

HIGH QUALITY MILK

BETTER FOR EVERYONE

By Roger Beers

Day to day concerns such as fluctuating milk prices, increasing equipment costs and shrinking labor pools can make it easy to lose sight of long-term goals. The bottom line is that the dairy industry's number one goal should be to produce high quality milk.

In the United States, high quality milk enhances dairy product export, meets demands for increasingly higher food quality, and significantly extends shelf life. Milk SCCs of less than 100,000 can extend shelf life more than 30 days versus SCCs of 400,000. There's no doubt that high quality dairy products start with high quality raw milk.

"High quality" can be interpreted differently from producer to producer, so it's up to the dairy industry, as a whole, to support and promote milk quality education and deliver superior, results-driven services and products that improve milk quality. Technically, "high quality milk" meets or exceeds standards set by the Pasteurized Milk Ordinance (PMO). There are five tests that determine milk quality: Standard Plate Count (SPC), Preliminary Incubation Count (PIC), Lab Pasteurized Count (LPC), Coliform Count (COLI) and Somatic Cell Count (SCC).

How To Produce Better Milk

Producing milk that meets high standards requires focusing attention on three main areas of milk production:

- 1) Thorough equipment cleaning
- 2) Proper cooling of milk
- 3) Mastitis control

Cleaning equipment thoroughly and consistently helps keep test counts low and milk quality high. Traditional cleaning protocol starts with a warm rinse (110°F/43°C-130°F/54°C) followed by a detergent wash (160°F/71°C-170°F/77°C start, 110°F/43°C-120°F/49°C end temperature). A pH 3-4 acid rinse comes next, followed by sanitization, using 200 ppm sodium hypochlorite solution.

Producers can now benefit from new high-performance, single-cycle acid detergents, such as SOLO™ Acid Detergent. These single-cycle products have been proven to clean as effectively as traditional multi-phase detergents. Plus, they are

better for the environment and a producer's bottom line by reducing water use, energy, time and their associated costs.

Proper cooling of milk is another critical aspect of good milk production. Milk should be cooled to <38°F/3°C within 30 minutes after completion of the milking shift, with a blend temperature not to exceed 45°F/7°C. Plate coolers and chillers are recommended, as is cleaning the condensers on a regular basis.

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Mastitis Control

Mastitis, an inflammation of the mammary gland, costs the dairy industry more than \$2 billion every year¹, with each case costing an average of \$200 per cow.² Mastitis can appear clinical and outwardly noticeable, or sub-clinical and undetectable to visual inspection. Microorganisms entering any of the four teat canals can infect the udder and cause mastitis. Udder injuries can also be the cause.

There are two basic paths to mastitis prevention: Reducing the number of bacteria that come in contact with cows' teats, and destroying the bacteria before they can enter the teat canal. Along those paths, there are many methods of control and prevention, starting with keeping milking equipment in good working order.

Oil, belts and vacuum pump filters should be checked on a bi-weekly basis, and air regulators cleaned every 150 to 200 hours. Teat dippers, small yet important pieces of milking equipment can retain mastitis-causing bacteria after use, so washing and drying between milkings is highly recommended. Spray disinfection systems can also help reduce the spread of bacteria.

In addition, liner slippage can cause mastitis by creating teat end impacts and cross contamination. Using better qual-

ity liners, attaching clusters properly and changing liners as recommended will help avoid slippage.

Proper Hygiene and Procedure

Critical to mastitis control and quality milk, proper cow prep creates higher, faster peak flow rates, more complete milkout and less teat end damage. It also speeds up milker unit attachment time, ensuring a greater milk harvest.

Good prepping starts with the removal of excess soil from the teats. Fore-strip three to four squirts of milk, then check foremilk and the udder for any indications of mastitis. If clear, proceed with pre-dipping or a sanitizing wipe, then wipe and stimulate teats four to five strokes with a circular downward motion, using single-service towels.

Once letdown occurs, attach milker and adjust for proper alignment. Be sure takeoffs are calibrated correctly to avoid over-milking. Then dip teats immediately after milking with a premium, skin-conditioning disinfectant.

Producers should find a teat dip that offers powerful protection, yet is gentle to the teat skin. MASTICARE™, a new iodine-free pre- and post-milking disinfectant, has been research-proven to be a premium, irritation-minimizing teat dip. It eliminates the drawbacks of iodine and does not contain harsh oxidizers either,

such as chlorine bleach, chlorine dioxide or hydrogen peroxide.

There are additional hygiene steps that can help prevent mastitis, such as clipping or singeing udder hair, performing monthly cultures, sanitizing teat ends and cannulas prior to infusing antibiotics, and simply milking infected cows last, thoroughly sanitizing milker units between each infected cow.

Comfortable Environments Equal More Milk

In addition to preventing mastitis, a clean, dry environment can increase milk production. A comfortable environment entices cows to spend more time lying down, where blood flow in the udder increases by 30% to 40% and directly correlates to a rise in milk production.

Properly sized stalls and soft, slip-free cow beds provide the foundation of a good environment. The softer the bed, the more the cow will lie down. Clean, dry bedding provides cow comfort, as well as wards off mastitis by keeping bacteria away from the udder. In addition to these contact-environment measures, frequent gutter and alley cleaning is recommended, as is good fly control, proper ventilation and cooling, weather protection and eliminating stray voltage.





Dry Cow and Bred Heifer Mastitis Prevention

At least 75% of all environmental mastitis occurs during the dry period, and up to 90% of heifers freshen with mastitis. Substantial and lingering costs are associated with these statistics. Research shows that heifers that freshened with high SCCs had lower milk yields and higher SCCs throughout their lactation than heifers that freshened with low SCCs.

A few guidelines for assessing dry cow and bred heifer mastitis problems: If 15% or more of the herd has SCCs of 200,000 or greater at first test in lactation, a dry cow management problem exists. If 10% or more of heifers are freshening with SCCs of 200,000 or greater, or if more than 5% develop clinical mastitis in the first 30 days of lactation, there is a heifer management problem.

To combat these problems, start by cleaning and sanitizing freshening pens between each calving. Lay down clean, dry, large-particle bedding and use antibacterial bedding treatment in dry cow and heifer stalls/pens to help reduce environmental bacteria.

Test all cows at dry-off and culture and treat accordingly. Then dry treat all quarters on all drying-off cows and use a teat sealant.

High quality dairy products can't exist without high quality raw milk. Through ongoing research, education initiatives, and innovative technology, products and services, the U.S. dairy industry continues to raise its standards and its ability to safeguard the world's food supply.



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