

MILL CREEK VET SERVICES: HERD HEALTH TIPS  
**ENVIRONMENTAL MASTITIS: COLIFORMS (“COLI”)**

***WHAT IS COLIFORM (“COLI”) MASTITIS?***

Mastitis caused by bacteria (*E. coli*, *Klebsiella*, *Enterobacter*) found in the cows surroundings. Unlike contagious forms of mastitis which spread cow-to-cow during milking, coliforms come from environmental sources, such as manure and organic material/bedding (recycled manure, wood shavings, etc). Coliform bacteria can enter the teat canal both during and between milking. Dirty udders, especially when wet, have enormous bacterial populations.

High rainfall, hot and humid weather, and moist environments can trigger heavy bacterial growth and increase incidence of coli mastitis. Coliforms thrive in moisture.

***CLINICAL SIGNS***

Fever, swollen/warm quarter (usually only 1 quarter affected ), abnormal milk, decreased appetite, depression, diarrhea, and standing away from other herd-mates are common clinical signs of Coli mastitis.

***WHEN DO COWS GET “COLI” MASTITIS?***

Both during and between milking. Cows are exposed to tremendous amounts of bacteria in their environment, especially muddy corrals or poorly/improperly maintained free stalls. Infections occur both during lactation and the dry period. Most infections occur during the first 2 weeks following dry-off, 2 weeks before freshening, and early (1<sup>st</sup> 2 months) lactation, although infections can occur at any time. Infections originating during the dry-period usually don't become noticeable to the dairy farmer until after freshening. Milking wet udders and/or teats greatly increases risk of mastitis. In addition, the teat end does not fully close for 1-2 hours after milking which can increase the chance of infections immediately following milking.

***TREATMENT***

Early detection is essential for successful treatment. Milkers need to be trained to detect early cases by observing foremilk, palpation of mammary glands and herd observations between milking.

Peak bacterial numbers have usually already occurred when signs of mastitis appear, so antibiotic therapy is of little to no benefit. Endotoxin released by dying bacteria are what actually make the cow sickest. Infusing antibiotics may actually be somewhat harmful as it destroys more bacteria, causing more endotoxin release. In addition, antibiotic treatment can severely limit future culling options until withdrawal periods are over. In general, treatment should consist of:

- 1) **frequent stripping/milk-out** of infected quarter after **oxytocin** injection
- 2) **anti-inflammatory's** -banamine, aspirin, and/or corticosteroids (azium/dexate, predef)
- 3) oral (water/electrolytes) and I.V.(2 liters hypertonic saline) **fluids**
- 4) oral (gel/paste) or slow I.V. calcium, and 5) glucose.

***CONTROL***

1)Environment: **Keep cows as clean and dry** as possible (milking, dry, springing, and calving cows). Increase loafing area per cow. Scrape/clean corrals often. Maintain clean, dry, well-bedded calving area.

**Clip and/or flame udders.** Keep **free-stalls dry, clean,** and comfortable and use **inorganic bedding** if possible, ie sand.

2) Milking technique: **MILK ONLY CLEAN DRY TEATS.** Limit use of **water in barn while milking.** **Forestrip** each teat to detect early cases. Use a **pre-dip** (leave on for at least 30 seconds). Clean teats with **single service paper or cloth towel** before milking. Remove all four teat cups at same time after milking. Use effective **post-dip.** Keep **cows standing 1-2 hours after milking** (ie have feed available). Check **milk-machine function** regularly.

3) Increase cow resistance: **well-balanced nutrition** with adequate selenium, vitamin E, and vitamin A.

Use an effective **coliform mastitis vaccine** ( ie Upjohn J-5)