

## **HEALTH AND MILK QUALITY**

### **Problem Solving: Clinical Mastitis I--Treatment**

In the previous series of columns we discussed the reports which are available to help you identify udder health and milk quality problems. We now begin a new series that will present some solutions to these problems. The first problem to be addressed is one which frequently assumes greater importance in the summer: clinical mastitis.

We define clinical mastitis as a visible alteration in the appearance of milk from one or more quarters. The secretion may appear thin or thick; white, yellow, or blood-tinged; and may contain clots, flakes, stringy material, or pus. Accompanying these abnormalities in the appearance of the milk are a variety of signs of inflammation, ranging from swelling and firmness of the affected quarter, to fever, elevated heart rate, depression, recumbency, or even death.

Treatment of the cow with clinical mastitis has three major goals: 1) to save the life of the cow; 2) to rapidly and completely resolve the clinical signs and abnormal milk, to enable the cow to return to production as quickly as possible; and 3) reduce the duration of the bacterial infection, to reduce the chance that other quarters or cows will become infected with the same organism. The specific treatment to achieve any one of these goals, and the success of that treatment, is dictated by the organism present. Here are some of the more common mastitis-causing organisms and suggested treatments. Be sure to consult with your veterinarian before changing any of your treatment protocols.

#### **E. coli (coliform mastitis)**

Can be a severe life-threatening infection, but organisms are usually absent from the udder when signs are seen. Intramammary antibiotics have never been shown to be effective. The goal of treatment is to minimize the effects of endotoxins produced by the bacteria. Use oxytocin and frequent stripping to remove toxins from the gland. Give flunixin (Banamine) or phenylbutazone to combat the signs of inflammation (a prescription from a veterinarian is necessary). If cow is severely dehydrated, oral or intravenous fluids may be necessary. If illness is severe, systemic (intramuscular or intravenous) antibiotics may be warranted.

#### **Streptococci (environmental)--S. uberis, dysgalactiae**

Signs are usually restricted to the udder, although a fever can sometimes be seen. Intramammary antibiotics are indicated, since they will significantly increase the cure rate. Choose an antibiotic based on your veterinarian's recommendation and a sensitivity test.

### **Staph. aureus**

Signs are usually quite mild (clots and flakes in the milk), but occasionally a particular strain can result in severe toxemia, gangrene, and death. In the latter case, supportive care requires fluid therapy, antiinflammatory medications, and systemic antibiotics. For the routine non-toxemic clinical staph infection, intramammary antibiotics are worth a try but cure rates seldom exceed 30% without very aggressive treatment. Some success has been achieved using three separate rounds of treatment with the new pirlimycin intramammary tube (UpJohn's Pirsue).

### **Strep. agalactiae**

This organism rarely causes clinical mastitis--it is much more likely to cause a chronic subclinical infection. It is very sensitive to intramammary treatment (>90% cure).

### **Mycoplasma spp.**

The hallmark of a mycoplasma infection is the appearance of a yellowish secretion which spreads to all four glands, but does not cause systemic illness. Diagnosis requires special laboratory procedures. There is no treatment. Affected cows should be culled or at least segregated from the rest of the herd.

### **Actinomyces pyogenes**

This pus-producing infection usually appears following an injury to a teat. A foul smell and systemic illness (fever and depression) due to a secondary anaerobic invader often accompany the initial *A. pyogenes* infection. High doses of intramuscular penicillin and intramammary penicillin-type products (such as DairyClox--cloxacillin) will usually eliminate the anaerobic bacterium and the systemic condition of the cow will improve dramatically. However, the *A. pyogenes* infection is nearly impossible to eliminate; the affected gland loses all milk producing ability and becomes a large abscess. Veterinarians will often amputate or lance the teat of the affected quarter to facilitate drainage.

Considering the wide variety of treatments indicated for the different mastitis-causing organisms, it's clear that the first step in the treatment decision is to identify the organism responsible for the mastitis. The next column will address this issue. 706 words