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Dairy Farm Requirements – an Overview

The purpose of this document is to provide a basic overview of the requirements and standards that must be met for the production and sale of milk and dairy products in the state of Maine. It is not intended to replace nor supersede the official Department of Agriculture publication (Chapter 329: Rules Governing Maine Milk and Milk Products) from which it is derived, nor should it seem to take precedence over the judgment and advice of the State Dairy Inspectors who oversee the regulatory compliance of each producer and processor. It should be used as a guide only, in combination with on-site consultation and Department of Agriculture recommendations.

This document has been reviewed by the Maine Department of Agriculture.

For further information and with questions about this guide, please contact the coordinator of the MMDC – Keith Morgan-Davie – at the address given above. Further inquiries can be directed to:

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Selected Definitions:

1. Bulk Milk Hauler/sampler – any person who collects official samples and/or transports raw milk from a farm and/or raw milk products to or from a farm, milk plant, receiving station or transfer station and has in their possession a permit from any state to sample such products.
2. Butter – means any food product which is made exclusively from milk or cream or both, with or without common salt, and with or without additional coloring matter, and containing not less than 80% by weight of milk fat.
3. Buttermilk – a fluid product resulting from the manufacture of butter from milk or cream. It contains not less than 8.25% of milk solids not fat.
4. Cheese – the consolidated curd of milk used as an article of food.
5. Cream – the liquid milk product high in fat separated from milk... containing not less than 18% milk fat.
6. HACCP – means Hazard Analysis and Critical Control Point. It is a food safety control system based on technical and scientific principals that assure food safety.
7. Heat Treated – or “heat treatment” means processed by heating every particle of milk to a temperature of 145 degrees F for at least 30 minutes. It differs from “Pasteurized” in that the equipment used may not be certified for pasteurization, and no official record of the time and temperature is produced.
Note that milk so processed should NOT be considered to be “Raw”, since the temperature of the milk has been elevated to pasteurization levels for the required minimum time.
8. Homogenized – milk or a milk product that has been treated to ensure breakup of the fat globules such that... no visible cream separation occurs on the milk.
9. Milk – the lacteal secretion, practically free of colostrum, obtained by the complete milking of one or more healthy cows, goats, sheep, water buffalo or other hooved mammal.
10. Milk Distributor – any person who offers for sale or sells to another any milk or milk products in its final form.
11. Milk Plant – any place... where milk or milk products are in any way handled or prepared for distribution and subsequent sale.
12. Milk Producer – any person who operates a dairy farm and provides, sells or offers for sale milk or milk products.
13. Not Pasteurized – any milk or milk product that has not been subjected to the temperature and time requirements of pasteurization *using equipment designed for pasteurization* (emphasis added) Does not apply to cheese that has been aged at a temperature above 35 degrees F for at least 60 days prior to sale.
(NOTE: This definition does include “Heat Treated” products, which are neither “Raw” nor “Pasteurized”)
14. Pasteurization – or “pasteurized”, means the process of heating every particle of milk or milk product *in properly designed and operated equipment*, and holding at that temperature for the required minimum time (for vat pasteurization, 145 degrees F for 30 minutes).

15. Raw Milk – See “Not Pasteurized”.

Note: To much of the public, “Raw Milk” is assumed to mean milk which has been subjected to NO heating or other processing except cooling following extraction. For these customers, any process which involves heating, heat-treating, pasteurization or other manipulation would yield a product that is no longer “Raw” for their purposes. We do the public a disservice if we market a product as “Raw” only because the process used did not meet the standards of pasteurization as defined herein.

16. Sanitization – the application of any effective method or substance to a clean surface for the destruction of pathogens and other organisms as far as is practicable.

17. Ultra-Pasteurized – a product thermally processed, under pressure, at or above 280 degrees F for at least 2 seconds, for extended refrigerated shelf-life.

18. Yogurt – the food produced by culturing milk with lactic-acid producing bacteria. Approved sweeteners and flavors may be added.

NOTE: Most yogurt processes require that the milk be heated prior to culturing to assure proper curd formation, therefore most yogurts are not “raw foods” as discussed in item 15 under “Note”.

