Dairy MAX
YOUR Local Dairy Council

CRITICAL STEPS TO QUALITY MILK

Fact Sheet

Dairy farmers across the United States follow industry accepted best management practices to ensure that their dairy cows are healthy and well cared for, that the environment on and around their farms is protected, and that the milk they produce is safe and of high quality. While many factors affect the milk cows produce, here are the most critical steps for producing high-quality, wholesome and safe milk, starting at the source—the cow—and ending at the consumer's table.

HEALTHY, CLEAN COW

Conventional and organic milk production is similar in many ways: animals are well cared for and proper attention is given to the use of natural resources.

Dairy farmers depend on healthy cows. By adopting best management practices, such as milking sanitation and regular veterinary care, dairy farmers increase the well-being of their cow herd by reducing the risk of disease and infections.[1]

The past 25 years have brought a greater emphasis on disease prevention. Veterinarians play an important role in dairy cow health by helping farmers implement on-farm management systems and cow tracking devices. These technologies allow farmers to tailor disease prevention and treatment for individual animal needs.[2]

STRICT ON-FARM MILKING PROTOCOLS

Dairy farmers and workers follow several steps to assure the sanitary collection of milk from dairy cows. Today, human hands never touch the milk as it travels from cow to consumer.

On farms, the people who milk the cows wear gloves to prevent any transfer of possible pathogens from cow to cow. A sanitizing solution is put on each cow's teats to reduce the presence of any bacteria, thus reducing the possibility of its transfer to the milk. The cow's teats are then dried and the milking unit attached. After only five to ten minutes, the cow is done being milked and the equipment is removed. The cow's teats are cleaned again with a sanitizer containing skin conditioners. Following milking, equipment is washed and sanitized.[3]

QUICK COOLING AND TRANSPORTATION

Scientific studies on food safety were used to develop the U.S. Department of Health and Human Services' Grade 'A' Pasteurized Milk Ordinance. All milk sold commercially for direct consumption or use in processing must adhere to the rules in the Ordinance.

Dairy farmers are paid a premium for high-quality, safe milk. Milk collected from dairy cows is cooled to 45° F or less within two hours of the completion of milking in order to reduce the possibility of any bacteria growth. Milk produced by clean, healthy cows and under sanitary conditions contains a minimal number of bacteria immediately after milking. The practice of quick cooling assures that the most wholesome milk reaches the consumer.[4]

It takes about two days for milk to go from the farm to the retail store. Keeping that milk safe and wholesome involves many people, including dairy farmers, milk processors, and those who collect the milk at the farms. Milk is transported from the farm in insulated stainless steel tanker trucks, which keep the milk cold and follow sanitation standards. These bulk tankers are sealed to prevent tampering or contamination by an outside source.[5]

When milk is received at the processor, it must again be checked to ensure it has been kept at or below 40° F during distribution and has been delivered within 48 hours after the cow is milked. Once the milk passes inspection, it is pumped into large insulated vats. The milk is then processed through a number of steps including pasteurization, homogenization, and packaging before it is distributed to various retail stores, schools and households—all within about two days from the time of collection from the cow.[6]

TESTING FOR ANTIBIOTICS

Veterinarians help dairy farmers administer antibiotics effectively when they are needed to treat and cure an illness. When antibiotics are used, the treated cow's milk is discarded and does not enter the human food system. Antibiotics are not used routinely for dairy cows or added to their feed or water to promote growth.

Dairy farmers follow strict rules regarding the use of antibiotics. Every tanker load of milk is tested for commonly used antibiotics at the processing facility, and, in the rare event that a tanker tests positive, the milk is destroyed immediately and never reaches the consumer.[7] In fact, the farmer who is responsible must pay for that entire tanker load of milk, which can be thousands of dollars. During 2010, nearly four million tests (3,892,196) were conducted on milk samples to detect antibiotic or other drug residues. Inspectors found less than 0.03% positive (1,245) for residues, and any milk testing positive was destroyed—it never reached the consumer market.[8]

PASTEURIZATION

Pasteurization involves the heating of raw milk to a minimum of 145° F for 30 minutes or to 161° F or more for 15 seconds, followed by rapid cooling.[9] This step is very important for the continued production of safe milk. Research has shown that there is no significant difference in the nutritional value of pasteurized and unpasteurized milk.[10]

The Food and Drug Administration (FDA) and the Centers for Disease Control (CDC) recommend drinking only pasteurized milk, because raw milk—even from healthy cows and sanitary conditions—may contain harmful bacteria such as E. coli O157:H7, Listeria and Salmonella that can cause life-threatening illnesses. This recommendation has been affirmed by the American Medical Association and the American Academy of Pediatrics.[11] It is a violation of federal law to sell raw milk across state lines even if it has been packaged for consumer use. However, raw milk regulations vary by state, and some states allow the sale of raw milk within their borders.[12]

When properly cared for, milk generally stays fresh for two to three days after the "sell by" date.

PROPER CONSUMER HANDLING

The United States provides one of the safest food supplies in the world. With the U.S. Department of Agriculture, U.S. Food and Drug Administration, U.S. Environmental Protection Agency, and food, beverage and agricultural companies working together, the country's milk and dairy foods supply is becoming even safer. However, despite all of these safety factors, microorganisms may still exist at levels that present risks to consumers. Everyone—from farm to table—plays an important role in assuring the safety and wholesomeness of perishable food products like milk. Here are some helpful consumer tips from the National Dairy Council:[13]

- Examine containers for leaks and other damage when purchasing dairy products.
- Check the "sell-by" or "use by" date on product containers. The "sell by" date refers to how long the grocery store can offer the product for sale. When properly cared for, milk generally stays fresh for two to three days after this date. The "use by" date indicates how long the product's quality should be optimum.
- Pick up milk and other perishable dairy foods just before checking out of the store, especially in hot weather.
- Take dairy products home immediately after purchase and store at a refrigerated temperature of 40° F or less (without freezing).
- Do not allow milk to remain outside your refrigerator during or after meals.

Also refer to Dairy MAX fact sheets "Animal Care on Dairy Farm" and "Dairy Food Safety," as well as Dairy Council Digest's "Modern Dairy Farming Practices and Milk Quality: Myths & Facts."

This fact sheet was reviewed by John Fetrow, VMD, MBA; Mike Hutjens, PhD; Lloyd Metzger, PhD; JW Schroeder, PhD;

and Leo Timms, PhD, in November 2011 for its content and accuracy.

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