Fall 2005

FDA and NCIMS Approves the QMI Aseptic Sampler for Direct Load Sampling

Changes in the way that milk is harvested, stored and transported have created sampling challenges. The application that has created the biggest sampling challenge is that of direct load producers (farmers). On these farms, milk is cooled through a plate cooler/chiller and pumped directly into farm pickup trucks or trailers. Because of the raw milk stratification that occurs, obtaining a representative aseptic sample has been nearly impossible.

QMI has developed a sampling system that is both aseptic and representative. This sampling method has been given full nationwide approval recently by the FDA and NCIMS program.

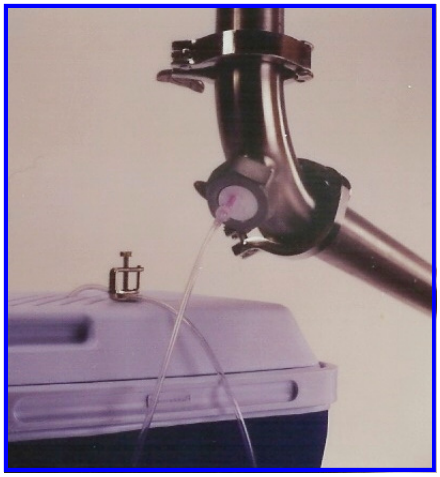
The potential for this approved method of sampling was first recognized by Tom Angstadt from the Dairy-Lea Corp. In 2003, Tom conducted research on a New York farm that showed this was a very accurate method of sampling direct load trucks. At that time, Tom received temporary approval for the use of the QMI Aseptic Sampler on that farm by the FDA and NCIMS program.

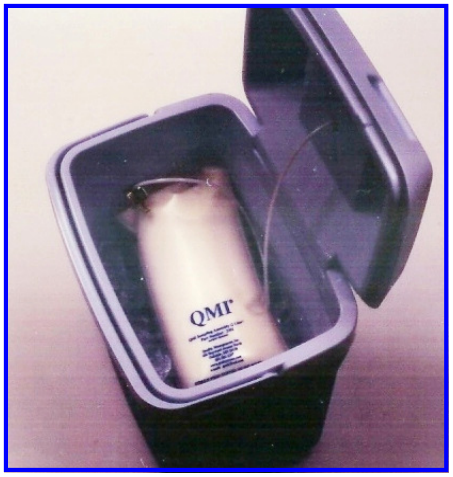
Nation-wide approval was contingent upon a third-party validation study. This study was conducted with the cooperation of Dale Heintz from Land O' Lakes, Inc. in Minnesota. The data were submitted to the FDA and the method was approved.

Approval for each farm requires that farmers follow FDA and NCIMS approved Standard Operating Procedures (SOP's). Basic installation of the QMI Aseptic Sampling System requires that an elbow be placed at the discharge of the plate cooler\chiller before the trailer. From the elbow, a piece of tubing kept as short as possible is attached to a sampling bag that is placed in a small cooler or refrigerator. The cost of the installation is less than $300.00

This method of line sampling is the same method currently used by hundreds of dairy farmers to obtain string samples (cow groups) for herd management. Studies conducted by the University of Minnesota and published in the J. Dairy Sci. show that this sampling method is very effective.

For additional information about Direct Load Sampling with the QMI Aseptic Sampling System, please contact us or visit our website at: www.qmisystems.com





QMI

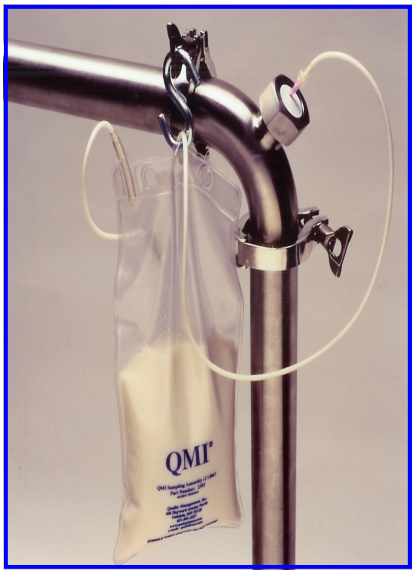
Special points of interest:

- QMI has developed a Sampling System that is both aseptic and representative.
- The QMI Sampling System was recently approved by the FDA and the MCIMS !
- Farmers use the QMI System to obtain string samples for herd management

Inside this issue:

WEBSITE: www.qmisystems.com

Psychrotrophic Sporeforming Bacteria and Today's Market Milk Quality



In previous Newsletters, we pointed out that the growth of heat-resistant psychrotrophic bacteria in milk can result in milk quality defects. Today's processing procedures have drastically reduced post-pasteurization contamination (gram-negative contamination). This has resulted in conditions which allow the growth of the gram-positive bacteria (heat-resistant psychrotrophs) which leads to quality defects.

