

National Dairy Code

Production and Processing Requirements

Ninth Edition (Part I)

Revisions approved October 30, 2024

Disclaimer

The National Dairy Code is a national, technical reference document (not to be interpreted as regulations) that provides guidance to governing bodies, owners and employees to produce safe and suitable dairy products. It provides requirements for milk production and transportation as well as processing of dairy products to promote safe practices and sound management.

All government jurisdictions are encouraged to review and utilize the National Dairy Code as guidance in the development and revision of their applicable legislation. Since its inception, the Code has served as a national regulatory template for milk production requirements for foreign country audits as well as in Canada's equivalency discussions with the USA, the EU and other foreign country governments.

Introduction

The Canadian Food Inspection System (CFIS) was created in 1994 for the development of national food safety codes. This was a collaborative process between federal, provincial and territorial governments. The objectives of CFIS are to facilitate harmonization, streamline the inspection process, reduce pressures on industry and provide a system that is flexible, responsive and timely. Working committees have been established to develop model regulations and Codes. The National Dairy Code was completed by governments, industry and other dairy stakeholders in 1997 and has been amended nine times as of October 30, 2024. Regular review and revisions of the Code are proposed by an active dairy stakeholder committee to strive for continuous improvement as newer knowledge and technologies become available.

Short Title

1. This Document may be cited as the National Dairy Code - 1997, revised October 30, 2024.

Interpretation

2. In this Code,
“automatic milking system (AMS)” For the purposes of this document, an AMS is a milking system for unattended milking of identified animals and includes all milking units, milking apparatus, buffer tanks, bulk tanks, equipment cleaning apparatus, and all hardware and software components for operating and monitoring. AMSs include stationary and mobile models. Mobile models are also referred to as ‘tie-stall AMSs’;

“bulk milk grader” means a person authorized by the Regulatory Authority to perform the duties of a bulk milk grader as described in this Code and who holds a Bulk Milk Grader’s Permit, Certificate, or Licence;

“bulk milk grader’s permit, certificate or licence” means a permit, certificate or licence issued by a Regulatory Authority for the performance of duties as a bulk milk grader as described in this Code;

“bulk tank” means a tank that stores the milk that is being offered for sale and is capable of cooling or maintaining the pre-cooled milk between 0 and 4°C, agitating and measuring the volume of the milk (includes horizontal bulk tank (HBT) and vertical bulk tank (VBT));

“dairy animal” means cows, goats and sheep and such other species, as may be kept for the purposes of milking;

“dairy barn” means a barn in which housing (free stall, loose or tie-stall), feeding and holding areas are used in conjunction with a milking system;

“dairy farm” means a farm where dairy animals are kept for milking and from which milk is marketed or sold for human consumption, and includes all buildings, yards and premises occupied or used in connection with the production of milk;

“dairy plant” means a premises, building or structure, where milk is received and/or dairy products are prepared;

“free stall barn” means a building with alleyways and individual stalls where dairy animals are housed and have free access to stalls;

“inhibitor” means any substance, other than a bacterial culture, that does not occur naturally in milk and inhibits the growth of microorganisms in milk;

“loose housing barn” means a structure with a minimum of three walls and a roof that contains no stalls;

“milk” means a normal lacteal secretion free of colostrum obtained from the mammary gland of a dairy animal;

“milk house” means a building or structure where:

- (a) milk is cooled and/or stored; and
- (b) milking equipment is cleaned, sanitized, and stored;

“milk marketing agency” means a provincial or territorial agency or other such organization or entity, as is defined by the legislation applicable in each province or territory, that has the legislative authority with respect to the marketing of milk;

“milk room” A room that contains the bulk tank port(s) and bulk tank controls and is separated from the milk house or equipment room;

“milk parlour” means an enclosed area or structure where milking occurs but where no animals are housed;

“milking area” means a segregated area within a dairy barn where animals are milked;

“producer” means a person who markets or sells milk that has been produced by a herd of dairy animals owned or controlled by the producer;

“raw milk” means milk that has not been heated beyond 40°C or undergone any treatment that has an equivalent effect;

“Regulatory Authority” means the government authority or their representative responsible for the administration and enforcement of provincial regulations related to the contents of this Code;

“sale” includes trade, or barter;

“time-temperature recorder (TTR)” is a device that provides constant electronic milk temperature monitoring and is usually connected to a milk storage tank (e.g., bulk tank, buffer tank) or pipeline. A TTR measures the milk or wash water temperature over a specified time period, records it and gives alarms when temperatures are out of acceptable range.

