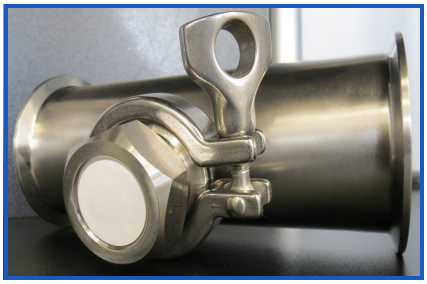
QMI NEWSLETTER

SPRING 2012

QMI Equipment Options To Sample A Bulk Tank As It Is Being Unloaded



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FDA and NCIMS Approve a Safer, More Accurate and Time-Saving Method of Farm Bulk Milk Tank

PRESS RELEASE

OAKDALE, MN: March 15, 2012 – Recent publication of FDA memo M-I-12-4 Actions of the 2011 National Conference on Interstate Milk Shipments (NCIMS) authorizes the use of the QMI® Aseptic Sampling System for collection of farm bulk milk tank and/or silo sampling.

This alternative method of sampling, consisting of the QMI Aseptic Sampler, QMI Composite Sample Collection Bag and peristaltic pump, allows users to obtain more accurate representative producer samples as mandated by the Pasteurized Milk Ordinance (PMO). This aseptic sampling method is a great improvement over the dip sampling method.

The QMI method of sampling from a bulk tank and/or silo has several advantages. First, the QMI method allows for a more accurate and representative sample (sample is taken continuously from the entire volume of milk). Second, the sample is collected aseptically, meaning it eliminates environmental contamination (bacteria) of samples. Third, the sampling guidelines state the bulk tank must have a working agitator. But, agitation specifically for sampling is not necessary, reducing time the driver must spend at the farm. Fourth, the sample collection is done as the milk is pumped from the farm bulk tank to the milk tanker. The milk sample is contained within the sterilized flexible tubing and bag so there are no parts to clean. Fifth, drivers will not have to climb up onto the bulk tank carrying the conventional sampling equipment.

Gib Martin, manager of Mount Joy Cooperative, Mount Joy, PA states the following: "The QMI Aseptic Sampler is a more accurate and consistent way of sampling large farm bulk tanks. The QMI Aseptic Sampler is quick and easy to use and saves agitation time at the farm."

Barney McConnell, manager of AlNye Trucking states: "Throughout the 9 months of testing with the QMI sampling equipment, we found it be extremely accurate, helpful and easy to use. It is a great improvement to our current procedures for picking up milk and I see where it is a great time saver for us as haulers."

Darrell Bigalke, President of QMI, states: "This method of bulk tank sampling will improve milk quality. Decreased agitation will reduce the potential for oxidation of milk fat and reduce growth of aerobic bacteria."

The FDA memo (M-I-12-4), Standard Operating Procedures (SOPs) and installation information can be found on the QMI website at www.qmisystems.com

Effect of Storage Temperature on the Growth of Heat-Resistant Psychrotrophs (HRP) in Pasteurized Fluid Milk

Improvements in dairy processing equipment , effective sanitation and regulatory involvement have enabled the dairy industry to improve the average shelf life of fluid milk from 14 to 21 days. However, as pointed out in previous newsletters, now the barrier to increasing shelf life beyond 21 days is Heat-Resistant Psychrotrophs (HRP). These are bacteria that survive pasteurization and grow in fluid milk at refrigeration temperatures. HRP usually are sporeforming bacteria from generae *Bacillus* and *Paenibacillus.*

Previous newsletters also point out tests to identify sources of these bacteria and suggest some control measures to reduce the amount of contamination by these bacteria. University research has shown the HRP are present at low populations in raw milk. Studies conducted by QMI have also shown these bacteria are usually present at a low population (<1/100ml of raw milk). Our studies also pointed out a primary source of HRP is raw milk handling equipment.

Previous newsletters discussed how these types of bacteria do not grow well at temperatures below 40ºF. So a control measure for reducing the impact of these bacteria is cold storage temperatures for pasteurized milk products. To demonstrate the effect of storage temperatures, we calculated HRP populations using the formula for bacteria in exponential growth: $\log b = \log a + N \log 2$.