Section III – Licensing and Permits

- A. Licensing – required for all Bulk Milk Haulers (see Definitions) and milk plants (processors) producing milk or milk products for sale.
- C. Permits – Every milk producer (dairy farm)... shall hold a valid permit in accordance with... this rule. Permits are issued at no cost, and are not transferable. A permit authorizes a milk producer (farmer) to ship, sell and/or receive milk, and authorizes a Bulk Milk Hauler to transport raw milk and/or raw milk products to or from a farm or milk plant.

Section IV – Inspection

Each dairy farm and milk plant whose milk or milk products are intended for consumption, and each bulk milk hauler/sampler shall be inspected by the department. The Department shall:

- C. Inspect each milk plant (processor) at least once every three months.
- E. Inspect each Dairy Farm at least once every 6 months.
- F. Inspect each portable/temporary milking parlor whenever it changes location.
- H. In the event of a violation, a second inspection shall be required, but not sooner than 3 days after the violation.
- M. Every milk producer, hauler or plant operator shall permit access of officially designated persons to all parts of the establishment to ensure compliance with the rules. A plant operator shall furnish the Department, on request, a true statement of the actual quantities of milk and milk products purchased and sold, a list of all sources of such milk and milk products, and records of inspections, tests, and pasteurization time and temperature records.

Section V - Standards for Milk and Milk Products

All Grade A raw milk for pasteurization shall be produced, processed and pasteurized to conform with the following chemical, bacteriological and temperature standards, and the sanitation requirements of Section VI.

Milk and milk products not pasteurized shall be produced and processed to conform with the following chemical, bacteriological and temperature standards, and the sanitation requirements of Section VI.

All cheese products, except for aged cheese, shall be made from milk that has been heat-treated (or pasteurized, ed.).

Chemical, Bacteriological and Temperature Standards

Raw milk and milk products *for pasteurization*:

Temperature	Cool to 7 degrees C (45 degrees F) or less within 2 hours after milking. The blend temperature after the first and subsequent milkings may not exceed 10 degrees C (50 degrees F).
Bacterial limits	Individual producer milk not to exceed 100,000 per ml prior To co-mingling with other producer's milk. Not to exceed 300,000 per ml as co-mingled milk prior to pasteurization.
Drugs	No positive results on drug residue test. (see Section XII)
Somatic Cell Count	Individual Producer milk, not to exceed: Cow - 750,000/ml Sheep – 750,000/ml Goat - 1,000,000/ml

Pasteurized milk and milk products:

Temperature	Cooled to 7 degrees C (45 degrees F) or less and maintained there.
Bacterial limits	20,000/ml
Coliform	Not to exceed 10/ml
Phosphatase	< 350 milliunits/l. (indicates proper pasteurization)
Drugs	No positive results on drug residue test. (see Section XII)

Not Pasteurized milk and milk products sold to consumers:

Temperature	Cooled to 7 degrees C (45 degrees F) or less and maintained there.
Bacterial limits	50,000/ml
Coliform	Not to exceed 10/ml
Drugs	No positive results on drug residue test. (see Section XII)

Aged Cheese:

Temperature Aged cheese shall be aged at a temperature above 35 degrees F.

Water:

Source water (well, etc.)

Coliform < 1 (Presence/absence method)

Recirculating water (cooling systems, etc.)

Coliform < 1.1 (Most Probable Number Method)

Section VI – Sanitation requirements for production and processing

A. Sanitation requirements for Dairy Farms

1. Abnormal Milk

Animals showing evidence of abnormal milk based on bacteriological, chemical or physical examination must be milked last or in separate equipment, and the milk shall be discarded.

2. Milking barn, stable, or parlor – Construction

- a. Floors constructed of concrete **or equally impervious material** (emphasis added)
- b. Walls and ceilings of smooth material, in good repair, dust-tight, and be painted or finished in an approved manner.
- c. Separate pens for horses, calves and bulls.
- d. Well distributed natural and/or artificial light for day and/or night milking.
- e. Sufficient air space and circulation to prevent condensation and excessive odors.

3. Milking barn, stable, or parlor – Cleanliness

- a. The interior shall be kept clean.
- b. Swine and fowl must be kept out of the milking facility.

