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NORTHWEST SUSTAINABLE DAIRIES

**MILK QUALITY AND SAFETY**

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## INTRODUCTION

Consumers want to know more about their food: where it comes from and how it was made. Producing safe, wholesome milk is of great importance to Northwest dairy farmers, and they proudly produce some of the highest quality milk in the nation.

Not only are dairy products some of the most nutritious foods available, they are also some of the safest. Milk and other processed dairy products account for less than 1% of all food-borne illness outbreaks. One of the primary reasons dairy products are so safe is because of the many quality and safety precautions established through every step of production and processing.

The milk produced on Northwest dairy farms must pass many requirements, inspections, and tests. The federal “Pasteurized Milk Ordinance,” a detailed document setting up criteria for milk safety inspections, is used in Oregon and Washington to regulate the production, transportation, processing, handling, sampling, examination, labeling, and sale of milk and milk products. Dairy farms, milk plants, receiving stations, transfer stations, milk tank truck cleaning facilities, milk tank trucks and bulk milk hauler/samplers are inspected by state agencies multiple times per year.

Achieving production of consistent high quality milk is accomplished by using appropriate *facilities*, *sanitary milk collection* practices and maintaining *milk safety*. This section details these commitments to producing safe, wholesome milk on Northwest dairy farms.

Further information about milk quality and safety practices can be found at the Oregon Department of Agriculture Dairy Program website ([oregon.gov/ODA/FSD/program\\_dairy.shtml](http://oregon.gov/ODA/FSD/program_dairy.shtml)) or in the Washington State Department of Agriculture Dairy Farm Manual ([agr.wa.gov/FoodAnimal/Dairy/DairyFarmManual.html](http://agr.wa.gov/FoodAnimal/Dairy/DairyFarmManual.html)).



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# FACILITIES

**Guiding Principle:** Dairy facilities should be designed and maintained to promote the collection of safe milk that is of the best quality possible.

## A. MILKING FACILITY

**Expectation:** A milking facility must be designed and maintained to promote cleanliness during milking. The interior of the milking facility should be kept clean. Floors, walls, ceilings, windows, pipelines, and equipment should be in good repair and free of filth and/or litter.

**Background:** Milking facilities are used to provide a safe, clean environment for cows and employees during milking. Milking cows in a clean facility helps minimize the opportunity for milk to become contaminated with environmental contaminants. Constructing the milking facility with materials that are easily cleaned promotes facility cleanliness. The design, construction, and maintenance of a milking facility must meet state and federal government guidelines.

*Verification:* Visual inspection of milking facility.

## B. MILK HOUSE

**Expectation:** The cooling, handling, and storage of milk must take place in a milk house that is separate from other facilities on the dairy. All surfaces and equipment in the milk house must be clean. The washing, sanitizing, and storing of milk containers and equipment should be completed in the milk house.

**Background:** A milk house provides a suitable, separate place for the cooling, handling, and storage of milk. It also serves as a place to wash, sanitize, and store milk utensils. A milk house should be separate from animal housing/barns and the milking parlor to act as a safeguard against exposure of milk and milk equipment to environmental contaminants such as dust and manure.

*Verification:* Visual inspection of milk house.

A well designed and constructed milking facility and milk house is important for maintaining cleanliness and producing safe, high quality milk.

Animal housing should be designed and maintained not only to maximize animal comfort but to ensure that milk is produced by clean, healthy cows.



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## C. HOUSING/BARNNS

**Expectation:** Facilities used to house milking cows should be cleaned regularly to promote animal cleanliness and hygiene.

**Background:** Milking clean cows reduces the opportunity for milk to be contaminated by dust, manure and/or mud. Not only is animal cleanliness and hygiene important for milk quality, it is also important for animal health and well-being. Manure should be regularly removed and bedding should be maintained to maximize cow cleanliness.

**Verification:** Visual inspection of animal housing/barns.

*Note: For more information about animal housing on Northwest dairy farms, please refer to the **ANIMAL CARE AND WELFARE** section of Northwest Sustainable Dairies.*



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# SANITARY MILK COLLECTION

**Guiding Principle:** On-farm practices should be implemented to ensure the milk collected and stored is safe and of the highest quality possible. Milk should be collected from **clean** cows in **clean** facilities with **clean** equipment and stored in **clean** storage units.

## A. MILKING EQUIPMENT AND UTENSILS

**Expectation:** All milking equipment, utensils, and containers used in the handling, storage or transportation of milk should be made of material that is easily cleaned and in good repair. Milking equipment must be cleaned, operated, and maintained for optimum cow health and milk production.

**Background:** Properly functioning milking equipment is important for milking procedures. Poorly operating equipment is uncomfortable for the cow and can interfere with proper milking procedures.

**Verification:** Visual inspection of milking equipment and utensils.

**Expectation:** Once milking has been completed, all utensils and milking equipment should be cleaned and sanitized immediately. Milking equipment must also be sanitized before each milking.

**Background:** Milk quality and safety can be compromised if milk is able come into contact with unclean containers, utensils or equipment. Therefore, it is important for all surfaces coming into contact with milk to be clean to minimize potential contamination.

**Verification:** Visual inspection of equipment and utensils.

Cleanliness is a crucial component of producing safe, high quality milk.

The milking facility and all to the equipment used in the production and storage of milk must be cleaned regularly to prevent potential environmental contamination.

Attention must be focused on the proper hygiene of the cows and personnel during milking times.



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## B. PERSONNEL CLEANLINESS

**Expectation:** Hands must be clean and dry before milking, before performing any milk house function, and immediately after the interruption of any of these activities. Individuals responsible for milking cows should wear clean outer garments while milking or handling milk, milk containers, utensils, or equipment.

