

# Food Processing Facility Standards



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## PREAMBLE

These standards shall be read in conjunction with *The Food Safety Regulations*.

Food processing in Saskatchewan is varied and includes the processing of any food or drink intended for human consumption. This includes, but is not limited to, produce, grains/cereals, bread and related bakery goods, confections, meat, dairy products, fish, egg products, condiments, protein products, bottled water, pre-packaged ice, seeds into sprouts, and soups. Many of the foods prepared are potentially hazardous, as defined in *The Food Safety Regulations*. Consumption of improperly processed or handled food may cause foodborne illness. Wholesome food, good food handling practices, properly designed and constructed facilities, equipment and adequate refrigeration, as well as properly trained food handlers, all contribute to a safer product.

These standards have been developed to assist operators of food processing facilities in meeting the regulatory requirements contained in *The Food Safety Regulations*. These standards do not apply to operations under Part III.1 – Home Food Processors of *The Food Safety Regulations*. Guidance and requirements for home food processors can be found here: <http://www.health.gov.sk.ca/food-safety>

Food processing facility operators shall note that while the standards in themselves are not considered law, provisions of the standards become legally binding when they are attached as a condition of a licence to operate. It is expected that all food processing facilities are constructed and operated in accordance with these standards. There are, however, situations to which the standard may not be reasonably applied or there may be cases where the operator demonstrates an alternative method of meeting food safety requirements. In these situations, it may be necessary for the local authority to deviate from some of these provisions.

The standards specify minimum prescriptive standards to be followed when constructing, extending, renovating, altering or operating a food processing facility. However, where supported by sufficient evidence submitted by the operator, a public health officer may deem a proposed alternative as equivalent to the prescriptive requirements provided that:

- (a) the alternative is capable of performing at least as well as the prescribed standard; and,
- (b) the operator clearly demonstrates and supports how their proposed alternative will achieve the same outcome(s) as the prescribed standard. An appropriate level of evidence, which may include verification of performance by a qualified professional, is required.

Anyone requiring clarification on any aspect of *The Food Safety Regulations* or the Food Processing Facility Standards is advised to contact their local public health officer. The link below will provide contact information for the health authority public health inspection offices throughout the province:

<http://www.health.gov.sk.ca/public-health-inspections>

The most current versions of *The Food Safety Regulations* and the Food Processing Facility Standards are available online at:

<http://www.health.gov.sk.ca/food-safety>

<http://www.health.gov.sk.ca/environmental-health-regulatory-info>

**Note:** Where there is conflict in wording between the standards and regulations, the regulations will prevail.

## DEFINITIONS

**“Approved”** means approved by a public health officer appointed pursuant to *The Public Health Act, 1994*.

**“Clean-in-place”** means a cleaning and sanitizing process for food processing equipment that works by flushing detergent, water and a sanitizing solution through the equipment by contacting all interior food contact surfaces before being completely drained of cleaning and sanitizing solution.

**“Corrosion-resistant material”** means material that maintains acceptable cleanable characteristics under prolonged exposure to food, soil, moisture, heat and the normal application of cleaning compounds and sanitizing solutions.

**“Food”** means:

- (a) a solid or liquid substance that is used or intended to be used for human consumption; or
- (b) a substance that is intended to enter into, or be used in the preparation or composition of, a substance described in (a) but does not include drugs or water.

**“Food grade material”** means a material that is used in the construction of utensils, equipment and food contact surfaces that does not allow the migration of pathogens, deleterious substances or imparts colours, substances, tastes or odours to the food and is safe, durable, corrosion-resistant, smooth, easily cleanable and resistant to pitting, chipping and scratching.

**“Game farm meat products”** means a product that is derived from antelope, bison, caribou, elk, fallow deer, moose, mule deer, reindeer, white-tailed deer, bighorn sheep, thinhorn sheep, mouflon sheep, musk deer, mountain goats, ostrich, emu, rhea, pheasant, meat rabbit, llama, alpaca, wild boar and any other animal held in captivity for the purpose of producing game animal meat products.

**“Impervious”** means a surface that is constructed of a material that prevents the passage or entry of moisture.

**“Local Authority”** means a health authority appointed under *The Public Health Act, 1994*.

**“Operator”** means a person who is temporarily or permanently managing, supervising or in control of the operation of a food processing facility.