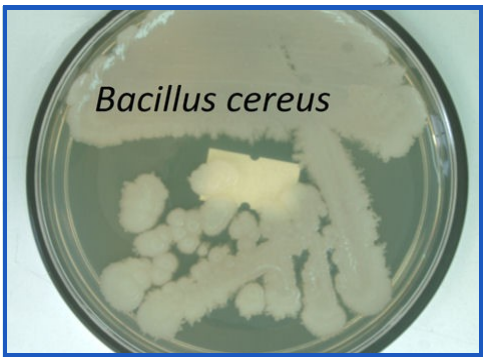
N = Number of generations
log a = Number of viable cells at zero time
log b = Number of viable cells at the end of a period

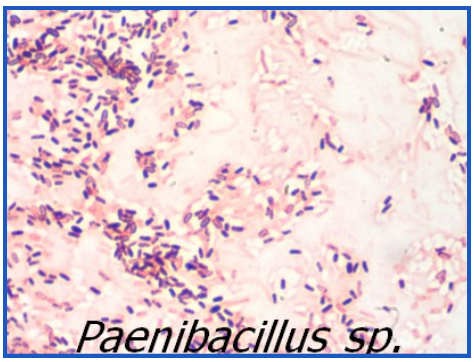
The calculations demonstrate that the effect of storage temperature on quality and shelf life is dramatic.

Effect of Storage Temperature on Growth of HRP

Storage Temperature	HRP Contamination Rate (zero time)	Likely Generation Time	Approx Time to Reach 10,000/ml	Approx Time to Reach 1,000,000/ml *
45F	1/100ml	12 Hours	10 Days	15 Days
40F	1/100ml	16 Hours	13 Days	20 Days
38F	1/100ml	20 Hours	17 Days	25 Days

***** Counts of less than 1,000,000/ml of pasteurized milk is a reasonable end of code specification for pasteurized milk stored at 45F.





Photos courtesy of Biotest Laboratories, Minneapolis, MN

QMI Manufacturing Standards

The QMI Aseptic Sampling System and QMI Safe-Septum products (part numbers 7027, 7027S, 7027P, 8080 and 8080S) are manufactured under rigorous quality standards. QMI's products are not medical devices, but are manufactured with a quality and supply contract at a facility registered under FDA, GMP, ISO 13485: 2005 and ISO/IEC 17025. A facility registered to these ISO standards must demonstrate its ability to manufacture medical devices and related services that consistently meet customer requirements. This accreditation covers laboratory testing, assembly, packaging, validation and sterilization of customer-supplied products. Liquid contact components of QMI septums comply with the Food Code of Federal Regulations (CFR) for the Food and Drug Administration (FDA), Title 21, Paragraph 177.26. The Aseptic Samplers are sterilized in compliance with ISO 11135-1: 2007 and applicable Federal and state regulations (FDA, NRC, EPA and OSHA). The samplers are sold for aseptic sampling or inoculation.

QMI Sampling Bag Assemblies (PN 2388, 2392, 2392P and 2394) are manufactured at facilities registered under ISO standards 13485: 2003 and conforms to FDA Regulation 21 CFR Part 820.

QMI stainless steel products are manufactured at metal fabricator facilities with extensive experience in the machining process needed to meet QMI's standards for both 7 and 12 port fittings and also is a 3-A authorized facility.

QMI products are authorized to display the industry standard 3-A logo (www.3-A.org), which includes an independent audit of our manufacturing practices.

Standard Operating Procedures (SOPs) available in English and Spanish for use of QMI products are on the QMI website (www.qmisystems.com) and in video format at www.youtube.com/qmisystems.

Visit our Website for a complete listing of our Regulatory Approvals, Validation Studies, QMI's 3-A Certificate and our Standard Operating Procedures (SOPs)

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News and Announcements:

QMI recently redesigned its website to better serve our customers. You now can request a quote and place orders online. You also can download dimensional drawings, QMI's Standard Operating Procedures (SOPs) and access QMI Newsletters.

Please visit our website at: **www.qmisystems.com**

Exhibiting Schedule for 2012:

American Society for Microbiology: San Francisco, CA , June 16-19, 2012

Society for Industrial Microbiology and Biotechnology: Washington, DC, August 12-16, 2012

World Dairy Expo: Madison, WI, October 2-6, 2012