4. Livestock yards

- a. Graded to drain and have no standing water or accumulations of organic wastes (bedding and manure)., except that in loafing or housing areas, manure and bedding shall be removed or clean bedding added to avoid dirty udders and flanks.
- b. Waste feed can't be allowed to accumulate.
- c. Manure packs must be allowed to drain, and provide reasonably firm footing.
- d. Swine must be kept out of these areas.

5. Milkhouse or room – Construction and facilities

A milkroom of sufficient size shall be provided for the cooling, handling and storage of milk, and the washing, sanitizing and storing of milk containers and utensils.

- a. Floors constructed of concrete **or equally impervious material** (emphasis added), graded to drain and in good repair. Liquid waste shall be disposed of in a sanitary manner. Floor drains shall be accessible and shall be trapped **if** connected to a sanitary sewer (septic) system.
- b. Walls and ceilings of smooth material, in good repair, dust-tight, and be painted or finished in an approved manner.
- c. Adequate natural and/or artificial light and be well ventilated.
- d. The milkhouse shall be used for no other purpose than milkhouse operations. There can be no direct opening into living quarters or milking facility, except that direct opening into milking barn, stable or parlor is permitted when a tight-fitting, self-closing, solid door, hinged single or double-acting, is provided. Screened openings to clean (eg. outside) areas are permitted if they can also be closed to eliminate dust, etc.
- e. Water under pressure shall be piped into the milkhouse.
- f. Milkhouse shall be equipped with a two-compartment wash vat and adequate hot water heating facilities.

Note: Though the regs are a little scattered, other requirements for the milkhouse are also specified, including the separate hand-washing facilities which are usually included in the milkhouse. See Para. 16-19 inclusive below.

6. Milkhouse or room – cleanliness

All room, surface (ie. tables, etc) and non-product contact equipment surfaces and equipment must be clean. Only items directly related to milkroom activities are permitted in the milkroom. Room must be free of trash, animals and fowl.

7. Toilet

Every dairy farm shall be provided with a toilet, properly constructed, operated and maintained in a sanitary manner.

8. Water supply

Water for milkhouse and milking operations shall be properly located, protected and operated, and shall be easily accessible, adequate and of a safe, sanitary quality.

9. Utensils and Equipment – Construction

Multi-use containers and utensils shall be made of smooth, nonabsorbent, corrosion-resistant, nontoxic materials, and shall be easy to clean. All shall be in good repair. Multi-use woven materials shall **not** be used for straining milk. Articles intended for single use (ie. milk filters) shall not be reused.

10. Utensils and Equipment – Cleaning

Product contact surfaces of all containers, equipment and utensils used in the handling, storage or transportation of milk shall be cleaned after each use.

11. Utensils and Equipment – Sanitation

Product contact surfaces of all containers, equipment and utensils used in the handling, storage or transportation of milk shall be sanitized before each use.

12. Utensils and Equipment – Storage

All containers, equipment and utensils used in the handling, storage or transportation of milk, unless stored in sanitizing solutions, shall be stored to assure complete drainage and be protected from contamination prior to use. Filters are to be stored free of contamination.

13. Milking – Flanks, udders and teats

- Milking shall be done in a milking barn, stable or parlor.
- Flanks, udders, bellies and tails shall be free of visible dirt.
- Udders and teats must be clean and dry prior to milking.
- Teats shall be treated with a sanitizing solution just prior to the time of milking and shall be dry before milking.
- Sanitizing of teats is not required **if** the udder is dry and the teats have been thoroughly cleaned (not dry wiped) and dried (manually wiped dry) prior to milking. Wet hand milking is prohibited.

14. Protection from Contamination

- Milking equipment and facilities shall be located and operated to prevent any contamination of milk, equipment, containers and utensils. No milk shall be strained, poured, transferred or stored unless properly protected from contamination.
- After sanitizing, all product contact surfaces shall be handled so as to prevent contamination.

-Vehicles used to transport milk from the dairy farm to the milk plant shall protect their contents from the sun, freezing, and contamination. Vehicle shall be clean inside and out, and no substance capable of contaminating the milk shall be transported.