We also pointed out that the spoilage potential of these bacteria is enhanced by elevated storage temperatures and by long shelf-life codes.

Typical laboratory and sensory conditions that accompany a psychrotrophic bacteria problem are:

1. Low initial Standard Plate Counts and no Coliforms,
2. Very good compliance with specifications for 7-day Keeping Quality test (95% or better compliance), and
3. Flavor defects and high bacteria counts at the end of code.

If a dairy plant finds that it is experiencing these types of quality defects, we suggest the following:

1. Extend the 7-Day Keeping Quality test to 9 or 10 days,
2. Determine the type of bacteria that are causing the spoilage at the end of code,
3. Utilize the QMI Composite Bag Sampling System to obtain a sample at the discharge of the High Temperature Short Time (HTST). This sample should be incubated in the bag until the end of code and a Standard Plate Count conducted. If high counts occur (greater than 1,000,000/ml), utilize bacterial identification procedures to determine if they are gram-positive bacteria.

"Growth of heat-resistant psychrotrophic bacteria in milk can result in milk quality defects"

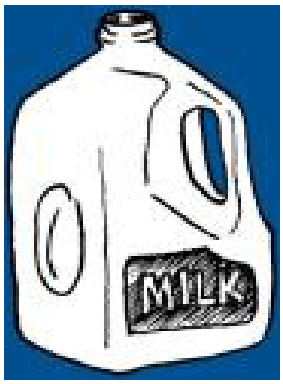
If the same type of bacteria are found in the bags samples as in the product samples, there is little doubt that the dairy plant is experiencing spoilage due to psychrotrophic sporeforming bacteria.

Although these procedures will not prevent quality defects, the following precautions can be taken:

1. Because psychrotrophic bacteria do not grow well at lower temperatures (40° or less), make sure that the product is stored and distributed at the lowest temperature practical,
2. Monitor raw milk quality. The limited research that has been conducted shows the likely source of these organisms is from poor farm sanitation (mud and dust are likely sources of these organisms). Additional research is needed to identify factors affecting the contamination and growth of these bacteria in milk.

Dr. Kathryn Boor and her associates at Cornell University are conducting research to identify sources of these organisms. They are utilizing today's newest research procedures including ribotyping (fingerprinting) to identify sources of these organisms. Dr. Boor also is conducting research to assess the effectiveness of the QMI Composite Bag System for monitoring these organisms.

When further information is available from Cornell, QMI will include information about this study in upcoming Newsletters.



FDA and NCIMS Approves a Modified Method of Dairy Farm Silo Sampling

Standard Methods For The Examination of Dairy Products allows for the use of the QMI Aseptic Sampler along with a needle and syringe to sample dairy farm silos and tanks. After the milk sample is taken with a syringe, the milk is transferred into a sterile sample container (a vial to be shipped to a laboratory).

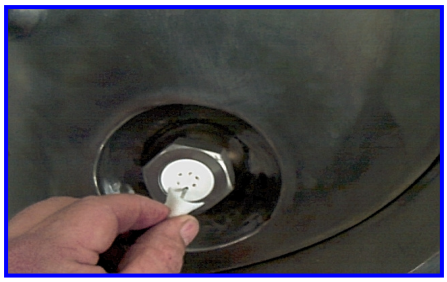
Recently the FDA and NCIMS approved a modified procedure. The sample procedure requires that the needle be placed in the QMI Sampler and that the stream of milk be collected in a sterile sample vial. This procedure eliminates the use of the syringe. The procedure is not unlike the procedure used with a petcock sampler. However, this procedure has the benefit of using the QMI Aseptic Sampler. This procedure is easier to use and less expensive because it eliminates the use of a sterile syringe.

