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Agricultural Innovation Program (AIP) for Pakistan

AIP-Livestock Fact Sheet no: 06

FRESH COW PROBLEMS

Introduction

Apart from mastitis which is discussed in Fact Sheet No. 18, the other two important disease conditions which can cause high economic losses are **Milk fever** and **Bloat**.

Milk Fever

Occurrence:

Incidence of milk fever is related to age. It rarely occurs among first-calf heifers and seldom at second calving. There is a progressively higher incidence with each freshening.

Symptoms:

The name "milk fever" is a misnomer because the cow does not have a fever. **Calving paralysis** probably would be a better name. There is a lack of appetite and an inactive digestive tract. Often the cow is **dull and lethargic** with **cold ears and a dry muzzle**. The first specific symptom is incoordination when walking. This progresses to where the cow may fall or lie down and be unable to rise. The progress of the disease into three stages; (a) standing but wobbly (b) down on chest and drowsy (c) down inside and unresponsive. The major change in the blood of milk fever cows is in **blood calcium**. Normal fever is 10 mg per 100 ml. Normal cows drop to about 8 at calving. **Milk fever cows drop to about 6.5 to 4.5 mg/100 ml based on the above 3 stages**. It is likely that the drop in blood calcium, accompanied by a drop in phosphorus and an increase in magnesium levels, brings on the symptoms.

Cause:

The cause of milk fever is the **extra calcium drain from the blood** into the milk at calving. This is coupled with the inability of the cow to change her metabolism rapidly enough to keep blood calcium levels up. She has some built-in mechanisms to do this, but they sometimes do not work fast enough. **The way she is fed during the dry period influences the speed of response.**

There are two ways the cow can get more calcium; mobilize it from bone or absorb it from the digestive tract. The two important compounds in the body which influence these processes are parathyroid hormone (PTH) and a substance called active vitamin D. PTH comes from the parathyroid gland located in the cow's neck. Its release is triggered by low blood calcium. The hormone's major effect is to cause calcium to move from the bone into the blood. **Although this hormone becomes elevated in the milk fever cow, the lag in the bone response prevents rapid replenishment of blood calcium.**

Active vitamin D has the primary effect of improving calcium absorption from the gut. Higher production of this compound is triggered by low blood calcium, as well as low blood phosphorus, **High phosphorus apparently tends to inhibit synthesis**. This **active vitamin D** also is **elevated** in the milk fever cow, but apparently the lag in response prevents it from doing its job in time.

The above findings have led to the following conclusions:

- **Excessive intake of calcium** during the **dry period** delays the response from these two compounds and is undesirable.
- **Excessive phosphorus** feeding during the **dry period** also could delay the formation of and response to active vitamin D.
- **Calcium** has to be **present in the digestive tract** in order for absorption to take place. This means that keeping cows on feed and providing a **good calcium intake right after calving is desirable**.
- But **too much calcium during the dry period** makes the mechanisms for replenishing blood calcium lazy, and their response is delayed. The result is that the cow comes down with milk fever.

Treatment:

The method of choice for treating milk fever still remains the **intravenous injection** of a solution of **calcium gluconate**. Response usually is rapid but relapses are common in about 30 percent of cases.

DAIRY EXTENSION MATERIAL

Prevention:

The following specific preventive procedures are suggested;

- Avoid feeding **excessive calcium** during the **dry period**. The daily requirement of a 600 kg pregnant dry cow is about 40 grams of calcium and 30 grams of phosphorus.
- Most studies suggest that levels up to about 100 grams of calcium per day usually do not create problems. However, **feeding excess of leguminous pastures**, such as **clover** and tree legumes which are high in calcium can aggravate the problem.
- Limiting feed intake is an option; probably the best solution is the **use of low-calcium forages** (grass hay or silage, cornstalks or cornstalk silage). By going to the extreme of feeding very low levels of calcium (about 15 grams per day) for about 10 days before calving, could prevent milk fever completely.
- Another factor in **prevention** is to avoid feedings **excess phosphorus** during the **dry period**. Although a Ca: P ratio of between 2 and 2.5 to 1 usually is desirable, it is the total amount rather than the ratio that seems to create problems. Feedings too much phosphorus to correct excess calcium adds to the problem.
- Finally, avoid **excessive fatness** in **dry cows**. This and any other conditions that reduce feed intake at calving tend to cause more milk fever.