“transfer depot” means a building or shelter where milk is transferred from one transport vehicle to another or from one vehicle to a vertical tank;

“transport vehicle” means a vehicle used for the transport of milk and includes a bulk milk truck.

Application

3. This Code applies to all dairy farms, dairy plants, dairy process workers, producers and their personnel, bulk milk graders, and owners and operators of transport vehicles.

Where milking is conducted by an Automatic Milking System (AMS) refer to the **Automatic Milking System Guidelines** for additional requirements.

PART I**REQUIREMENTS FOR PREMISES AND EQUIPMENT****Construction, Arrangement and Operation of Production Establishments**

4. The areas and yards surrounding a dairy barn and milk house shall be:
 - (a) configured and maintained in a manner that will not contribute to contamination of milk;
 - (b) kept free of refuse and animal and vegetable wastes; and
 - (c) well drained.

5. In order to permit passage by a transport vehicle, the driveway to a milk house shall be maintained by the producer so that it is:
 - (a) accessible in all weather conditions; and
 - (b) free of animals, animal waste, locked gates and other obstacles.

Dairy Barn

6. A dairy barn shall be:
 - (a) provided with a water source having non-detectable levels of *Escherichia coli* bacteria per 100 ml. for milking operations;
 - (b) constructed and ventilated so as to prevent water condensation and the accumulation of odours; and
 - (c) equipped, where necessary to clean equipment, with an equipment wash sink(s) that is conveniently located and in a clean environment.

7. (1) A dairy barn shall be designed, and constructed in a manner that:
 - (a) permits the milking operations carried on therein to be performed under sanitary conditions;
 - (b) minimizes the contamination of milk;
 - (c) minimizes damage by dairy animals;
 - (d) minimizes the entrance, nesting and breeding of pests; and
 - (e) prevents injuries to dairy animals.

- (2) A dairy barn shall be constructed of materials that:
 - (a) are durable;
 - (b) will permit the effective cleaning of all interior surfaces; and
 - (c) are free of any toxic or noxious substances.

- (3) Subject to subsection (4), floors, alleyways, platforms, gutters and mangers of a dairy barn shall be:
 - (a) constructed of concrete or other impervious materials in a manner to prevent cracking; and
 - (b) maintained in good repair and free of standing water.

- (4) Subsection (3) does not apply to bedded areas of loose housing barns or stalls in a free stall barn.
 - (5) Subject to section 23(2), a dairy barn shall have manure removed from alleyways, gutters and holding areas on a regular basis such that dairy animals remain clean; and
 - (6) Where required in a dairy barn, stalls shall be designed and maintained such that dairy animals are kept clean, dry and comfortable.
8. (1) A tie-stall dairy barn shall:
- (a) have walls and ceilings that are hard, cleanable, and light-coloured;
 - (b) be provided with light that is shielded so as to prevent breaking glass from falling into open milk containers; and
 - (c) be illuminated in a manner that permits the person conducting the milking operation to:
 - (i) assess the cleanliness of the animals and udders, and condition of the milk while milking; and
 - (ii) perform milking operations in a sanitary manner.

