EFFECTIVE MASTITIS TREATMENT EQUALS EFFECTIVE RESULTS

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Treating clinical mastitis can be one of the most frustrating issues a dairy farmer faces. The farmer is never sure whether they should treat or not treat which creates some real problems for those dairies.

When a cow has a clinical case of mastitis, the dairy farmer needs to make a few decisions. The first is to determine whether the case is caused by gram positive bacteria or gram negative bacteria. The next decision is made on whether the case of clinical mastitis is either mild or severe. If these two decisions can be made properly, the chances of the treatment working is increased dramatically.

The hardest issue for the dairy farmer is to determine whether the clinical case is caused by a gram positive or gram negative bacteria. The only way to determine the cause is by culturing the milk. Unfortunately, the culturing will delay treatment by 24 hours. If there is a veterinary clinic that does in-house culturing or a commercial laboratory close by, the samples can be taken to one of these labs for immediate culturing. Most farms do not have the luxury of having a good laboratory close to their farms so they are forced to look at on-farm culturing.

On-farm culturing is much simpler to do than most people think. The farm needs to invest in a low cost egg incubator and sterile swabs. The total investment should be less than $50. Once the incubator is purchased, then the dairy needs to find a supply of culture media. The culture media can be done two different ways.

The best approach to on farm culturing is to use the Minnesota Tri-plate system. This simple system comes with a very easy user's guide and is extremely easy to use. This system allows you to not only determine gram positive from gram negative bacteria, but also allows for a reasonable degree of actual bacteria identification. The Minnesota Tri-plate system can be ordered directly from the University of Minnesota by calling Dr. Russ Bey at 612-625-7053 or 612-625-8111. Many of my clients use this system and have found it to be very beneficial.

Another approach is to buy MacConkey media plates. These plates only grow gram negative bacteria. These plates are very inexpensive and will allow you to quickly determine the difference between gram positive and gram negative bacteria. If the plate grows bacteria, don't use antibiotics and when there is no growth, you do treat with antibiotics. When using this system, I still recommend freezing the samples and having the bacteria identified by sending them to a qualified laboratory. The on-farm testing is used just to help you make a better treatment decision. The MacConkey media plates can be ordered through your veterinary clinic or many commercial laboratories.

The research has clearly shown that treating gram negative bacteria with antibiotics has little value, whereas treating gram positive bacteria with antibiotics have great success. In order to maximize your treatment success, you need to know what you are treating.

A few years ago, the dairy industry really went off on a tangent of not treating mastitis with antibiotics. The treatment basically was to use oxytocin and frequent stripping of the bad quarters. This approach was not too bad for gram negative bacteria, however, the herds that had gram positive bacteria had serious crashes over time. Gram positive bacteria need antibiotic therapy while gram negative bacteria don't.

One of the most important places to utilize your veterinarian is to have them sit down with you on your farm and develop treatment protocols. If you select the right treatment on your first attempt to treat, there is a greater chance of success. Unfortunately, too many farms select the wrong drug for the wrong bacteria. Not only does the protocol need to be designed to properly treat gram positive and gram negative bacteria, but it also needs to deal with treatments for mild and severe clinical mastitis. Your veterinarian can help you make better decisions on your farm.

Once protocols are established, then treatment records are needed. Many dairies really don't know what treatments actually work and which ones do not. If treatment records are kept on the farm, the real results will be easy to evaluate and determine which treatments have worked and which have not.

When electing to treat a cow with antibiotics, you need to make sure you treat long enough to cure the quarter. One of the biggest reasons for treatment failure in the dairy industry is stopping treatment too soon. Most dairies don't want to throw milk away any longer than necessary so they are always trying to minimize treatment times. In order to reduce the level of repeat mastitis cases and get higher levels of cures, the treatment must be delivered for a minimum of three days.

