Gull Lake Veterinary Services

Hoof Prints Newsletter

August 2014

Summer Edition

Toxic Mastitis:

What is it?

Toxic mastitis, acute mastitis, coliform mastitis, or 'E. coli' mastitis are all terms for a clinical mastitis case where the cow is sick. The cause of this type of mastitis is commonly *Escherichia coli* (*E. coli*), but other coliform bacteria such as *Klebsiella pneumoniae* and *Enterobacter sp.* can also be the cause.

Cows affected with toxic mastitis usually have a swollen mammary quarter that has abnormal mammary secretions. They often have a fever, elevated heart rate and respiration rate, are dehydrated, and may be recumbent. These clinical signs are a result of the immune response that the cow initiates in response to the intramammary infection. Coliforms are Gram negative bacteria that have a molecule called Lipopolysaccharide (LPS) within their cell walls. When these bacteria are killed by the immune cells present in the cow's udder the LPS is released into the cow's circulation. This release of LPS triggers a 'hyper-immune' response and the cow becomes sick.

The severity of the sickness depends on the dose or amount of coliform bacteria that establishes an intramammary infection (IMI) and the strength of her initial immune response to kill these invading coliform bacteria. For example, a coliform infection in a fresh cow is often more severe as cows around freshening have a suppressed immune system and are not as proficient at killing the initial invasion of coliform bacteria within their udder. This resultsi in rapid bacterial multiplication, therefore, lots of LPS present for a secondary immune response.

Treatment options for coliform mastitis include systemic antibiotic therapy, fluid therapy, anti-inflammatory therapy, calcium treatment and intramammary antibiotic therapy. Anti-inflammatory therapy is essential to help check the cow's immune response to this coliform infection and also help provide pain control, as mastitis is a very painful disease. Intramammary antibiotic therapy is questionable as many of the coliform infections are self-limiting and very few 'live' bacteria are present in the mammary gland at the time of treatment. Also the tissue of an infected mammary quarter is very swollen, not allowing good distribution of the intramammary antibiotic within the mammary tissue.

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Upcoming Events:

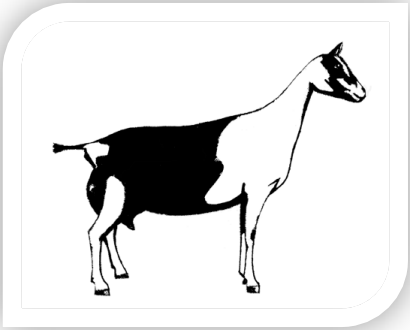
August 23 & 24, 2014 - **Alberta Open Farm Days**
http://www.albertafarmdays.com/

August 15, 2014 – **Anchor D Ranch Simmentals**
Pasture Treasures Female Sale
http://www.anchordranch.com/

Toxic Mastitis:

How do we prevent it?

Prevention of coliform mastitis is based on decreasing the dose of coliform exposure to the teat end and enhancing the cow's immune system to fight off coliform intramammary infections. Minimizing coliform exposure involves maintaining a clean, dry environment for both the lactating cows and the dry cows. Proper premilking teat cleansing is necessary to remove the coliform bacteria present on the teat surface and aid in the prevention of new infections that may occur during the milking process. Enhancing the cow's immune response can be accomplished through adequate nutrition (vitamin and mineral balancing) and vaccination with an *E. coli* (or similar bacterin) vaccine. Vaccination with these products will not prevent IMI, but will aid the cow in mounting a rapid, early immune response that leads to a decrease of clinical signs.



False Pregnancy in Dairy Goats

False pregnancy or hydrometra is a condition that occurs in sexually mature female goats. It presents as an accumulation of sterile fluid in the uterus when a persistent corpus luteum (CL) producing progesterone is found on the ovaries. This condition can occur spontaneously in unmated does after a heat cycle and in bred does that suffer early embryonic death and fetal resorption. The continuous production of progesterone causes the doe to look and act pregnant. They can gain between 1-7L of fluid, develop an enlarged abdomen and if not lactating, develop an enlarged udder. In a bred doe where embryonic death occurs this condition can extend the regular length of gestation. Generally in unmated does, this condition is shorter than a normal gestation period.

