

PROVINCIAL

MILK PLANT STANDARDS

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FOREWORD

Milk may cause illness if not properly handled. Herd health, good hygienic practices, well constructed buildings, sufficient refrigeration, effective processing and subsequent handling of product, properly trained staff and the exclusion of vermin all contribute to producing a safe product for the consumer.

The Milk Plant Regulations require that all milk plants operate under a valid licence issued by the local authority. These regulations also require that the milk plant be constructed and maintained in a sanitary condition and operated in such a manner that the product produced within is safe for human consumption. The Provincial Milk Plant Standards are designed to assist operators to construct and operate a milk plant. As licensing is based on these standards, they should, therefore, be read in conjunction with The Milk Pasteurization Regulations.

Operators of category I milk plants should refer to Agriculture Canada's Dairy Plant Inspection Manual for reference.

Operators of category II milk plants should consider facilities separate from the domestic kitchen for the purposes of pasteurizing, packaging, and cleaning of equipment. If sanitation, the presence of pets, extensive traffic flow, or if other conditions exist that may affect the quality of the product, the local authority may require a separate facility as a condition of licensing.

I. DEFINITIONS:

For the purposes of this standard, the following definitions apply:

- ! "approved" means approval by the local authority.
- ! "equipment" means all tanks, valves, pipe fittings and necessary apparatus used in the receiving, processing, pasteurizing, packaging, storing, dispensing, transporting, or marketing of milk and milk products.
- ! "local authority" means a district health board that has been appointed under the Public Health Act, 1994.
- ! "potable water" means water that is safe for human consumption.
- ! "raw milk" means milk that has not been pasteurized in accordance with the Milk Pasteurization Regulations.
- ! "sanitize" means the process of reducing the number of bacterial contaminants on a food contact surface to a safe or relatively safe level by means of heat or chemical treatment.

II. CATEGORY I MILK PLANTS:

a) Site and Plan Approvals:

Before any work commences in constructing, extending, altering or establishing a milk plant, plans must be submitted to the local authority for approval.

The milk plant is to have a separate room for:

- a) milk receiving;
- b) can washing;
- c) milk and milk product processing, pasteurizing, cooling, storing, and packaging;
- d) case receiving and washing; and
- e) change rooms, washrooms and staff rooms.

To allow a comprehensive review, plans are to include:

- ! a site plan to show the property boundaries, location of buildings, access roadways, fences, auxiliary structures and separation distances from other industrial, commercial and residential buildings. The location of every milk plant should be free of any objectionable conditions including smoke, fumes, dust, odours, flies and any other condition which may affect the quality of milk;
- ! a layout of the building or buildings showing the arrangement and dimensions of rooms used for receiving, processing, pasteurizing, packaging, storing of milk or milk products;
- ! a flow chart showing the clean-in place system, if applicable;
- ! the location of sinks for cleaning and sanitizing of equipment and the location of handwash basins;
- ! detailed information regarding the type of construction and finishing materials of all rooms where milk or milk products are received, processed, pasteurized, packaged or stored;
- ! detailed information regarding the water supply and sewage disposal systems as required by and to ensure compliance with the Saskatchewan Plumbing and Drainage Regulations;
- ! details of the type of equipment used in the receiving, processing, pasteurizing, manufacturing, packaging, storing, and dispensing of milk. The equipment should be of an approved type and based on 3A Standards, where applicable; and
- ! other information as required depending on the complexity of the proposed operation.

All milk plants are to be constructed and operated in accordance with all applicable Acts, regulations and bylaws.

b) Construction Requirements:

Any rooms where milk or milk products are received, processed, pasteurized,

packaged or stored or where equipment is cleaned and sanitized or where sanitary facilities are located are to be constructed and maintained as follows:

1. General: The structure is to :
 - ! be of sound construction and in good repair;
 - ! be large enough to facilitate the maintenance of suitable standards of sanitation;
 - ! have walls of ceiling height, separating the production area from washrooms and dressing rooms.

2. Walls and Ceilings: To facilitate cleaning and to prevent contamination of the product, walls and ceilings are to:
 - ! have a smooth hard finish adequately protected to guard against damage from moveable equipment;
 - ! have surfaces impervious to water and cleaning compounds;
 - ! have joints which are sealed and coved;
 - ! be free of flaking or peeling material.

3. Floors: To facilitate cleaning and the control of pests, floors are to:
 - ! have a smooth hard finish sufficiently strong to resist damage from heavy, moveable equipment;
 - ! be impervious to water, other liquids and cleaning material;
 - ! be sealed and coved at the junction with the wall;
 - ! be adequately drained to a trapped floor drain.