Milking Parlour

9. (1) A milking parlour shall:
- (a) be equipped with or have ready access to a pressurized hot and cold running water system having non-detectable levels of *Escherichia coli* bacteria per 100 ml. and that is protected from any source of contamination for the water that comes in contact with milk equipment;
 - (b) be equipped with pipes, hoses and nozzles that are installed and arranged in a manner that permits cleaning of the parlour and equipment;
 - (c) if necessary, be equipped with a ventilation system to eliminate condensation and odours that may affect the organoleptic characteristics of the milk;
 - (d) if necessary be equipped with a heating system to prevent freezing;
 - (e) be illuminated in a manner that permits the person conducting the milking operation to:
 - (i) assess the cleanliness of the animals and udders, and condition of the milk while milking; and
 - (ii) perform milking operations in a sanitary manner;
 - (f) have walls and ceilings that are:
 - (i) covered with hard, smooth, cleanable, light-coloured, waterproof material; and
 - (ii) free of indentations, loose scale, pitting and cracks;
 - (g) have the lower portion of the walls, above floor level, constructed of concrete or other impervious material;
 - (h) be kept free of animals other than those of the dairy animal species kept for the purposes of milking; and
 - (i) be kept free of animals except during milking times.
- (2) Doors, windows and all openings leading to the outside must be designed and maintained to minimize the entry of insects, birds, rodents or other pests.

- (3) The floor, ramps and platforms of a milking parlour shall:
 - (a) be constructed of concrete or other impervious material;
 - (b) be free of cracks and crevices;
 - (c) be constructed to allow effective cleaning; and
 - (d) have covered drains, equipped with traps, that are sloped so as to flow into a wastewater drainage system.
- (4) A milking area must meet the requirements of item 9 (1) a), b), c), d), e), h), i) and 9 (3) a), b), c), d) and if applicable, the requirements of paragraph 9 (2).

The milking area must be separated from the rest of the dairy barn by a holding area with a clean floor free from accumulation of manure.

Milk House

10. (1) A producer shall have a milk house used exclusively for:
 - (a) cooling and storing milk; and
 - (b) cleaning, sanitizing, storing materials and equipment used in the production and handling of milk.
- (2) A milk house shall:
 - (a) be fitted with solid, self-closing, tight-fitting doors that are kept closed when not in use where the milk house enters directly into a dairy barn or housing area;
 - (b) be located, constructed and maintained so as to prevent any objectionable odours from entering the milk house; and
 - (c) be accessible from an entry point that does not require travel through animal traffic areas.
- (3) The floors of a milk house shall:
 - (a) be constructed of washable, waterproof material and be sealed at the intersection with the walls;
 - (b) be free of indentations, cracks or crevices;
 - (c) be sloped to covered drains, equipped with traps, to ensure the drainage of wastewater;
 - (d) have a wastewater drainage system; and
 - (e) have a concrete or impervious curb rising above the floor.
- (4) A milk house shall:
 - (a) be equipped with a pressurized hot and cold running water system having non-detectable levels of *Escherichia coli* bacteria per 100 ml.:
 - (i) with pipes, hoses and nozzles installed and arranged in a manner that permits cleaning and rinsing of the milk house floor, equipment, and bulk tank; and
 - (ii) that is protected from contamination to the water;
 - (b) where necessary, be equipped with a ventilation system to eliminate condensation and odours that may affect the organoleptic characteristics of the milk;

- (c) where necessary, be properly heated to prevent freezing;
 - (d) have sufficient lighting to permit milk handling operations, inspection, cleaning and sanitizing of the premises and equipment;
 - (e) have walls and ceilings that are
 - (i) covered with hard, smooth, washable and waterproof material; and
 - (ii) free of indentations, pitting and cracks; and
 - (f) be kept free of animals.
- (5) Lights in a milk house shall be protected by shatterproof covers or coatings.
- (6) All exterior doors, windows and openings of a milk house shall be closed or fitted with screens or other devices to prevent the entry of pests.
11. (1) A milk house shall contain:
- (a) a sink for washing hands;
 - (b) if no other equipment washing sinks are located in areas that are in conjunction with the milking equipment, a separate equipment washing sink
 - (c) the necessary materials for sanitary washing and drying of the hands; and
 - (d) a cupboard, stands or shelves of non-corrodible material located off the floor to store the materials, and equipment used in the production and handling of milk.
- (2) In facilities with a milk room, the milk room must be equipped with a sink supplied with pressurized hot and cold running water having non- detectable levels of *Escherichia coli* bacteria per 100 ml and the necessary materials for sanitary washing and drying of the hands, and for cleaning utensils as necessary.
- (3) All sinks referred to in subsections (1) and (2) shall be equipped with a trapped drain connected to a wastewater drainage system.
- (4) Where a facility is provided with a washroom, the washroom shall be located and maintained so that it does not constitute a source of contamination for the milk or equipment.
12. (1) All cleaning materials, used in the production and handling of milk, shall be stored in a location and manner that will not contaminate the milk.
- (2) No pesticides, or other toxic products, other than those that are directly related to the operation of a milk house, shall be stored in a milk house. Those pesticides and toxic products shall be stored and used in a manner that will not contaminate the milk.
- (3) All veterinary drugs stored in a milk house, shall be kept in a closed cupboard or refrigerator in a manner that prevents contamination of the milk.

