

## KETOSIS OF CATTLE (Acetonemia)

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Ketosis is a common enemy of milk cows. It is a disease of the metabolism-regulating system and is characterized by the accumulation of acetone-like substances in the blood stream. Symptoms usually are brought on by the rapid depletion of blood sugars in the early stages of milk production.

The feeding of large amounts of rich concentrates seems to predispose cows to ketosis, especially during the first six weeks after calving. However, ketosis can occur at any stage of lactation and occasionally will occur in dry cows heavy with calf. This disease is most prevalent in the months of September to May. Bulls or steers are not affected.

Few deaths can be attributed to ketosis, but many cows that are not treated become valueless because of cessation of milk flow and extreme loss of flesh.

The disease manifests itself in three ways, depending to some extent on the stage of lactation.

1. *DIGESTIVE TYPE* - occurs within ten days to six weeks after calving. Usually it strikes with the following symptoms:

- a. Loss of appetite.
- b. Marked decrease in milk flow.
- c. Arched back, lowered head and half-closed eyes.
- d. Twitching of eye lids.
- e. Constipation and suspended rumination.
- f. Occasional staggering and knocking of feet may be noticed.

This type usually runs a course of one to three days if promptly and properly treated. Diminished milk flow may persist for several weeks if treatment is delayed. Accurate diagnosis is essential as this type is easily confused with hardware disease (traumatic gastritis), indigestion, impaction, or inflammation of the intestines.

2. *NERVOUS TYPE* - usually occurs later in lactation period than digestive type and is more severe. Comes on suddenly with complete loss of appetite, marked decrease in milk flow and is accompanied by nervous symptoms, such as:

- a. Reckless, undirected, delirious movements with wild expression and bulging eyes.
- b. Rolling of eyes, chewing or sucking tongue, or constant chewing movements.
- c. S-shaped curvature of spine and neck.
- d. Walking in circles or standing and treading with feet.
- e. May lick skin until bloody, or may stand and constantly lick wall or other object.
- f. May bellow with pain if touched, or go down if skin on back is pinched.
- g. May become belligerent and attack anything that moves.

This type usually runs a course of three to five days when treated and recovery can be expected in a great majority of

cases. Milk flow is slow to return, and if the cow is in the late stages of lactation, it may be necessary to turn her dry. Extreme caution should be exercised in handling these cases because of the great similarity of some cases to rabies. The diagnosis should always be confirmed by a veterinarian.

3. *MILK FEVER TYPE* - frequently occurs in conjunction with milk fever or, if occurring alone, may be indistinguishable from milk fever. Examination of the urine by chemical means for acetone bodies is the only reliable means of differentiating the diseases. Frequently, when animals treated for milk fever fail to respond, the condition is due to ketosis rather than milk fever.

Although this disease is readily amenable to treatment, it frequently cannot be diagnosed without the help of a veterinarian.

Solutions of dextrose given into the bloodstream, plus the use of chloral hydrate and apomorphine are effective if the disease is not complicated by concurrent infections such as toxic mastitis, womb infections, or hardware disease.

The essential causes of ketosis are not known, and therefore, prevention is based on experience. Some of the practices that have been reported valuable in holding the disease in check are:

1. Dry cows, as well as milking cows, should get adequate quantities of good hay or other roughage.
2. Cows within four weeks of freshening and cows that are in the first six weeks of lactation should not be fed over sixteen percent protein diets.
3. Addition of blackstrap molasses to the ration seems to be of some benefit.

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