

WVS MILK QUALITY

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How Long to Treat Clinical Mastitis

Most of the information in this article is taken from an article by Dr. Pam Ruegg in the Hoards Dairyman.

The question of how long to treat a mastitis case does not have a simple answer.

Mastitis is usually caused by bacterial organisms and can either be a clinical or subclinical case. Subclinical mastitis causes an influx of white blood cells (somatic cells) into the milk. If the milk looks completely normal and is pasteurized, the milk is safe to put into the bulk tank. Subclinical mastitis cases are normally treated at dry-off because success rates are higher and discarding valuable milk due to treatment is costly. It can be difficult to determine effectiveness of treatments, especially by observing milk. The appearance of milk is not a good indicator of an active infection. Determining when – and how long – clinical mastitis should be treated requires knowledge of the type of bacteria that is causing the infection and understanding how the immune system works to eliminate the infection. Clinical mastitis is also caused by an infection, but the resulting inflammation causes production of abnormal-looking milk. That milk must be discarded, and most producers want to treat cows and speed up their return to normal milk.

Mastitis is caused by several bacteria, but the signs of abnormal milk, swollen udder, and reduced milk yield are nonspecific, and therefore they look the same regardless of the cause. The clinical signs are the result of the immune system working to eliminate the infection, and for some pathogens that response is successful.



It is very hard to determine the success of antibiotic treatment by looking at the milk.

Abnormal milk usually lasts about three to five days, but resolution isn't an indicator that a bacteriologic cure has been achieved as inflammation is not a good indicator of infection, defined as the presence of actively dividing bacteria.

In about 30% of clinical mastitis cases that are sampled, no bacteria is isolated from the milk. Most culture negative cases occur because the cow's immune system has successfully eliminated the infection. Research has shown those cases have a very good prognosis without additional treatment, but their milk will remain abnormal for about three to five days. *E. coli* infections that cause a non-severe clinical mastitis also have a good prognosis in more than 90% of those cases because the immune response alone will be successful. The *E. coli* cases should be observed to make sure they are recovering because a few will still get sick.

Antibiotics are usually recommended for cases caused by susceptible gram-positive

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bacteria such as Streptococci and many non-aureus Staph. The use of antibiotics speeds up elimination of the bacteria but doesn't reduce the number of days that milk is abnormal.

Judging the success of the antibiotic treatment by identification of abnormal milk is not an effective method.

There are five intramammary antibiotics that are approved by the FDA for treatment of clinical mastitis, and all are approved to treat mastitis caused by gram-positive bacteria. The duration of treatment on their labels are:

- Three treatments administered at 12-hour intervals.
- Three treatments administered at 24-hour intervals.
- Two treatments administered at 12-hour intervals.
- Two to eight treatments administered at 24-hour intervals.

For routine treatment of non-severe clinical mastitis, use the minimum label duration.

Most people end up treating cows until the milk looks normal, even though that is usually longer than needed because the effectiveness of treatments as clinical signs and somatic cell count responses can be misleading.

After bacteriologic cure the elevated SCC of affected quarters will return to less than 200,000. The time required to return to normal depends on the cause and may exceed four to six weeks. The milk from most non-severe clinical mastitis cases returns to normal within three to five days after being detected.

Mastitis is expensive and causes many indirect effects such as reduced production, infertility, reduced product quality and a higher risk of culling.

The cost of discarded milk makes up about 80% of the direct treatment costs. Five days of treatment plus three days of withholding for residues can result in \$175-\$200 in losses just for the discarded milk.

Many dairymen can minimize these losses by reducing treatment durations -even by just one day.

WVS Offers Spanish Training



Dr. Molly Rogus

Many of the problems that we see in dairies are from inadequate training of employees.

Waupun Veterinary Service has two veterinarians that are fluent in Spanish that can help with training your Hispanic employees.

Both Dr. Emma and Dr. Molly have been translating and offering protocol training for several years.

Please contact the clinic to schedule an appointment with them.



Dr. Emma Schaffel