13.
 - (1) A milk house shall be designed in a manner that:
 - (a) permits the installation of a bulk tank having free space around it to allow for the required operations such as inspection, transfer of milk and cleaning;
 - (b) the ceiling is high enough to permit the inspection and sampling of the milk as well as the reading and complete removal of the gauge or dipstick of the bulk milk tank.
 - (2) In cases where milk is shipped from the bulk tank, a milk house shall be equipped with a hose port that is kept closed when not in use, located in a wall close to the bulk tank outlet through which the hose connecting the bulk milk truck to the bulk tank may pass to permit collection.
 - (3) There shall be:
 - (a) a hard surface outside the milk house and directly below the hose port, that is connected to the main entrance of the milk house by a sidewalk constructed of hard material, that is large enough and adequately maintained to keep the hose from the bulk milk truck clean;
 - (b) a grounded exterior electrical outlet adjacent to the hose port and controlled by a bipolar switch located on the interior wall of the milk house in a location accessible to the bulk milk grader;
 - (c) in cases where milk is shipped from the bulk tank, a window in the milk house that permits the bulk milk grader to observe the transfer pump compartment of the bulk milk truck's tank from inside the milk house.
 - (4) The refrigeration compressor, vacuum pump of the milking system, water heater and the water pump, shall be installed and operated in a manner that does not contaminate the milk.
14.
 - (1) A bulk tank shall be installed in a milk house.
 - (2) A bulk tank shall:
 - (a) be used exclusively for the storage and cooling of milk;
 - (b) have a sufficient capacity to hold the milk between pickups;
 - (c) be equipped with a dipstick or gauge or other measuring device authorized by the Regulatory Authority to permit determination of the volume of milk contained in the tank on the basis of the calibration table bearing the same serial number as the dipstick or gauge and the tank;
 - (d) have mechanical agitation capable of restoring uniformity of all milk constituents throughout the tank without splashing or churning of the milk;
 - (e) not use air agitation;
 - (f) be equipped with intermittent controlled agitation that provides a minimum of five (5) minutes of agitation every hour or longer if necessary to keep the milk homogeneous;
 - (g) be suitable for cooling the milk and maintaining it at a temperature greater than 0°C and less than or equal to 4°C;

- (h) have a means to measure the temperature of the milk contained in the tank to within 1°C;
 - (i) be equipped with an outlet cap;
 - (j) be equipped with a means to turn on bulk tank agitation without initiating the milk pickup procedure.
- (3) A portion of a bulk tank can extend outside the milk house; however the following equipment must be inside the milk house or the milk room:
 - (a) the outlet valve;
 - (b) the personnel access port;
 - (c) the monitoring and sampling apparatus;
 - (d) the bulk tank vent;
 - (e) the device that measures the temperature of the milk inside the bulk tank;
 - (f) all equipment and pipelines required to wash the inside of the bulk tank from within the milk house;
 - (g) all components that are necessary for the purpose of safely and accurately determining the volume of milk.
- (4) When any portion of a tank extends outside the milk house, the following are required:
 - (a) The portion of the tank mounted outside the milk house must be in a clean area, which allows the tank to be maintained in a clean and sanitary manner, and will allow sanitary access to any external agitator mounts during service;
 - (b) Access to all parts of the tank, except for the bulk-headed wall, must be maintained to allow inspection for cracks;
 - (c) If a portion of the tank is outdoors it must be protected from animals and vehicles by design or barrier and the motors and agitator shafts must be properly protected with appropriate weatherproof installations;
 - (d) The tank leg supports must be sufficiently mounted to prevent torsion and cracking in the tank;
 - (e) The tank must not be used for a wall or ceiling support;
 - (f) The walls shall be tightly sealed with a gasket around the tank where the tank is bulk headed.
- (5) A bulk tank shall be:
 - (a) emptied at least once every two days for cow milk, unless approval for a longer period is granted by the Regulatory Authority; and
 - (b) cleaned and sanitized following each complete transfer of milk to the bulk milk truck and at any other time that the tank is emptied.
- (6) The producer must have current, legible bulk tank wash hookup procedures posted in the milk house and/or milk room and the system must be safe to operate.
- (7) Milk from a dairy source, other than a cow may be stored in facilities other than a bulk tank provided that:
 - (a) the facilities are accessible for inspection, handling, washing and sanitizing;
 - (b) the facilities meet the standards established in sections 14 (2) (a), (g) and (h); and
 - (c) the storage facilities have been inspected and authorized by the Regulatory Authority.

