

Using on-farm milk culture diagnostics to make treatment decisions.

Mastitis infections are caused by a large variety of organisms. The range of organisms contributing to mastitis in a dairy herd varies greatly from farm to farm and season to season. On farm milk culturing can be an important tool in the development of mastitis management protocols. Responsible antibiotic use, sound culling decisions, residue avoidance, and potentially reduced treatment costs are all benefits of including milk culture results in mastitis decisions.

Another benefit can be realized when owners, managers, herdsmen and milkers use culturing to foster a “team” approach to mastitis control. The visualization of mastitis pathogens on a culture plate can reinforce proper milking procedures, good stall management, and treatment protocols. When culturing is implemented as a training, monitoring, and treatment protocol guide, herd mastitis and somatic cell count goals can be realized.

Clinical Mastitis

Mastitis is caused by a large variety of organisms, many of which do not respond well to antibiotic treatment whether the treatment is intramammary, or systemic, or a combination of both. On-farm milk culture provides an opportunity for dairy producers to make better informed treatment decisions for clinical cases. Infections caused by more treatable organisms (streptococcal species, Staph aureus, and Staphylococcal species –CNS) are treated with suitable intramammary treatment. Infections due to less treatable infections such as Klebsiella species, Prototheca, E.coli, Yeasts, Pasteurella species, etc are more effectively managed by means other than intramammary treatment. This strategy has the potential to save significant treatment costs in most herds and reduces the loss of salable milk.

Sub-clinical Infections

In most herds the chronically infected cows are the most significant contributors to the bulk tank SCC (BTSCC). They contribute excessive numbers of cells to the tank day after day often for months at a time. Chronically infected cows are those with linear scores > 4.5 for two or more consecutive months.

To efficiently manage the BTSCC the cows with chronic high cell counts need to be better managed. Some infections, those caused by Strep species and select Staph aureus, may be curable with proper intramammary treatment. High cell count milk from quarters infected with other non-treatable mastitis pathogens are managed in other ways that may include quarter-milking, dry off (cow or quarter) or culling.

The recommended method to manage chronic sub-clinically infected cows is to identify the chronic sub clinically infected individuals with test day linear scores. There are other ways of doing this but they are more labor intensive (California Mastitis Test). A list of chronically infected cows or a list of cows ranked by their contribution of cells to the bulk tank can be used as a work list. It is also important managers and herd veterinarians look at other individual cow performance issues when making management decisions. These should include age, days in milk, reproductive status (days carried calf), milk, other health issues, previous mastitis pathogen identification, etc. Some cows may be obvious cull candidates; others may be classified as do-not-breed and would not be sampled for culture. These animals would remain in the herd until they are unproductive. High cell count quarters are managed with a quarter-milker or dried off. Chronically infected cows with no recent mastitis pathogen identification (<30 days) may be sampled for culture and managed according to the protocol created with your veterinarian.

Identifying treatable subclinical infections often requires a higher level of culture diagnostics since treatment selection and duration can vary greatly, especially for a variety of common streptococcal species. On-farm diagnostics may not provide the level of information or the accuracy necessary to make the best treatment decision. Since the diagnosis of subclinical mastitis is an elective process in which timeliness is not as great a concern as accuracy, a coordinated effort with QMPS may be indicated.

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Considerations

Commitment— milk culturing requires a long-term commitment by all involved. It is not a panacea or a quick fix.

Training— an extensive initial training process is required to learn proper culturing techniques and bacterial colony identification. Additionally, periodic reviews are necessary to correct procedural drift and maintain accurate bacterial identification.

Costs— Incubator—starting at \$110.00
Culture plates—starting at \$3.50 per plate
Employee Time—approximately 1/2 hour per day
Training—many options are available at variable costs: veterinarian, QMPS, ProDairy, etc

Culture results from new mastitis cases

	Gram+ Strep & Staph spp	Gram-		Staph aureus	Other
		e.coli	Klebsiella		
Farm A	50%	30%	10%	0%	10%
Farm B	30%	60%	2%	0%	8%
Farm C	20%	20%	5%	40%	5%

Examples

Farm A and Farm B are actually the same farm and represent a change in the mastitis pathogens over a two year period. Initial protocols concentrated on appropriate intramammary treatment for Gram+ environmentals. As the percentage of Gram– organisms increased, treatment protocols moved away from IM treatment and toward appropriate Gram– therapy. Because

on farm culturing was in place, the farm and the veterinarian were able to tailor treatment protocols appropriately.

