal tract. As a result, hypocalcemia affects the cow's muscle contractions and rumen motility.

The key to prevention of milk fever is management of a close-up dry cow group. Alfalfa, a feed high in calcium and potassium, should not be a major ingredient in close-up dry cows diets. In the past, programs have been aimed at reducing calcium levels in feed. Recent research indicates that the key is potassium not calcium. The first step in keeping potassium levels down is to change fertilization practices to prevent high levels in forage (grasses and legumes) intended for use in the close-up dry cow program. About two weeks before calving, a transition diet should be used paying close attention to the amount of sodium, potassium, and chloride in the diet.

Adding anionic salts into the diets of transition or close-up dry cows is another control method. They should be added into a grain mix or TMR mixture due to low palatability. Furthermore, they should not be fed throughout the whole dry period. To determine when anionic salts are effective, testing of the urine can be used. Urine should be targeted at a pH of 6.5 to 5.5. Anionic salts work by increasing the cow's ability to release calcium. Like any other feed additive, determining proper levels of anionic salts needed requires a forage analysis for sodium, potassium, chloride, sulfur, calcium, and phosphorus and the pH of the urine needs to be monitored.

To a limited extent, administering a calcium gel immediately after calving also is used as a preventative measure in high-risk cows. A calcium chloride gel can lead to rapid, effective increases in blood calcium levels. This method can be rather expensive but is effective. Care must be taken to ensure that the cow does not aspirate the gel. Nevertheless, the best measure of preventing milk fever remains regulating calcium and potassium levels in the close-up dry cow diet.

Prevention of milk fever is economically important to the dairy farmer because of reduced production loss, death loss, and veterinary costs associated with clinical cases of milk fever. When farmers think of milk fever, they generally think of the symptoms mentioned earlier. Many cases, however, do not show the clinical signs of milk fever. This condition is referred to as subclinical hypocalcemia. Because of calcium's effect on smooth muscle function, rumen function and uterine motility are affected by subclinical hypocalcemia. Thus, milk fever can also lead to a multitude of digestive disorders and reduced reproductive performance. Milk fever has been linked to calving problems, retained placentas, uterine prolapse, metritis, mastitis, poor appetite, displaced abomasums, ketosis, and delayed return to estrus.