

Timely intervention – combining the new and the established

By Dani Thon and Gary Bennett

Tank Watch provides immediate notification when bulk tank test results are outside acceptable ranges.

Technological advances allow precise field work (even in the dark), individual cow data on thousands of cows with the click of a button, and instant communication. Added to existing procedures, new tools give dairy producers the ability to react more quickly to milk quality fluctuations – preventing lost income.

Tank Watch is one such tool. It provides immediate notification when bulk tank test results are outside acceptable ranges.

With increasing emphasis on milk quality and premiums, it's becoming more important to know when bulk tank test information falls outside acceptable ranges, as soon as possible. Tank Watch combines bulk tank data with current technology – like cell phones and e-mail – to provide immediate notification of your bulk tank results.

Tank Watch is a web-based service that sends “alerts,” set at the level you want, to tell you when you have exceeded the limits. All members of the producer’s team – milk inspector, equipment dealer, nutritionist, veterinarian, etc. – should be made aware of the monitoring process and have input when setting the alert levels. You can choose to receive your alert via fax, e-mail or cell phone. More than one person on the farm can receive alerts, increasing the chances a problem will be addressed quickly.

In addition to the alerts, Tank Watch accumulates results over time, so you can monitor changes in equipment, procedure, staff or other factors affecting milk quality.

Reacting to an alert – preparation is essential

Once the producer has been alerted that an item has exceeded the limit, that team member most closely associated with the component should be contacted and steps taken to correct the problem. It's important to identify the cause. The symptoms of a broken leg and a stone in your boot may be the same – you can't walk – but the treatment and prognosis are very different. For many milk quality parameters, this is where bacteriological bulk tank culturing can be helpful, and often, essential.

• **BTSCC – Somatic cell count** increases in response to bacteria invading the udder and causing mastitis. Depending on herd size, one animal (or a

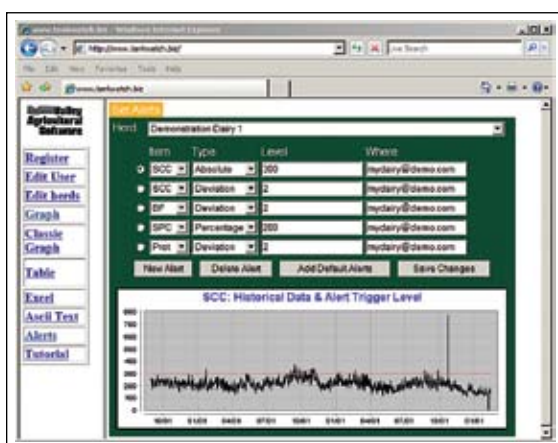


Figure 1 (above). The top portion of this screen shows the alerts that are set, the levels they are set at, and how the dairy would like to be notified. The bottom portion shows how often alerts levels exceeded the acceptable level over the past 15 months.

Figure 2 (right). One or more parameters can be graphed over time, or several parameters can be graphed against each other. This example shows SCC levels compared with protein levels.



few) can impact BTSCC tremendously.

- **SPC – standard plate count** is the number of bacteria present in the milk as it comes off the farm.

- **LPC – lab pasteurized count** is the number of bacteria in the milk after pasteurization.

- **Coli – coliform count** is the number of coliform (*E.coli* and others) bacteria present.

- **PI – preliminary incubation** count is the number of bacteria after the milk has been “incubated” at 55° F for 18 hours.

Since different bacteria originate from different sources on dairies (cooling, water, manure, cows, etc.) knowing what kinds of bacteria were present in the tank that caused the alert will help pinpoint the cause of the problem. In order to do this, however, we need a milk sample. **Figure 3** shows an on farm-freezer with samples from every tank that left the farm. Most haulers are glad to take an additional sample, date it and identify the tank and place it in a freezer. As long as the samples are kept frozen, bacterial numbers in the sample will not be affected, for up to 30 days in most cases. With a system like Tank Watch in place, the time needed to store samples can be greatly reduced.