Changes in the treatment should not occur for at least three days. Every time the treatment is changed, the pharmacological clock starts over. When the dairy farmer decides to treat a cow with antibiotics, they need to make sure they use the drug properly so resistance is not an issue. Much of the new research being reported suggests that the dairy farmer may need to treat longer than three days. Some data suggests treatment periods of 5 to 7 days or until all signs are gone.

When it comes to treating cows, there are a host of problems and issues that needs to be considered. If the dairy farmer uses antibiotics, there is a risk of contaminating milk from residues. Milk residue violations are very serious and can lead to losing the farm's milk permit. Every time a farmer elects to treat animals with antibiotics, they are also taking full responsibility to keeping the milk supply clean and safe.

Many dairies now have many employees working on their farms. When it comes to treatment, I feel this procedure needs to be limited to several properly trained individuals. The only way you can assure treatment success and drug residue avoidance is by having only qualified and trained people doing all treatments.

The number one reason for drug residues in bulk milk is from a milker milking an improperly marked animal into the line. Every dairy farm needs to have a system in place that properly identifies every animal that is treated so every person milking cows clearly knows who she is. I find colored duct tape to

be one of the easiest and safest ways to mark cows. The colored tape can be put on both rear legs of the treated cows and the tape will stay on the legs until you remove it.

Besides lactation therapy, dry cow therapy still is one of the most important management tools on a dairy. At this time, the literature and research still strongly recommends dry cow therapy on every animals. Dry cow therapy needs to be limited to an approved single use dry cow intramammary therapy. It is also important to remember that dry cow therapy works on existing infections at dry off and prevents new infections around the dry off time. Dry cow therapy DOES NOT prevent new infections at calving time. After treatment, the quarters need to be dipped with an external teat sealant or the new internal teat sealant. Sealants are an excellent way to reduce the risk of new infections at dry off.

The new internal sealant that is due out in April 2003 has shown extremely promising results. This sealant is placed into the teat after the antibiotic and actually stays there until you remove it after calving. This new internal sealant will reduce new infections at calving time by over 25% and also reduces the risk of coliform infections are calving time.

One of the newest identified problems on many well managed dairies is heifers calving with mastitis. In fact, this may be one of the biggest problems I see as a quality milk consultant. Heifers that calve with a SCC greater than 200,000 or linear scores greater than 3.9 on their first DHIA test will produce 1400 pounds less milk in their first lactation. This is a huge economic problem on many farms. The data shows it really doesn't matter what the SCC or linear score is on the second DHIA test because the milk loss has already occurred.

The goal for any dairy farm is to have less than 15% of the heifers calve with a high SCC or linear score. If the level is higher than that, there is a significant problem on the dairy. There are several ways to reduce the level of new infections in heifers.

1. Heifers can be dry treated 50 to 60 days with approved dry cow Therapy. The teats need to be sealed with an external or internal sealant after treatment. This approach works, however, the danger to the person treating the heifers may outweigh the benefits.
2. Heifers can be treated 7 to 14 days prior to calving with one lactating tube per quarter. The quarters should not be stripped out prior to treatment. The teats should be sealed with an external teat sealant after treatment. This system has worked extremely well on most farms.
3. All heifers can be checked at day two or three after calving with a CMT (California Mastitis Test) paddle. If the CMT score is 2 or greater (starts to gel), the quarter should be treated immediately with a lactating tube for 3 to 5 days.
4. Another management program that reduces new infections and calms heifers down significantly after calving is to run the heifers through the parlor once a day and dip their teats for approximately 7 days prior to calving. The dairies that are doing this are seeing much better performance results on these heifers.

Whenever heifers or cows are treated with intramammary treatment, you must be sure the teat and teat end is properly cleaned and sanitized before treatment. Take the time to clean the teats properly before you infuse the material into the quarter. Contamination at the time of treatment can lead to seriously infected quarters that are usually lost.

Successful therapy depends of knowing what bacteria you are treating and selecting the proper treatments. Only your veterinarian can help you design the proper protocols to make sure your treatment programs are successful. Spending the money to set up protocols has much more payback than spending the money to treat new cases.