**“Potable water”** means water that is suitable and safe for human consumption.

**“Processing Facility”** means an establishment or part of an establishment in which food or water intended for consumption by the public is prepared, processed, packaged or sold in a form not intended for immediate consumption, but does not include facilities exempt in *The Food Safety Regulations* such as slaughter plants, milk plants, alcohol production facilities, or home food processors.

**“Public health officer”** means a person, employed by or on contract with a local authority and who has been delegated board powers to administer *The Public Health Act, 1994* and related regulations. Public health officers may also be referred to as public health inspectors or environmental health officers.

**“Sanitizing”** means a process that provides enough accumulative heat or concentration of chemicals for a sufficient length of time to reduce the number of micro-organisms on food contact surfaces to a level that does not compromise food safety.

***“Single service utensils”*** mean cups, containers, lids, closures, plates, knives, forks, spoons, stirrers, straws, napkins, wrapping materials and toothpicks or any other utensils which are designed to be used only once and then is discarded and includes, but is not limited to paper, styrofoam, wooden, plastic and aluminum foil utensils.

***“Utensil and equipment”*** means any implement, stationary or mobile, manual or mechanical, used in the storage, preparation, transportation or service of food.

## **SECTION 1 – CONSTRUCTION and FACILITY REQUIREMENTS**

**Note:** Anyone considering establishing or renovating a food processing facility shall be aware that in addition to the requirements of *The Food Safety Regulations* and accompanying standards, approvals from other ministries, agencies and/or local municipalities may also be required. These approvals may include, but are not limited to, building, fire, accessibility, plumbing and sewage disposal.

### **1.1 Plan Approval**

Anyone considering constructing, extending, renovating, altering or establishing a food processing facility shall submit detailed plans and receive approval from the public health officer prior to commencement of work.

### **1.2 Construction**

1. Unless the public health officer provides written approval for any changes, applicants shall ensure that the facility is built in accordance with the plans and specifications submitted and approved by the public health officer.
2. Stairways shall be:
  - (a) located so as to prevent direct or indirect contamination of food; and,
  - (b) constructed of materials that are impervious and easily cleanable.
3. Catwalks and mezzanines shall:
  - (a) not be located over food storage, processing or packaging areas, or where splashing or dripping could pose a contamination risk; and,
  - (b) be constructed of suitable materials.

### **1.3 Water Supply**

Operators of food processing facilities shall ensure that there is an adequate supply of potable hot and cold water under pressure for food processing, preparation, and service purposes.

### **1.4 Separation**

When food processing or preparation takes place on the same premises with any retail, wholesale business or any trade, the food processing area shall be separated by a floor to ceiling wall from these other operations in a manner acceptable to the public health officer. Barriers are not required where the food preparation area of the facility forms part of a public eating establishment, food retail or food wholesale operation provided the layout does not create any potential source of contamination to food.

### **1.5 Physical Environment and Equipment**

1. Exposed service lines for gas, water, plumbing, sewer and electrical utilities that are located within a food processing facility shall be installed in a manner that allows for easy access for cleaning purposes. Permanently mounted equipment shall be completely sealed to the wall or ceiling.

2. Floor mounted equipment, unless easily moveable, shall be sealed to the floor or elevated six inches (15 cm) and installed in a manner to facilitate cleaning in and around the equipment.
3. In areas where food is prepared, packaged, stored or received and where, utensils and equipment are kept or cleaned, the floors, walls and ceilings shall be constructed of materials that are:
  - (a) easily cleaned;
  - (b) durable;
  - (c) impervious;
  - (d) light in colour (to reflect light and facilitate proper cleaning);
  - (e) smooth;
  - (f) non-toxic; and,
  - (g) non-corrosive.
4. The joints between the floors and walls in the areas identified above shall be coved and sealed to facilitate cleaning.

#### **1.6 Ventilation**

Unless otherwise approved by the public health officer, adequate ventilation shall be provided to prevent an accumulation of heat, condensation, smoke, dust, grease/oils and odours or other contaminants within the facility. The ventilation system, which includes hoods, canopies, filters and similar devices, shall be designed, installed and maintained so as to prevent contaminants from collecting on walls and ceilings and from dripping onto food or onto food contact surfaces.