Farm C has a different profile and requires a different approach. Staph aureus is a contagious mastitis pathogen that often responds poorly to intramammary therapy. Rather than a simple, but ineffective, treatment protocol, on farm culturing was used to test and group cows to prevent new infections. Over time, the total infection rate for the herd was reduced by protecting the negative cows. The farm also achieved financial benefits of not wasting time and money on ineffective treatments and the withholding of milk with antibiotic residues.



With Fair Weather Comes Fairs... Health Requirements

1. All animals must be accompanied by a Certificate of Veterinary Inspection (CVI), signed by an accredited veterinarian with animals individually identified. All tags and tattoos must be placed on the health chart. Please have animals properly restrained for accurate ID by your veterinarian when he/she comes to meet the health chart requirements. State Fair requires all health charts be checked by an official as cattle arrive and before they are unloaded.
2. NYS will continue BVD PI negative requirement. All animals previously tested and with appropriate documentation need not be retested. Several tests are available, including pooled samples—consult your herd vet to discuss which test best fits your needs.
3. Rabies Vaccination: All animals over 105 days of age on the day of arrival, must have been vaccinated for rabies at least 14 days prior to arrival at the fairgrounds but no longer than the labeled time for active protection. This vaccination date and vaccine must be listed on the CVI and must be available to show officials at all times in the event of animal bite. **Any swine over 3 months of age must be vaccinated for rabies (this is off-label) if going to the New York State Fair.**
4. Bovine Respiratory Disease Complex: All cattle, must show proof of vaccination against the common bovine respiratory disease viruses (shipping fever) not less than 14 days before arrival at the fairgrounds. Vaccination must include immunization against bovine viral diarrhea (BVD), bovine respiratory syncytial virus (BRSV), infectious bovine rhinotracheitis (IBR), and parainfluenza (PI).
5. All animals will be inspected for contagious conditions. Examples include warts, ringworm, lice, mange, respiratory infection, and contagious hoof conditions. Animals may be denied entry or rejected. Please be conscientious and cooperative regarding this matter.
6. Information can be obtained by calling DAI: 800-554-4501. **New York Department of Agriculture and Markets, Division of Animal Industry.** www.agmkt.state.ny.us

In the immortal words
of Edgar Allen Cow...

Spring has sprung
The grass has riz
I wonder who
my show calf is?



Do your animals have travel plans this summer?

We are making appointments
now for vaccinations and health
charts.

It's not too early.

Requirements vary by county
and state.

Please check with your
destination for more
information. Don't be
turned away at the gate
for lack of, or improper,
documentation.

QMPS has developed a Work-
shop for Improved On-Farm
Milk Culturing—call to schedule
Quality Milk Production
Services Western NY
4530 Millennium Drive
Geneseo, NY 14454
585-243-1780
877-645-5525

Wyoming County
Dairy Fest

Friday, June 12, 2009
 5:00 p.m. - 9:00 p.m.

at Wyomoco 4-H Camp

2780 Buffalo Road in Varysburg

Come celebrate "June is Dairy Month" to honor our dairy farmers and promote all of the great dairy products produced from Wyoming County milk!

- Free Milk, Cheese, Dip and Ice Cream Samples
- Basket Auction
- Ice Cream Eating Contest
- Pedal Tractor Races
- Family Entertainment
- Football Skills Contest
- Soccer Shoot-out
- Agriculture Exhibits
- Milk Moustache Photos
- **AND MUCH MORE!!**

Dairy Dinner
"Beef on weck, cottage cheese, yogurt, beans, dessert, beverage"

Also Available: Hot dogs, hamburgers, cheeseburgers, nachos, milkshakes, and ice cream sundaes

Dairy Foods Contest & Auction

Come Join The Fun!

Directions available at <http://www.campwyomoco.com>.
Parking available at camp or a shuttle service will be available from Sheldon Elementary School in Varysburg.

Sponsored by: Wyoming County Dairy Industry and Wyoming County Dairy Fest Committee

Thank you to everyone who attended the spring meeting!

This meeting was a very enjoyable and informative evening. A special thank you to everyone who made this possible and to a speaker who is outstanding in his field... Dr. Mike Hutjens!

A copy of all newsletters are posted at:
www.perryvet.com

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