Diagnosis of this condition is found by ultrasound, and is easier to diagnose later in pregnancy: finding a large fluid filled uterus without the normal placental/uterine connections (buttons) or a fetus.

Treatment includes giving a prostaglandin (Estroplan or Estrumate) that causes CL regression, ending progesterone secretion. This results in cervical relaxation and fluid release within 1-2 days. The false pregnancy may terminate spontaneously with natural CL regression and fluid release, and is termed "Cloud Burst". Fertility does not appear to be affected in does that develop a false pregnancy. The condition has been seen to affect 3-30% of a herd at a time. It occurs more commonly in out of season breeding, older goats, and those that are greater than two years into lactation.

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Coccidiosis

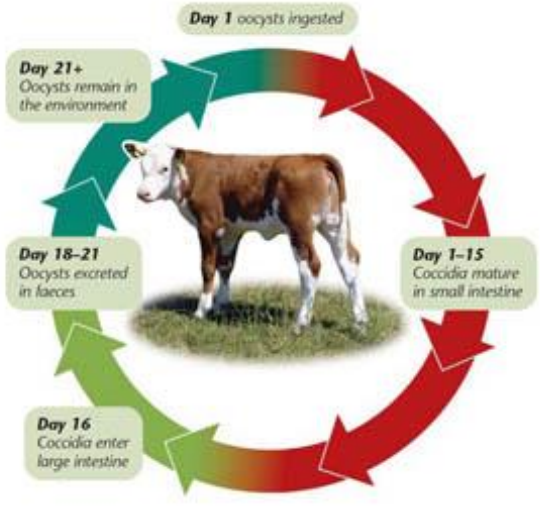
The arrival of spring in central Alberta, while often welcomed, can bring about a wide range of challenges in regards to calf management. The warmer temperatures and a melting snowpack combined with an increase in the amount of rainfall often leads to a very moist and muddy environment in which a young calf is reared. Among the many challenges that a calf faces during this time is coccidiosis: a common parasitic disease that affects young calves primarily between the ages of three weeks and six months.

While there are many different species of coccidia present in Alberta there are only 2 species that cause clinical disease, namely *Eimeria zuernii* and *Eimeria bovis*. Calves become infected with coccidiosis after ingesting a microscopic egg, also called an oocyst, from their environment and once infected continue to propagate the parasite by allowing it to develop and reproduce within their intestinal tract. Cattle then continue the disease cycle by releasing more oocysts into the environment through their manure, contaminating pastures, feedstuffs, and water sources. Oocysts once in the environment continue to develop in moist/cool conditions and can remain in the environment for up to a year.

While many calves will ingest oocysts from the environment, not all calves will show severe clinical disease. Severity of clinical disease depends on many factors including the number of oocysts ingested, the immunity status of the calf, age of the calf, and if the calf has been under a recent stressor. Calves with severe coccidiosis will often have diarrhea that contains mucous and blood, will be dehydrated, thin and depressed. Some calves may also continually strain and are at risk of a rectal prolapse. Milder cases of coccidiosis can merely show mild diarrhea, poor condition, poor growth rates or poor hair coats. A fecal sample can also be taken to aid in the diagnosis of coccidiosis but does have some limitations.

In order to prevent the spread of coccidiosis within your herd, good management practices should be observed. These include preventing drinking water and feed from becoming contaminated with manure, keeping pens and bedding dry and isolating severely infected animals from the rest of the herd. If the cattle are on pasture ensure that water troughs are raised above the ground, minimize grazing near bodies of water or low lying areas and prevent overgrazing as this could increase the amount of parasites ingested. In addition, products such as monensin, lasalocid and decoquinate can be fed continuously to calves during periods of high risk.

Calves showing signs of severe coccidiosis often need to be treated with an appropriate antibiotic and may need to be put on intravenous fluids if dehydration is severe. Feel free to contact the clinic for more information.



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