4. Overhead Utility Lines: Overhead utility lines are to be installed in such a manner as to avoid contamination of products below. They should be insulated where necessary and be designed and finished to prevent the accumulation of dirt and minimize condensation, mold growth, flaking, and to facilitate cleaning.

5. Doors: All doors are to have a smooth, hard, non-absorbent finish suitable for cleaning and exterior doors should be self-closing.

6. Lighting: Adequate natural or artificial lighting is to be provided throughout the establishment. Where appropriate the intensity is not be to be less than:
 - ! 550 lux (50 ft/candles) in production areas;
 - ! 330 lux (30 ft/candles) in storage areas.

Light bulbs and fixtures suspended over any processing or production areas are to be of a safety type and protected to prevent contamination of milk or milk products in case of breakage.

7. Ventilation: All rooms are to be properly ventilated to prevent the accumulation of odours and/or condensation.
8. Dressing Room: To permit staff to store street clothing and personal belongings outside the production or processing area, a separate room, compartment, locker or cupboard, of adequate size, is to be provided for this purpose.
9. Storage Area for Cleaning Supplies: A separate room or locked cabinet is to be provided for the storage of janitorial equipment and supplies.
10. Washrooms: To facilitate good personal hygiene, washrooms are to be conveniently located, well ventilated, adequate in size, and are to be maintained in a sanitary manner.
11. Sinks with a Drainboard: To facilitate cleaning, a two or preferably a three-compartment sink with a drainboard should be installed to clean and sanitize equipment that is not cleaned by a clean-in-place system. The sinks should be of adequate size for the purpose intended. It is recommended the stainless steel variety be used.
12. Washbasins: Conveniently located facilities for handwashing purposes are to be provided wherever the process demands. All washbasins are to be connected to a hot and cold potable water supply.

Whenever washbasins are installed, the following are to be provided nearby:

- ! waste containers;
- ! soap from dispensers; and
- ! paper towels in dispensers, roller-type linen towels, roller-type cotton towels, or hot air dryers.

13. Plumbing Systems - Waterworks and Sewage Works: Water and sewage systems in milk plants are to be installed and inspected in accordance with the Saskatchewan Plumbing and Drainage Regulations.

c) Operational Requirements:

14. Licence Required: A milk plant shall not operate without a licence issued by the local authority.

15. Equipment: A milk plant is to have equipment of sufficient capacity for the maximum output of the plant.

All equipment used for the processing, pasteurizing, packaging or storing of milk is to be constructed of such material and maintained in such a manner that will not affect the quality of milk or milk product.

16. Testing of Milk or Milk Product: The operator of a milk plant must ensure laboratory tests of each batch of milk or milk product are conducted to ensure the quality of the product is in compliance with the requirements of the regulations. The operator shall maintain a record of these tests and make them available to the local authority upon request.

17. Handling of Returns: It is recommended milk plants not accept any returns. However, should returns be permitted, it is recommended these products be treated as a raw product and handled in such a manner so as not to compromise the quality of the fresh product in any way.

18. Cleaning and Sanitizing: Any equipment used for pasteurizing and subsequent handling of milk or milk products is to be given a bactericidal treatment by steam, hot water or chemicals or other approved disinfecting procedure prior to the day's operations and after each use. Equipment that is not cleaned by the clean-in-place (CIP) method or steam cleaned is to be:

- ! washed in the first sink compartment with an effective detergent at a wash temperature of not less than 44°C (111°F);
- ! rinsed in the second compartment in clean water at a temperature not less than 44°C (111°F);
- ! sanitized in the third compartment using one of the following bactericidal treatments:
 - i) immersion for at least one minute in clean water at a temperature of at least 82°C (179.6°F);
 - ii) immersion for at least two minutes in a lukewarm (24°C-44°C) chlorine solution of not less than 100 parts per million when freshly prepared and not less than 50 parts per

- million at any other time;
- iii) immersion for at least two minutes in a lukewarm (24°C-44°C) solution containing a quaternary ammonium compound having a strength of 200 parts per million; or
- iv) immersion for at least two minutes in a lukewarm (24°C-44°C) solution containing an iodine base sanitizing agent having a strength of at least 12 parts per million;

Where only hot water is used for sanitizing, a suitable and accurate thermometer is to be provided; and

Where chemicals are used for sanitizing, testing equipment is to be available.

19. Storage: Milk and milk products in a milk plant are to be adequately protected from contamination at all times.

Raw milk which is or which is likely to be held for more than 2 hours in the plant is to be cooled to 4°C or lower upon arrival and shall be held at this temperature until pasteurization begins.

Storage areas are to be of adequate size, and should have sufficient aisle space and wall clearance to facilitate cleaning and inspection.