15. Drug and Chemical control

Effective measures shall be taken to prevent the contamination of milk, containers, equipment and utensils by cleaners and sanitizers, drugs and drug administering equipment. Treated lactating animals must be:

- a) Identified and/or
- b) Segregated or
- c) Handled in a manner to preclude the offering of adulterated milk for sale.

Note: This section is extensive. Please reference p. 49 Section VI, A., 15 of the regs. for further information about recordkeeping, training, etc.

16. Personnel -- hand-washing facilities

Adequate hand-washing facilities, including sink with hot and cold or warm running water, soap or detergent and individual sanitary towels shall be provided convenient to the milking facility.

17. Personnel – Cleanliness

Hands shall be washed clean and dried with an individual sanitary towel immediately before milking, before performing any milkhouse function, and immediately after the interruption of these activities. Clean garments must be worn while milking, or handling milk, milk containers, utensils or equipment.

18. Cooling

Raw milk shall be cooled to 7 degrees C (45 degrees F) or less within two (2) hours after milking. The blend temperature after the first milking and subsequent milkings shall not exceed 10 degrees C (50 degrees F).

19. Insect and rodent control

- Milk rooms shall be free of insects and rodents.
- Surroundings shall be kept neat, clean and free of conditions conducive to insect and rodent breeding.
- Effective measures shall be taken to avoid contamination of milk and milking equipment by insects, rodents, or chemicals used to control them.
- Feed shall be stored in a manner that does not attract birds, insects or rodents.

Section VII – Animal Health

A. Tuberculosis Testing Requirements

This section (p. 61) is very wordy. In summary, milk must be from TB free areas, or the herd/flock be certified as TB free, and any milk used for not-pasteurized production shall

be from herds/flocks tested for TB every 3 years, with a 2-month grace period on this testing.

B. Brucellosis Testing Requirements

1. All cow milk shall be from herds under a brucellosis eradication program, and four possible protocols are offered. Reference the regs.
2. Goat, sheep, water buffalo or other hooved animal except cow must meet one of four possible protocols. Reference the regs.

C. Other Testing Requirements

For other diseases the Department shall require such physical, chemical or bacteriological tests as it deems necessary.

Section VIII – Transferring; Delivery containers; Cooling

No transfer of milk or milk products is allowed in any location except a milkhouse, milk plant, receiving station or transfer station. Dipping or ladling of milk or milk products is not allowed.

Milk or milk products may only be sold in their original retail container. (There are exceptions for certain restaurant operations, etc. See p. 63)

Milk and milk products may not be sold if they have not been maintained at the required temperature. If stored in ice, the storage container must be properly drained.

Section X – Personnel Health

Persons infected with any disease capable of being transmitted to others through the contamination of food shall not work in a milk plant (or milk house, if directly marketing raw milk - Ed.) in any capacity that brings them into direct contact with finished products or product contact surfaces.

Section XI – Procedure when infection or high risk of infection is discovered

This lengthy section deals with what to do if there is possible contamination or risk of contamination by someone infected with a disease such as described in Section X. See the regs p. 64-66 and the Dept. of Agriculture for more information.

Section XII – Examination of Milk and Milk Products

The requirements for Sampling, Testing, Violations, Methods of Analysis, and Drug residue monitoring (pp. 66-75) are torturous and long, and do not lend themselves to a condensed form. In general, the Dept. of Ag. is charged with these duties, not the producer/processor, though all

parties should understand the basic requirements. In general, the sampling requirements for milk and milk products are:

1. Bulk tank milk must be tested for the presence of antibiotics at least 4 times during any consecutive 6 months.
2. Four separate samples in six months, except that 4 samples within 3 months is acceptable if at least 20 days elapsed between those samples.
3. Such samples will be taken while in the possession of the producer or distributor prior to delivery to store or consumer.
4. Milk and milk products produced seasonally are exempt from the 4 samples in 6 month rule. Frozen dairy desserts and eggnog are sampled once each month during the production season.
5. Water Supplies:
 - Water supplies for milk house and milking operations shall be tested every 3 years.
 - If the supply has a buried well casing seal, it must be sampled every 6 months.
 - Processing plant water supplies must be sampled every 6 months for IMS plants, and every 12 months for all others.
 - Farms and plants using municipal water supplies are exempt from water testing.