15.
 - (1) The milk contained in the bulk tank or in other facilities shall be maintained at a temperature of greater than 0°C and less than or equal to 4°C until collection.
 - (2) Where milking is conducted in a tie-stall or parlour milking area, the temperature prescribed for milk in subsection (1) shall be achieved in the following manner:
 - (a) the first milking placed in the bulk tank shall be cooled to 10°C or less within one hour, and further cooled to a temperature of greater than 0°C and less than or equal to 4°C within two hours after the completion of milking;
 - (b) when subsequent milkings enter the tank, the blend temperature shall not rise above 10°C and milk shall be cooled to a temperature greater than 0°C and less than or equal to 4°C within one hour after the completion of milking.
 - (3) Alternative storage temperature regimes for raw milk used in the manufacture of specialty products may be approved where necessary, by the Regulatory Authority, as long as health and safety standards are maintained.
16. In addition to the cooling requirements specified in 15(1) and 15(2) sheep milk may be stored in frozen storage.
 - (1) Milk that is to be frozen must be frozen within 72 hours and remain in a frozen state until received by processor.
 - (2) Raw sheep milk must be cooled to 4°C or less before adding to a container of frozen milk.
 - (3) Each container of milk must be uniquely identified and a record shall be kept by producer so that milking dates and producer can be traced to that container.
 - (4) A daily record of freezer temperature shall be made.
 - (5) Reusable milk storage containers must be thoroughly cleaned, sanitized and dried after emptying and before next use.
 - (6) Articles intended for single use such as plastic bags and pail liners shall only be used once. Containers shall be stored such that the exteriors remain clean and free of contaminants.
 - (7) The freezer unit must be equipped with an accurate temperature measuring device.
 - (8) Freezers and storage racks shall be free of pits and corrosion and maintained in a sanitary condition while in use.

Milk Handling Equipment

17. (1) All equipment used for the purpose of collecting, cooling, holding, storing and transferring milk shall:
 - (a) be used only for that purpose;
 - (b) be maintained in working order; and
 - (c) have surfaces that come into contact with milk which are:
 - (i) constructed of non-corrodible materials;
 - (ii) smooth and free of cavities, open seams and loose particles;
 - (iii) non-toxic and resistant to damage from cleansers and sanitizers;
 - (iv) unaffected by milk and which do not adversely affect the safety and quality of the milk.
- (2) All milk handling lines, transfer lines, and in-line valves are to be clean-in-place.
- (3) Milk transfer lines must have continual slope and be self-draining, without sagging.
- (4) In-line milk filters must be stored in suitable containers or cabinets to protect against contamination.
- (5) Where compressed air is directed towards milk or milk contact surfaces:
 - (a) the oil used in air compressors must be food-grade and must be changed as recommended by the manufacturer, and
 - (b) air must be free of foreign material (e.g., rust, oil, heavy metals), water (i.e., condensation) and micro-organisms.