Storage areas are to be dry and adequately ventilated.

To adequately protect milk and milk products from accidental contamination, items such as janitorial supplies must not be stored in the milk and milk product storage or processing areas.

20. Cleanliness and Repair: The operator of a milk plant is responsible for ensuring that it is kept clean and in good repair.

21. Garbage Disposal: Garbage is to be handled, stored and disposed of in an approved manner and in accordance with local bylaws. The operator is responsible for:

- ! providing an adequate number of covered garbage containers in convenient locations;
- ! keeping garbage containers clean and in good repair; and

! arranging for collection and disposal of garbage as often as is necessary to ensure unsanitary conditions are not created.

22. Vermin, Domestic Animals and Birds: A milk plant is to be operated free of any vermin, animals or birds. It is recommended the services of a licensed pest control operator be utilized to eliminate vermin infestations.

23. Employees: Every operator or employee who handles or comes in contact with milk or milk products or any utensil used in pasteurizing, or packaging of milk or milk products is to:

- ! be clean;
- ! wear clean garments and footwear;
- ! keep the hair confined;
- ! wash hands before commencing work, after use of sanitary facilities, after smoking or any other time hands become soiled or contaminated;
- ! when in direct contact with milk or milk product contact surfaces, wear hygienic hand coverings; and
- ! have a medical examination when, in the opinion of a local authority, it is required.

24. Recalls: Occasionally it may be necessary for any one of a variety of reasons to recall a product. A recall is an effective method of removing products from the market that is unfit for human consumption.

All milk plants are to have a coding and tracking system in place that will permit complete and rapid recall of any day's production. The plan is to include the:

- ! designation of authorized individuals to initiate the recall process;
- ! establishment of an emergency response team;
- ! development of communication policies, recall procedures, and techniques;
- ! establishment of comprehensive tracking systems;
- ! establishment of efficient retrieval systems;
- ! participation in simulation exercises; and
- ! evaluation of the process once completed.

25. Self-Evaluations: A local authority may require an operator of a milk plant to conduct self-evaluations at intervals determined by the local authority. The content of the self-evaluation will be determined by the local authority.

II. CATEGORY II MILK PLANTS:

a) Site and Plan Approvals:

Before any work commences in constructing, extending, altering or establishing a milk plant, plans must be submitted to the local authority for approval.

A category II milk plant is to have pasteurizing and packaging rooms separate from the milking and animal holding areas.

To allow a comprehensive review, plans are to include:

- ! a layout of the building or buildings showing the arrangement and dimensions of rooms used for pasteurizing, packaging and storing of milk as well as the areas where equipment is washed and sanitized;
- ! detailed information regarding the type of construction and finishing materials of the surfaces (floors, walls and ceiling) of the areas described above;
- ! detailed information regarding the water supply and sewage disposal systems as required by and to ensure compliance with the Saskatchewan Plumbing and Drainage Regulations;
- ! a description of the equipment cleaning methods (i.e. two or three compartment sinks) and the location of this equipment;
- ! the location of a handwash basin for handwashing purposes;
- ! a description of the type of equipment used in the pasteurizing and packaging of milk;
- ! other information as required depending on the complexity of the proposed operation;
- ! all milk plants should be constructed and operated in accordance with all

applicable Acts, regulations and bylaws.

b) Construction Requirements:

Any rooms where milk is pasteurized, packaged or stored or where equipment is cleaned and sanitized or where sanitary facilities are located are to be constructed and maintained as follows:

1. General: The structure is to be:
 - ! of sound construction and in good repair; and
 - ! large enough to facilitate the maintenance of suitable standards of sanitation.
2. Floors, Walls and Ceilings: To facilitate cleaning and to prevent contamination of the product, floors, walls and ceilings are to:
 - ! have a smooth, hard finish that is impervious to water and cleaning compounds;
 - ! have joints which are sealed and coved;
 - ! be free of flaking or peeling material.
3. Overhead Utility Lines: Overhead utility lines should be installed in such a manner as to avoid contamination of products below. They should be designed and finished to prevent the accumulation of dirt and minimize condensation, mold growth, flaking, and to facilitate cleaning.
4. Doors: All doors should have a smooth, hard, non-absorbent finish that can be easily cleaned and exterior doors should be self-closing.
5. Screens: Openings to the outside air should be effectively screened.
6. Lighting: Adequate natural or artificial lighting should be provided throughout the establishment.

Light bulbs and fixtures suspended over any processing or production areas should be of a safety type and protected to prevent contamination of milk in case of breakage.
7. Ventilation: All rooms should be properly ventilated to prevent the accumulation of odours and/or condensation.

