



Automated Pathogen-Based Mastitis Therapy

Background

The treatment of mastitis caused by certain bacteria is not improved by antibiotic therapy, so NOT treating those cows will decrease antibiotic use, decrease hospital days, and decrease milk withheld from sale. In addition, treatable cases are not negatively affected by waiting approximately 24 hours to start therapy. You need a reliable method to know what bacteria are likely associated with a MAST event to make this decision.

- Study conducted on commercial dairy to compare blanket mastitis therapy to pathogen based treatment
- Treatment of cows with mild to moderate clinical signs (85% of cases)
 - Abnormal milk and/or inflammation of the udder
 - Systemically sick cows treated according to farm protocol
- Pathogen based treatment delayed treating cows for 24 hours and only treated environmental Streptococcus and Staphylococcus
- Blanket therapy treated all cows at diagnosis of mastitis independent of organism
- **Pathogen based treatment equates to a \$30 savings/cow on an annual basis – including sampling/processing fees**

Results

	Pathogen Based Treatment	Blanket Therapy	Significantly different
Cases of mastitis	246	243	
Treated cases	79	243	
Length of clinical mastitis signs (days)	4.5	4.8	NO
LS at next test day	4.3	4.4	NO
Milk yield at next test day	76	74	NO
Risk of being culled at 30 days	3.7%	5.8%	NO
Risk of being culled at 60 days	9.3%	11.1%	NO
Days cow is out of tank (non-saleable milk)	5.8	8.8	YES
Risk of chronic E. coli infection	0%	0%	NO
Vasquez et. al 2016			

Automating reporting

Options for enrolling in the Automated Pathogen-based mastitis program:

1. Option 1: Electronic accessing or downloading of cow ID's from DC305
 - a. Assures correct ID and quarter designation when receiving samples at QMPS
2. Option 2: Option 1 + culture results electronically returned to DC305 computer
 - a. Culture results assigned to cowcard for each cow ID downloaded by QMPS
3. Option 3: Option 1 + Option 2 + automated assignment of treatment protocols
 - a. Cows are automatically assigned to mastitis treatment protocol based upon the culture result returned in Option 2

Contact QMPS and provide the following:

- Contact person on the farm (phone/email): _____
- Time(s) that hospital pen is milked: _____
- Earliest time each day that samples will be picked-up: _____
- Time that culture results are needed to make management decisions: _____
- For each type of sample to be sent in, what type test is going to be requested for each?
(A=aerobic, B=both aerobic and Mycoplasma, M=Myco only, P=Pooled Myco only, V=aerobic individual and pooled Myco)
- What type of samples are going to be sent in: circle all that apply

<u>Sample type</u>		<u>Sample Test</u>				
<input type="radio"/> clinical mastitis:	A	B	M	P	V	
<input type="radio"/> high SCC:	A	B	M	P	V	
<input type="radio"/> fresh cows:	A	B	M	P	V	
<input type="radio"/> hospital take out:	A	B	M	P	V	

Fees

Cost of Pathogen Based Treatment program

- No fee for Dairy One to program DC305 for Pathogen Based Treatment
- QMPS
 - Aerobic culture \$5.50/sample
 - Mycoplasma culture \$5.50/sample
 - Mycoplasma pooling fee \$2.00/sample
 - Processing fee \$2/set of samples
 - No stop charge for picking-up samples
 - Example: 4 samples picked-up for aerobic culture would cost \$24.00

Sample flow

Samples will be picked-up at the dairy as needed before the predetermined time. It is imperative that all samples for pick-up are entered into the computer prior to sample pick-up. The cow ID's and quarters as entered in DC305 will be downloaded to a USB and then uploaded at QMPS and used for receiving of the samples. With no manual entry of cow ID or quarter the error of misidentification during receiving is eliminated.

Tracking

You will have a printout everyday of all the new auto-assigned MAST events and the associated treatment protocols so that you can review the data if you choose. Your veterinarian will get an email every morning with recent culture results, and the auto-assigned treatment. They are aware every day of how the system is working.

Conclusion

It should be noted that this program is not intended to influence the incidence of clinical mastitis on your dairy or have an impact on your bulk tank SCC. Depending on the current MAST recording system this program may actually appear to increase the incidence of clinical mastitis since all cases, including the animals not treated, will have a MAST event recorded. We expect to maybe increase your CULTURE expenses, but certainly decrease your MAST expenses, both in drugs and unsaleable milk.