HYGIENE DURING MILKING OPERATIONS

18. The premises, materials and equipment of the dairy barn, milking parlour and milk house shall be kept clean and maintained in good repair and operational condition.
19. (1) A person who is conducting a milking operation shall:
 - (a) ensure their hands are clean at all times by washing their hands and drying them with single service towels before the start of milking, and any time hands are soiled;
 - (b) wear clean clothing; and
 - (c) in a case where the person has an open lesion wear a waterproof dressing that prevents contamination of the milk.
- (2) In the case of hand milking, a person shall not engage in wet hand milking.
- (3) No person, infected with or carrying any communicable disease that may be transmitted through the milk, shall work in a capacity that involves the production, handling, storage or transportation of raw milk.

20. (1) Prior to milking, a person who is conducting the milking operation shall:
 - (a) clean and sanitize the teats with a product approved for udder hygiene and dry them hygienically;
 - (b) examine the first stream of milk from each teat and discard it in a manner that prevents contamination of the milking area.
- (2) During milking, a person who is conducting the milking operation shall
 - (a) discard any abnormal milk that is collected; and
 - (b) in situations where abnormal milk is detected or treated cattle are milked, thoroughly rinse and drain equipment surfaces in contact with milk prior to resuming milking.
21. Immediately after milking each animal, teats shall be sanitized using a teat dip solution approved for that purpose under the *Food and Drugs Act and Regulations* (Canada).
22. Bedding shall not be changed or disturbed within close proximity of milking activities when performed in the tie-stall dairy barn.
23. (1) Subject to subsection (2) solid and liquid manure shall be removed daily from the dairy barn.
- (2) Manure may be permitted to accumulate in a loose housing barn provided there is sufficient bedding to ensure a clean, dry rest area for the dairy animals.
24. (1) All milk shall be filtered prior to storage.
- (2) New milk filters must be installed prior to each milking. In the case of continuous and automated milking operations refer to the Automatic Milking System Guidelines.
25. Where more than one dairy species are milked in the same operation, milking, collection, storage and transfer equipment shall be operated in a manner that prevents mixing of the milk between dairy animal species.
26. Equipment that comes into contact with the milk during milking shall:
 - (a) be rinsed, washed, rinsed and drained within one hour after the completion of milking;
 - (b) when not in use, be stored in a manner that prevents contamination; and
 - (c) be sanitized and drained immediately before use.
27. A producer shall have procedures for the milking equipment sanitation program accessible in the milk house and ensure that they are followed.
28. A person shall only use a cleaning agent, sanitizer or pesticide that meets the standards established by the *Food and Drugs Act* or the *Pest Control Products Act* or that is in the reference listing of accepted construction materials, packaging materials and non-food chemical products published by the CFIA and available through the Internet (<http://www.inspection.gc.ca>).

29. All detergents, sanitizers, insecticides, pesticides and other pest control products shall be approved for use in Canada and kept in their original labeled containers or kept in containers that are properly labeled to ensure easy identification of the type of products that they contain.

ANIMAL HEALTH REQUIREMENTS FOR RAW MILK PRODUCTION

30. A dairy barn shall be used only to house dairy animals being kept for the purposes of milking. Bovine, caprine and equine animals may be housed in the dairy barn provided they are housed in a separate area according to their species.
31. No producer shall sell or offer for sale milk that is obtained from an animal that shows evidence or visible signs of disease transmissible to humans by milk or that adversely affects the quality or flavour of the milk.
32. Dairy ewes shall be kept in separate closed sections when other dairy species are maintained in the same operation.
33. Only drugs or products approved for administration to dairy animals under the *Food and Drugs Act (Canada)*, the *Feeds Act (Canada)*, the *Pest Control Products Act (Canada)*, the *Safe Food for Canadians Act* and any applicable provincial legislation, may be administered to a dairy animal. Medications, drugs and products must be administered as prescribed by a veterinarian or if the medication is authorized for sale without a prescription, it must be administered as directed by the manufacturer's instructions on the label.
34. A producer shall clearly identify treated dairy animals that require milk to be withheld and maintain a record of all veterinary drug use.
35. Once calves have been separated from their dam, they shall be kept in separate pens or box stalls when housed in the same facility as the milking herd.
 - 35.1 Animals shall be clean (hind legs, flanks, hips, udder).