8. Storage Area for Cleaning Supplies: A separate room, cabinet or area should be provided for the storage of cleaning supplies.
9. Sink with a Drainboard: To facilitate cleaning, a two-compartment or preferably three-compartment sink with a drainboard is to be installed to clean and sanitize equipment. The sinks should be of adequate size for the purpose intended. It is recommended the stainless steel variety be used.
10. Washbasins: A conveniently located washbasin is to be provided for handwashing purposes in the areas where milk is pasteurized and packaged. All washbasins are to be connected to a hot and cold potable water supply.

Whenever washbasins are installed, the following are to be provided nearby:

- ! waste containers;
- ! soap from dispensers; and
- ! paper towels in dispensers, roller-type linen towels, roller-type cotton towels or hot air dryers.

11. Plumbing Systems - Waterworks and Sewage Works: Water and sewage systems in milk plants are to be installed and inspected in accordance with the Saskatchewan Plumbing and Drainage Regulations. Water used for drinking or milk processing shall be potable.

c) Operational Requirements:

12. Licence Required: A milk plant shall not operate without a licence issued by the local authority.
13. Testing of Milk: Operators are to conduct tests to determine the bacteriological quality of their product. The local authority will assist in determining the type and frequency of these tests.
14. Equipment: All equipment used for the pasteurizing, packaging or storing of milk is to be constructed of such material and maintained in such a manner that will not affect the quality of milk.
15. Packaging: Milk containers are to be designed, constructed and maintained to prevent contamination of the milk.

16. Labelling: Labels are to include the following information:

- a) common name;
- b) quantity or weight;
- c) ingredient;
- d) name and address of producer;
- e) durable life date of product.

17. Cleaning and Sanitizing of Equipment: Milk contact surfaces are to be:

- ! washed in the first sink compartment with an effective detergent at a wash temperature of not less than 44°C (111°F);
- ! rinsed in the second compartment in clean water at a temperature not less than 44°C (111°F);
- ! sanitized in the third compartment using one of the following bactericidal treatments:
 - i) immersion for at least one minute in clean water at a temperature of at least 82°C (179.6°F);
 - ii) immersion for at least two minutes in a lukewarm (24°C-44°C) chlorine solution of not less than 100 parts per million when freshly prepared and not less than 50 parts per million at any other time;
 - iii) immersion for at least two minutes in a lukewarm (24°C-44°C) solution containing a quaternary ammonium compound having a strength of 200 parts per million; or
 - iv) immersion for at least two minutes in a lukewarm (24°C-44°C) solution containing an iodine base sanitizing agent having a strength of at least 12 parts per million;
- ! where only hot water is used for sanitizing, a suitable and accurate thermometer is to be provided; and
- ! where chemicals are used for sanitizing, testing equipment is to be available.

Any equipment used for pasteurizing and subsequent handling of milk is to be given a bactericidal treatment by steam, chemicals, hot water or other approved disinfecting procedure prior to the day's operations and after each use.

18. Cleanliness and Repair: The operator of a milk plant is responsible for ensuring that it is kept clean and in good repair.

19. Storage: Milk in a milk plant is to be adequately protected from contamination at all times.

Raw milk which is or which is likely to be held for more than 2 hours before pasteurized is to be cooled to 4°C or lower until pasteurization begins.

20. Garbage Disposal: Garbage is to be handled, stored and disposed of in a manner that will not attract vermin or create unsanitary conditions.

21. Vermin, Domestic Animals and Birds: A milk plant is to be operated free of any vermin, animals or birds. It is recommended the services of a licensed pest control operator be utilized to eliminate vermin infestations.

22. Employees: Every operator or employee who handles or comes in contact with milk or any utensil or equipment used in pasteurizing, or packaging of milk is to:

- ! be clean;
- ! wear clean garments and footwear;
- ! keep the hair confined;
- ! wash hands before commencing work, after use of sanitary facilities, after smoking or any other time hands become soiled or contaminated;
- ! have a medical examination when in the opinion of a local authority it is required; and
- ! not process milk when experiencing diarrhea, abdominal cramping, vomiting or other symptoms possibly indicating a disease that could spread through milk.

23. Training: Where a public health officer feels an operator may benefit by attending a safe milk handling workshop offered by the local authority the public health officer may require such as a condition of licensing.

24. Recalls: Occasionally it may be necessary for any one of a variety of reasons to recall a product. A recall is an effective method of removing products from the market that is unfit for human consumption.

All milk plants are to have a coding and tracking system in place that will permit complete and rapid recall of any day's production.

Returned milk must not be reprocessed and repackaged for human consumption.

25. Self-Evaluations: Operators of milk plants are required to complete self-evaluation forms (refer to Appendix) at intervals determined by the local authority.

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