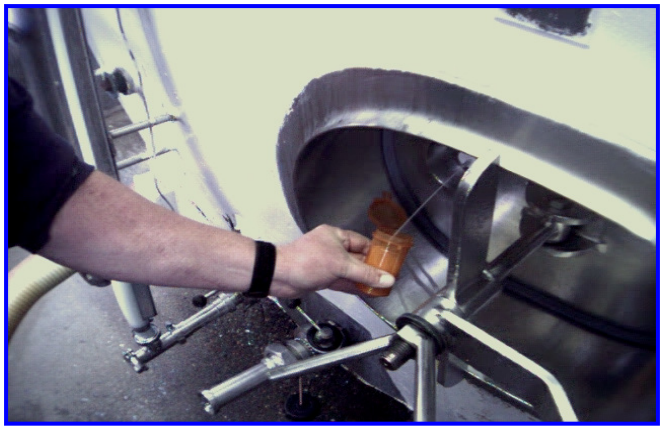
This procedure was introduced by Monty McGinnis and Dean van Tuinen from the Northwest Dairy Association. They collected samples using:

1. The QMI Aseptic Sampler and a syringe,
2. The QMI Aseptic Sampler and needle only, and
3. The standard petcock.

Analysis of the data showed that whether the sample was taken with the syringe or by the needle alone method, the results were comparable. It also showed that the samples taken with a needle were more representative than of those taken with the petcock.

Standard Operating Procedures for this method are available through QMI.





"Samples taken with a needle were more representative than of those taken with the petcock"

Available Resources through QMI

QMI SOP's:

- QMI Standard Operating Procedures manual for Farms
- QMI Standard Operating Procedures manual for In-Line Sampling (Direct Load Sampling)
- QMI Standard Operating Procedures manual for Dairy Plants
- QMI Standard Operating Procedures manual for the QMI Safe-Septum

PowerPoint Presentations:

- QMI Monitoring & Controlling Post-Pasteurization Contamination - PPC.
- QMI Installation Instructions for Dairy Farms
- QMI Raw Milk Sampling Update

Articles:

1. Field Validation of a Milk-line Sampling Device for Monitoring Milk Component Data: Article
2. Field Validation of a Milk-line Sampling Device for Monitoring Milk Quality and Udder Health: Article

Additional Resources:
Training and Promotional videos are also available upon request.

PLEASE CALL US OR VISIT OUR WEBSITE TO OBTAIN COPIES OF THESE RESOURCES.

WEBSITE: www.qmisystems.com

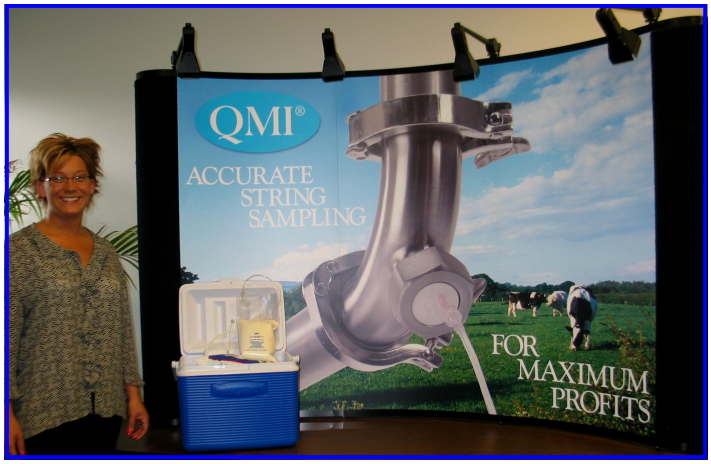
American Association of Bovine Practitioners— 38th Annual Conf.—September 22—24, 2005 - Salt Lake City, Utah

QMI

QMI exhibited at the 38th Annual Conference of the American Association of Bovine Practitioners in Salt Lake City, Sept. 22-24, 2005.

Our customers have found the QMI Aseptic Sampling System an effective tool for accurate component analysis as well as managing mastitis for improved milk quality.

The AABP is an international association of veterinarians organized to enhance the professional lives of its members through relevant continuing education that will improve the well-being of cattle and the economic success of their owners, increase awareness and promote leadership for issues critical to cattle industries and improve opportunities for careers in bovine medicine.



QMI also conducted presentations at the Upper Midwest Dairy Industry Association meeting in St. Cloud, MN on September 20, 2005 as well as the Kansas Milk Hauler's Association meeting on September 7th and 8th.

For Accurate Sampling.....
Every Time !

Qua;ity Management, Inc, (QMI)
426 Hayward Avenue North
Oakdale, MN 55128
Phone: 651-501-2337
Fax: 651-501-5797

E-mail: info@qmisystems.com

Quality Management, Inc.
426 Hayward Avenue North
Oakdale, MN 55128