Bloat

This **is a condition** of ruminant animals caused by an **accumulation of gas** in the fore stomach (**rumen**). The abdomen becomes distended and appears swollen on one side. Bloat is easy to control but animals can die very quickly if not attended to. **A farmer may lose several animals from bloat in a very short period.**

When **feed is digested** in the rumen, a large quantity of gas is produced. This is normally expelled from the body by frequent belching. If the oesophagus (food pipe) becomes blocked or the rumen contents become frothy, the rumen will start to swell with froth or gas.

Bloat can be caused by any of the following:

- eating a lot of **wet, green pasture**, especially if it has many **legumes** in it, at the beginning of a wet season
- eating **ripe fruits** and fruit waste (e.g. pineapple waste)
- eating feeds that ferment easily such as **brewers' waste** and **grains** (maize, millet, etc.)
- eating certain toxic plants
- the **food pipe being blocked** by large pieces of feed (e.g. potatoes, maize cobs, etc.)
- certain **diseases** (e.g. tetanus) that **paralyse normal breathing**.

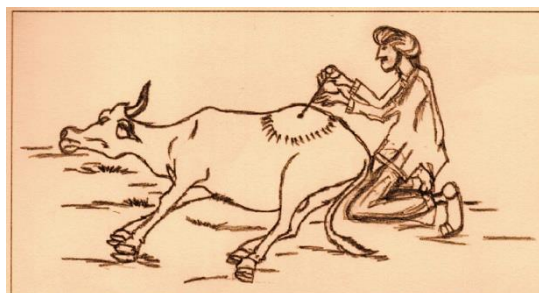
When an animal has bloat, its **stomach becomes clearly distended, swelling on the left side behind the rib cage**. The animal will **stop eating**

and have **difficulty breathing**. Sometimes **green froth** comes out of the mouth and nose and some animals have mild diarrhoea. Sometimes the animal **kicks its side or lies down and sticks its legs out**. After a while the animal will collapse and lie on its side with its head stretched out. It can die if left for long in this position.

Treating bloat

Do not feed the animal for a few hours. Instead **make it move or run about**. Give **anti-bloat medicine** by mouth and rub the left side of the abdomen to help mix it up. Give the medicine once a day for 2–3 days until the animal recovers, administering small amounts at a time slowly. If the animal will not swallow, it is possible to tie a rope across the animal's mouth and around the head to make it chew at the rope and stimulate belching. If the animal is very distressed and looks as if it will die, an **emergency operation can be undertaken**.

Using a **trocar** and **cannula** (a hollow instrument designed to puncture the bloated rumen and allow excess gas to escape) or a **knife**, puncture the skin and the distended rumen on the left-hand side of the cow to let the gas out.



Treating bloat by using a trocar and cannula

When a **knife is used**, a hollow tube is inserted into the puncture hole to **allow air to escape**. A bloat treatment chemical can be put into the rumen via the puncture hole to prevent further gas accumulation. Push hard at the distended abdomen to let the gas out. It is advisable to put a tube into the hole to keep it open. Pour some ant-bloat medicine or vegetable oil through the tube into the rumen to prevent bloat from recurring. When the **tube is removed**, the hole will close on its own. Try to **avoid infection** by applying some **antibiotic powder**, disinfectant spray and/or **anti-fly grease**.

Preventing bloat

Feed animals with dry grass before letting them onto new, wet green pastures. **Do not give them water just before you send them to wet pastures**. Do not put animals onto wet green pasture early in the morning; wait until the sun has dried the grass? Introduce animals to young, green pastures gradually, initially for an hour or two per day and then slowly increase the time. **When changing their feed, do it gradually.**