HANDLING AND TRANSPORT OF BULK MILK

36. Any person who performs the duties of a bulk milk grader under this Code shall have completed and passed a training program designed specifically for that purpose, and approved by the Regulatory Authority
37. A person who grades or collects milk, operates a bulk milk truck or bulk milk transfer depot, or performs other duties related to the grading, or transporting of milk must be authorized to do so by a Regulatory Authority.
38. A bulk milk grader shall:
 - (a) wear clean clothing while performing any activities, duties or functions under this Code;
 - (b) wear a waterproof dressing over any open lesion that prevents contamination of the milk;
 - (c) not enter the animal housing areas.
39. A bulk milk grader shall not transfer milk from a bulk tank where:
 - (a) the milk in the tank has been placed under detention by the Regulatory Authority; or
 - (b) the producer has been prohibited from shipping milk by the Regulatory Authority.
40. (1) When collecting milk from the bulk tank, a bulk milk grader shall:
 - (a) use the hose port;
 - (b) ensure that their hands are clean before handling or touching equipment;
 - (c) accept or reject the milk, on the basis of its appearance, odour, temperature or other abnormalities. This activity can be done directly in the tank, or at any time before leaving the farm during or after the transfer of the milk;
 - (d) measure the volume of milk contained in the producer's bulk tank;
 - (e) draw a representative sample of milk:
 - (i) by means of the mechanical sampler on the bulk milk truck; or
 - (ii) directly from the producer's sample port (VBT) or bulk tank using a sanitary sampling device, such as a pipette or sampling dipper, following agitation of the milk contained in the tank for at least 5 minutes or as otherwise authorized by the Regulatory Authority to assure uniformity of the milk; or
 - (iii) as otherwise prescribed by the Regulatory Authority;
 - (f) draw a sample of milk, at least once per month or more often as prescribed by the Regulatory Authority, in an aseptic manner following agitation of the milk contained in the tank for 5 minutes or as long as is necessary to assure homogeneity of the milk;
 - (g) maintain all samples at a temperature greater than 0°C and less than or equal to 4°C and deliver them to the responsible person at the processing plant or other designated area;

- (h) record on a collection report all information required by the processing plant, Regulatory Authority or milk marketing agency; and
 - (i) following transfer of the milk to the bulk milk truck, disconnect the hose, and rinse the interior surfaces of the bulk tank with lukewarm or cold water.
- (2) A bulk milk grader, when collecting milk from the bulk tank, may connect the wash system and start the bulk tank wash. The grader is not expected to handle cleaning chemicals.
41. (1) The bulk milk grader shall leave the milk in the bulk tank, where the milk in the tank:
- (a) is abnormal in odour;
 - (b) contains objectionable matter or other physical defects or abnormality;
 - (c) is abnormal in temperature;
 - (d) would, if transferred to the bulk milk truck, have a detrimental effect on the milk in the bulk milk truck or on subsequent transfers of milk;
 - (e) is otherwise not of good quality; or
 - (f) cannot be sampled.
- (2) The bulk milk grader shall, following the taking of the action referred to in subsection (1), issue a written notice to the producer detailing the reason for the rejection, or any other information required by a Regulatory Authority and as soon as possible thereafter inform the appropriate Regulatory Authority or milk marketing agency of this action.
- (3) Rejected milk as per section 41(1) must be identified such that it will not be used for human consumption.

Transport Vehicles

42. Bulk milk trucks shall be used exclusively for the transportation of milk, dairy by-products or potable water unless otherwise authorized by the Regulatory Authority.
43. A vehicle used to transport milk in containers must be equipped to protect the milk and the containers against any source of contamination. It must also be capable of preventing the temperature of milk from rising above 6°C until it is delivered to the dairy plant.
44. (1) Bulk milk trucks shall have milk contact surfaces that are:
- (a) constructed of corrosion resistant materials;
 - (b) smooth and free of cavities, open seams and loose particles;
 - (c) non-toxic and resistant to damage from cleansers and sanitizers;
 - (d) unaffected by milk and which do not adversely affect the quality of the milk;
 - (e) readily cleanable.