#### **1.7 Lighting**

1. Adequate and appropriate lighting is to be provided throughout the premises to facilitate cleaning. The intensity in the various areas shall be no less than:
  - (a) 110 lux (at a distance of 91cm [3 ft.] above the floor) in walk-in coolers, freezers, dry food storage areas and in all other areas and rooms during periods of cleaning;
  - (b) 220 lux (at a distance of 91cm [3 ft.] above the floor) in areas used for hand washing, dishwashing, utensil and equipment storage and in washrooms; and,
  - (c) 540 lux at the surface where a food handler is working with food or utensils and equipment such as knives, slicers, grinders or saws where food handler safety is a factor.
2. Lighting fixtures shall be located and be of a safety type or protected to prevent contamination of food and packaging material in the event of breakage.

#### **1.8 Storage Areas**

1. Food processing facilities shall have adequate storage space for all items required for its operation including food, ingredients, equipment and non-food materials such as, utensils, linens, single-service utensils, packaging materials, cleaning supplies and other chemical agents.

2. Foods not requiring refrigeration, such as dried goods, shall be stored in containers constructed of food grade material which can be easily cleaned and which have tight fitting covers.
3. Foods shall be stored on impervious shelves which are of sufficient height to allow for easy cleaning of the floor and to allow for inspection for pests.

#### **1.9 Refrigerators/Walk-in Coolers/Freezers**

1. Food processing facilities shall be equipped with refrigerators or walk-in coolers and freezers of sufficient size and/or number to accommodate the food supplies that must be refrigerated or frozen.
2. Refrigerators, walk-in coolers and freezers shall be designed and maintained to operate at the required temperatures.

##### *Recommendation*

*Unless food volume is minimal, commercial refrigerators (or walk-in coolers) should be used.*

3. Walk-in coolers shall be equipped with adequate shelving to accommodate food supplies that must be refrigerated. Shelving shall be designed to permit proper air circulation and to facilitate cleaning.

#### **1.10 Hand Washing Stations**

1. An adequate number of conveniently located hand wash basins, for the sole purpose of hand washing, shall be located in areas where food is handled, processed or prepared.
2. Each hand washing station shall be equipped with:
  - (a) plumbed-in hot and cold water under pressure;
  - (b) liquid soap in a dispenser;
  - (c) single-use paper towels in a dispenser; and,
  - (d) an uncovered\* plastic lined waste container.

\*Covered waste containers may be permitted provided the lid is controlled by a foot pedal or other hands-free mechanism.

#### **1.11 Dishwashing Equipment**

1. Unless otherwise approved by the public health officer, the food processing facility shall be equipped with:
  - (a) a non-corrosive three-compartment sink of sufficient size to accommodate all utensils and (non-stationary) equipment\*; **or**,
  - (b) a mechanical dishwasher that conforms to National Sanitation Foundation International Standards (NSF/ANSI Standard 3 – Commercial Warewashing Equipment) or equivalent for the washing, rinsing and sanitizing of all utensils and (non-stationary) equipment\*.

\* Some equipment, because of size or design, cannot be cleaned in sinks or dishwashers - refer to Section 3 for details.



2. At minimum, a two-compartment sink is required where a mechanical dishwasher is in place unless otherwise approved by the public health officer. The two-compartment sink will be used for the purpose of cleaning or thawing food, the disposal of liquid wastes and, in the event of dishwasher malfunction, to facilitate manual dishwashing.
3. Where utensils and equipment are washed, rinsed and sanitized manually, drainage racks of corrosion-resistant material and of adequate size shall be provided. Drainage racks shall be stored in a sanitary manner when not in use.

For information on washing, rinsing and sanitizing processes refer to section 3.

*Recommendation*

*Counters within the dishwashing area should be dedicated for soiled, utensils and equipment.*

#### **1.12 Janitorial Facilities**

1. To provide for the cleaning requirements of the food processing facility, each facility shall be equipped with cleaning material, equipment, and facilities located in such a manner so as to prevent contamination of food or food contact surfaces.

*Recommendation*

*A service sink, janitor's sink, or curbed cleaning facility (equipped with a floor drain) should be provided for the cleaning of mops and the disposal of mop water and similar liquid waste.*

2. Mops and similar floor cleaning tools shall be cleaned in such a manner so as not to contaminate food or food contact surfaces. Mop water and other liquid wastes shall be disposed in manner that prevents contamination of food or food contact surfaces.
3. If a hose is connected to any faucets within the food processing facility, the water supply shall be protected with a back flow prevention device.

