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# Milk Fever (Periparturient Hypocalcaemia)

## Clinical Picture

Hypocalcaemia is usually seen in high producing dairy goats one to three weeks post-kidding and is much rarer than pregnancy toxemia. Initially the doe is ataxic, nervous and hyperactive but quickly becomes sternally recumbent. The doe stops eating and the ears are cold. The pupils are dilated and respond very slowly or not at all to a flashlight being shone directly at them. The head may be turned back to the flank. Sometimes the hind legs are splayed out behind the doe. The heart is very hard to hear (or feel) and beats quickly and weakly. Death follows bloat, regurgitation of rumen contents and aspiration.

The course of disease can be as little as a few hours and occasionally may occur as "sudden death", i.e. the doe is found dead in the morning. Serum calcium levels are decreased, usually less than 1.7 mmol/L (normal 2.1 - 2.8 mmol/L). To help in diagnosing hypocalcaemia at a postmortem examination, serosanguinous blood obtained from heart clots can be centrifuged and the serum analysed for Ca<sup>++</sup> levels. The values obtained will accurately reflect pre-mortem values as long as haemolysis and putrefaction have not yet occurred.

Again, this disease may look like other diseases and the doe must be examined by a veterinarian in order to differentiate from polioencephalomalacia, advanced grain overload, toxic mastitis, lead poisoning, listeriosis, etc.

## Treatment

Clinical cases of hypocalcaemia are usually treated with calcium boroglu-

conate solution (20 mg Ca<sup>++</sup>/ml) iv and sc. Response should be dramatic. The doe usually starts to shiver and brightens up by the time treatment is finished. If she does not, it may be that the diagnosis is incorrect or is complicated by another disease. It is important that IV treatment only be given in the face of strong clinical evidence of disease. Calcium can easily cause death if given intravenously to an animal with normal calcium levels.

## Prevention

Long term under nutrition is required for primary hypocalcaemia to develop. Goats require calcium-rich diets after kidding. Alfalfa hay can provide this. Cereal crop forages such as wheat or oat hay are very low in calcium (0.15% and 0.24% dry matter (DM) basis respectively) as opposed to alfalfa hay (1.4% DM) and should be avoided unless the ration is balanced with other calcium sources. Over-feeding of calcium in late gestation by feeding alfalfa without balancing with anionic salts has been associated with hypocalcaemia in cattle. Feeding an anionic ration in late gestation will also improve calcium absorption from the gut and from the bones. The ration in late gestation and early lactation should also have a calcium:phosphorus ratio of greater than 1.5 to 1. Prevention of pregnancy toxemia will also help to prevent hypocalcaemia as well.

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