**Background:** The reasons for clean hands of the individuals milking cows are similar to the reasons a cow's udder should be clean. Hands may have been exposed to dust and manure during the course of their normal duties on the farm and at milking time. Because workers' hands frequently come into contact with their clothing it is important for clean clothes to be worn during milking and while handling milk.

**Verification:** Visual inspection of milking procedure. Visual inspection of hand washing area (access to soap, hot water, and clean towels to dry hands).

## C. UDDER CLEANLINESS

**Expectation:** All milk cows' teats must be clean and dry before a milking machine is attached.

**Background:** High quality milk depends upon cow hygiene. Cleanliness of the teats is one of the most critical factors for protecting the quality of milk. Cleaning the teats before each milking removes dirt and manure that could potentially come in contact with milk. Cows' teats must be cleaned and sanitized with products that are safe for the teats, and teats must be dried before the milking machine is attached for milking.

**Verification:** Visual inspection of milking procedure. Visual inspection of product used for cleaning and sanitizing teats.

## D. ANIMAL HEALTH

**Expectation:** Milk to be sold for human consumption must only be collected from healthy cows.

**Background:** High quality dairy products can only be made from high quality milk that is produced and collected from healthy cows. If a cow shows evidence of abnormal milk, is ill, and/or is receiving antibiotic therapy, milk from that cow must not be collected for sale and must be discarded to ensure it does not enter the human food supply. Milk must be discarded until it is deemed fit for human consumption. Failure to discard milk for the appropriate amount of time is not allowed and jeopardizes the quality and integrity of milk.

**Verification:** Visual inspection of cows, treatment records, and milk reports.



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# MILK SAFETY

**Guiding Principle:** Milk should be properly stored in a safe, clean place so as to minimize the chance of any contamination.

## A. MILK COOLING

**Expectation:** Milk must be properly cooled to the appropriate temperature within the appropriate amount of time after each milking.

**Background:** Straight from the cow, the temperature of milk is about 97°F. Milk can spoil quickly at this temperature, so it is extremely important for the milk to be cooled quickly. Cooling milk quickly preserves its quality and integrity.

*Guideline: Milk must be cooled to 50°F or less within four hours of the commencement of milking, and to 45°F or less within two hours after the completion of milking. The blended temperature of the milk after the first milking and subsequent milkings must not exceed 50°F (Grade "A" Pasteurized Milk Ordinance, 2007).*

Dairy farmers implement multiple practices to ensure the safest milk is produced every day.

To further ensure the safety of milk, testing of milk for safety and quality must be completed from the time it leaves the farm until the time it arrives at the store.

**Verification:** Visual inspection of milk storage. Inspect temperature of milk.

## B. STORAGE OF MILK

**Expectation:** All milk to be sold for human consumption must be stored appropriately.

**Background:** Once milk has been collected and cooled, all milk must remain refrigerated until it is hauled from the farm. When milk leaves the farm, haulers keep the milk cool as it is taken to a plant for processing. These practices maintain milk quality and safety and ensure that milk used in processing is of the highest quality.

*Guideline: Milk must be stored at 45°F or less (Grade "A" Pasteurized Milk Ordinance, 2007).*

**Verification:** Visual inspection of milk storage. Inspect temperature of milk and temperature monitoring devices.



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## C. STORAGE OF ANIMAL MEDICINES

**Expectation:** All animal medicines must be stored in a location where they cannot contaminate milk, the milking facility or the milking equipment. Prescription medicines must be properly labeled by a licensed veterinarian, and milking cow medicine must be segregated from non-milking cow medicine.

**Background:** Animal medicines must be properly stored so they do not come into contact with milk or milking equipment and contaminate the milk supply. The presence of antibiotics in milk is illegal and unsafe for human consumption.

*Note: For more information about antibiotic use on Northwest dairy farms, please refer to the **ANIMAL CARE AND WELFARE** section of Northwest Sustainable Dairies.*

**Verification:** Visual inspection of medicine labeling, medicine storage area, and veterinarian prescriptions.

## D. STORAGE OF CHEMICALS

**Expectation:** Cleaners and sanitizers used for cleaning the milking equipment must be properly labeled and safely stored.

**Background:** Cleaners and sanitizers are used to maintain milking facility and equipment cleanliness. These cleaners and sanitizers are required to be properly stored and labeled to prevent contamination of milk.

**Verification:** Visual inspection of chemical storage and labeling.

## E. MILK TESTING

**Expectation:** Milk quality must be monitored on all farms. All milk that leaves the farm must be tested for quality and safety.

**Background:** Every single time milk is picked up on a dairy farm a sample of the milk must be collected. These samples are usually all analyzed by the milk handler and every six weeks by regulatory personnel for quality and safety. Multiple milk samples are collected from the time milk leaves the farm until it is bottled or manufactured into dairy products to monitor quality and ensure there is no antibiotic residue. At any point, if milk quality and safety does not meet milk processor, state, and/or federal standards this milk must be immediately discarded and must not be used for the manufacturing of dairy products.

**Verification:** Review records of milk sample results.



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## REFERENCES

Grade "A" Pasteurized Milk Ordinance. Revised 2007. U.S. Department of Health and Human Services. Public Health Service. Food and Drug Administration. Online. Available: [milkfacts.info/Federal/2007%20PMO-FINAL.pdf](http://milkfacts.info/Federal/2007%20PMO-FINAL.pdf).

**For more information, please contact Northwest Sustainable Dairies  
([www.northwestsustainabledairies.org](http://www.northwestsustainabledairies.org)).**

