

Magnesium Deficiency

John H. Kirk, DVM, MPVM

Veterinary Medicine Extension

University of California Davis

Tulare, CA

In the most recent newsletter from the California Animal Health and Food Safety Laboratory, it was noted that magnesium deficiency had been diagnosed. They reported that a number of downers and deaths had occurred on 2 dairies. The affected cows were 30-50 days in milk when they became unable to stand, had muscle tremors and some were hypersensitive to touch and sound resulting in titanic seizures. Magnesium deficiency in cattle is also known as Grass Tetany or Grass Staggers as it commonly occurs in pastured cattle.

This conditions results from two distinct conditions. Grass Tetany occurs when cattle are allowed to graze, fast growing pastures. This may be the situation with pastured dairy heifers or dry cows. The pastures may be natural grasses or seeded cereal grains. These conditions may be present at this time in the central valley due to recent rains following a long dry spell. Most often the signs of this deficiency will occur within 1 – 6 weeks after the cattle are introduced to these risky pastures.

The second set of conditions occurs with housed dairy cows when the ration becomes low in magnesium. This particularly critical when the ration is also low in energy and high in protein. Many times this occurs around calving and mistaken for Milk Fever, however, it can happen at other times during lactation as noted in the CAH&FS report.

The clinical signs for magnesium deficiency may include the following:

Restlessness

Separation from other cows in the group

Hyper-reactivity – aggressiveness, violent movements

Incoordination – exaggerated movements, inability to stand

Tetany – stiffness of legs and neck particularly when they fall

Convulsions, coma and death

Some animals may be found dead without observed signs

When presented with this array of clinical signs, in addition to magnesium deficiency, your veterinarian will probably consider lead poisoning, various plant poisonings, nervous ketosis in dairy cows and even rabies. The diagnosis can be confirmed in live animals by analysis of a blood sample for the level of magnesium. In housed animals, the ration can also be analyzed for the magnesium content.

Magnesium deficiency is usually treated with intravenous fluids containing both magnesium and calcium. The calcium is needed to help control abnormalities in the heart rate. About 80% of the treated cattle recover with a single treatment. Those that relapse

are often given a second round of magnesium and calcium injected under the skin or with oral doses of magnesium oxide. Repeated blood analyses should be undertaken for animals that fail to respond or continue to relapse following treatment.

In areas where magnesium deficiencies have been known to occur, preventive measures may be taken to increase the soil or pasture content of magnesium or to provide additional magnesium to cattle grazing the pastures. For pastures, they can be supplemented with luxury levels of magnesium. Adjusting soil pH will also enhance availability of the magnesium for plant uptake. For cattle supplementation, an intake of 0.2% of magnesium on a dry matter basis will protect most cattle. This can be in the form of magnesium oxide at 2 oz/day or magnesium carbonate at 4 oz/day. In some cases it is helpful to provide the supplemental magnesium in a molasses lick or in grain to insure adequate intake.

This year in particular if you are grazing heifers or dry cows, it may be a good idea to consider supplementation of these cattle with magnesium to prevent the occurrence of Tetany and loss of cattle. In any case, be alert for the signs of magnesium deficiency in pastured cattle when introduced to rapidly growing pastures. Also consider magnesium deficiency in housed cattle when “milk fever” signs appear at times other than around calving. In either case, your nutritionist or veterinarian can help with the diagnosis and to formulate a preventive plan.

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