Case report

One of our first lessons in the value of these tank cultures happened by chance. Early in 2000, a 550-cow herd was sampled for culture to determine the infection status in preparation for an upcoming project. Within days after the samples were taken, the producer’s milk inspector arrived to say the official monthly SPC had jumped from below 10,000 to over 100,000! While that sample was no longer available, we cultured the bulk tank and found an almost pure culture of *Streptococcus* species bacteria in very high numbers. From our recent survey results, we knew that 25 animals had shown *Strep* infections, and we re-sampled these animals to try to determine if the cows were the source. We found six animals shedding extremely high numbers of the same *Strep* (morphologically) that we saw in the bulk tank. Although three of these animals had elevated cell counts, none were above 500,000, and none of the animals showed clinical mastitis. The six cows were treated with intramammary antibiotics, and the effect



Figure 3. Frozen bulk tank samples are in larger vials on right. Clinical mastitis samples are in smaller vials on left.

on BTSPC was immediate and dramatic. Further proof came later in the project, when we realized the cooperative had been saving samples from every pickup. Bacteria counts and cultures were run on each. The graph in **Figure 4** shows the first few samples with low counts, and the spike due to the *Strep* species bacteria. The drop back to normal levels followed treatment.

With a service like Tank Watch, notification of variations can come even faster, before reaching violative levels. Culturing the milk allows bacteria identification, which targets resources (time and money) to the most likely cause of the problem.

TankWatch is available to any member of DairyOne, Dairy Farmers of America or their affiliated cooperatives, for \$9.95 per month. Considering what high bacteria and SCC cost in lost milk and premiums, it makes sense to take advantage of such a useful and convenient tool. You can register through the website at www.tankwatch.biz, or contact Dairy One at 1-800-344-2697.

Bulk tank cultures are available at the Quality Milk Production Services laboratories located in Ithaca, Canton, Cobleskill and Geneseo. Information is available at <http://qmps.vet.cornell.edu> or contact 1-877-645-5523.

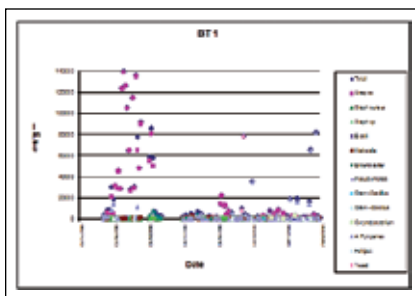


Figure 4. SPC on a bulk tank showing the total count and breakdown by organism.

QM² is the newsletter of Dairy One and Quality Milk Production Services published with the support of Schering Plough Animal Health



How to reach us...

Dani Thon is a member of the Dairy Management Resources Support Team at Dairy One Cooperative, Inc., and can be reached at dani.thon@dairyone.com.

Dr. Gary Bennett is the Sr. Extension Associate at the Canton Quality Milk Production Services Laboratory and can be reached at gjb9@cornell.edu or 1-877-645-5523.

QMPS is a program within the Animal Health Diagnostic Center, a partnership between the New York State Department of Agriculture and Markets and the College of Veterinary Medicine at Cornell.

The QMPS staff of veterinarians, technicians and researchers works with New York dairies to improve milk quality by addressing high somatic cell counts, milking equipment and procedures, and milker training in English and Spanish. QMPS also conducts research and teaching programs.

Reach the four regional QMPS laboratories at:

- Central Lab, Ithaca.
877-MILKLAB (877-645-5522)
- Eastern Lab, Cobleskill.
877-645-5524
- Northern Lab, Canton.
877-645-5523
- Western Lab, Geneseo.
877-645-5525
- QMPS website:
<http://qmps.vet.cornell.edu>

Dairy One is an information technology cooperative, providing DHI records services and herd management software to dairies throughout the Northeast and Mid-Atlantic region. A comprehensive laboratory network provides milk quality testing as well as forage, soil, manure and water testing.

Contact Dairy One Cooperative Inc. at 730 Warren Rd., Ithaca, N.Y. 14850. Tel: 800-344-2697. Email: dmr@dairyone.com
Website: www.dairyone.com