- (2) The tank of a transport vehicle shall be:
 - (a) constructed in a manner such that the temperature of the milk cannot rise more than 2°C in 24 hours; and
 - (b) equipped and designed with sufficient number of spray balls to allow for proper cleaning.
- 45. (1) When in use, the tank and accessories of the bulk milk truck shall be washed and sanitized at least once per day in a manner that prevents contamination of the milk.
- (2) A bulk milk truck shall be equipped with a compartment to store hose, pump and any equipment used in the transfer of milk to protect them from any source of contamination.

Milk Transfer

- 46. Transfer depots shall:
 - (a) be constructed and maintained to prevent risk of contamination to the milk during the transfer process;
 - (b) provide hot and cold pressurized water having non-detectable levels of *Escherichia coli* bacteria per 100 ml. to permit the proper sanitizing of the bulk milk truck and equipment;
 - (c) provide sanitary storage space for equipment used in the transfer of milk; and
 - (d) be maintained free of pests.
- 47. Pesticides, sanitizers and any other products used in the operation of a transfer depot shall be used and stored in a manner that will not cause contamination of the milk or milk transfer equipment.
- 48. Milk transfers shall only take place in an approved transfer depot or a dairy plant unless authorized by the Regulatory Authority.
- 49. On an exceptional basis, transfers of milk from one bulk milk truck to another shall be conducted using a hose connected to a truck valve at both ends.

CRITERIA FOR RAW MILK

50. Raw milk must meet the standards set out in **Table 1**.
51. Only approved validated methods which conform to the handling, procedural, and quality control parameters described in the most recently published “Standard Methods for the Examination of Dairy Products” approved by the American Public Health Association, the “Official Methods of Analysis of the Association of Official Analytical Chemists”, any method recognized by the International Dairy Federation/International Standards Organization (ISO), or any other method approved by the Regulatory Authority shall be used for the analysis of milk.
52. Milk shall not be sold that:
 - (a) comes from an animal 15 days prior to and 3 days after parturition, or such longer period that is necessary to assure that the milk is free of colostrum;
 - (b) contains blood or other foreign particles;
 - (c) is watery or coagulated;
 - (d) has odours that adversely affect its organoleptic characteristics;
 - (e) is contaminated by chemical, toxin, drug or any other foreign substance.
53. (1) Milk samples taken from producers shall be tested as required by the Regulatory Authority to ensure compliance with this Code.

(2) Raw milk samples, obtained for the purposes of this Code, shall be tested using recognized methods in an accredited laboratory as designated by the Regulatory Authority.
54. A producer whose milk has been found to contain veterinary drug residues or inhibitory substance residues is not permitted to sell or supply milk until a subsequent bulk milk sample taken from the farm bulk tank tests negative.

**TABLE 1 - CHEMICAL AND MICROBIOLOGICAL STANDARDS
FOR RAW MILK**

PARAMETER	STANDARD
Temperature	Greater than 0°C and less than or equal to 4°C for milk contained in the bulk tank (subject to sections 15.1 and 15.2).
Bacteria count	<ul style="list-style-type: none"> - Cow milk: Maximum 50,000 mesophilic aerobic colony forming units per milliliter (CFU/ml), or 121,000 individual bacterial count per milliliter (IBC/ml)^{®1} when tested using Flow Cell Cytometry on a Bactoscan - Goat milk: Maximum 50,000 mesophilic aerobic colony forming units per milliliter (CFU/ml), or 321,000 individual bacterial count per milliliter (IBC/ml)^{®1} when tested using Flow Cell Cytometry on a Bactoscan - Alternative validated test methods and technologies may be used when approved by the Regulatory Authority
Somatic cells	<p>Cow's milk: maximum 400,000 somatic cells per ml. Goat's milk: maximum 1,500,000 somatic cells per ml.</p>
Veterinary drug residues	Negative for the presence of veterinary drug residues and inhibitory substance residues as tested by an approved screening method or testing below the MRL by an approved quantitative method.
Cryoscopy	<p>Maximum: -0.525° Hortvet (-0.507°C) for cow's milk. Maximum: -0.554° Hortvet (-0.535°C) for goat's milk.</p>

¹ Validation work was done by comparing the Foss Bactoscan[®] FC to the Standard Plate Count method. Other Flow Cell Cytometry instruments whose manufacturers have approved them for cow or goat milk analysis would require validation against the Standard Plate Count method.