#### **1.13 Washroom Facilities**

1. Unless otherwise exempted by the local municipality that is responsible for enforcing the *Uniform Building and Accessibility Standards Act* and regulations, public washrooms shall be provided. Where provided, public washrooms must be conveniently located so that access does not require passage through areas where food is stored or prepared.
2. Washroom facilities may also be required for employees. Contact the Ministry of Labour Relations and Workplace Safety for details.

#### 1.14 Dressing Rooms

##### *Recommendation*

*Dressing rooms should be provided if employees are required to change their clothes prior to commencement of shift.*

1. Where provided, dressing rooms shall be:
  - (a) easily cleanable;
  - (b) well ventilated;
  - (c) well lit;
  - (d) provided with lockers or other suitable facilities for the storage of employee possessions;
  - (e) maintained in a sanitary manner and in good repair; and,
  - (f) completely enclosed and provided with a lockable door unless separate facilities are provided for each sex.
2. Where dressing rooms are not provided, lockers or cabinets, located separate from food preparation, storage, processing or packaging areas, shall be provided for storage of staff apparel and other personal items.

#### 1.15 Miscellaneous

Depending on the type of food being prepared within the facility, a grease interceptor may be required. Individuals exploring the possibility of opening a food processing facility are encouraged to discuss this matter with local plumbing officials.

### SECTION 2 - OPERATIONAL REQUIREMENTS

#### 2.1 Food Safety

1. Unless exempted in writing by the public health officer, all food and ingredients that will be used in the preparation of food sold or provided to the public shall be from approved sources, that is, sources subject to inspection by a government agency or the health authority.
2. All food that is prepared or served in a food processing facility shall be clean, free from contamination and spoilage and prepared so as to be safe for human consumption.
3. Where food items are to be washed before being prepared or served, the sink(s) shall be washed, rinsed and sanitized between uses.
4. Raw fruit and vegetables shall be thoroughly washed to remove soil and other contaminants before being cut, combined with other ingredients, cooked, or served.
5. Reheated food shall reach an internal temperature of 74°C (165°F) or higher within one hour. Cooking ranges, microwave ovens, ovens and steamers may be used for reheating. Hot-holding equipment, slow cookers or steam tables shall not be used to reheat food as the required temperatures may not be reached within the required time. Food shall not be reheated more than once.

6. Surfaces such as cutting blocks and boards that are subject to scratching and scoring shall be resurfaced if they can no longer be effectively cleaned and sanitized or replaced if they cannot be effectively resurfaced.
7. Food or drink that has been previously served shall not be re-served unless it was:
  - (a) on each previous occasion, served in a container designed to prevent contamination; or,
  - (b) individually packaged and has remained unopened and untampered.
8. Ice shall be made from potable water, stored and handled in a sanitary manner. Appropriate scoops with handles shall be used when handling ice and scoops must be stored in a manner that prevents contamination of the ice. After being used to cool food or to keep food cold, ice shall not be used as food.
9. Where beverages are kept in bulk for use by the public, they shall be drawn from a covered container by means of a tap. This does not apply to water pitchers placed on dining tables for each setting.
10. Single service utensils shall be handled and stored in a sanitary manner and shall not be used more than once.
11. Food processors shall be aware of potential food allergens. Cleaning equipment to control allergen transfer between products is critical. When undeclared food allergens contaminate other food products, the food processor is to recall the suspect food and eliminate the health hazard. Refer to subsection 4.14 for information on food and water recalls.
12. Only authorized personnel shall be allowed in areas of the food processing facility where food is stored, processed or packaged or where utensils and equipment are cleaned and stored.
13. Live animals are not permitted in areas where food is stored, processed, packed, or prepared.

*Recommendation*

*Pasteurized eggs or egg products should be used in recipes that call for uncooked or undercooked eggs, e.g., Eggs Benedict, Caesar Salad, meringue, eggnog, ice cream, mousse or hollandaise sauce.*

## **2.2 Food Temperatures**

1. Operators shall provide an accurate (to 1°C or 2°F) thermometer to monitor food temperatures. Thermometers, used to determine internal food temperatures, shall be sanitized between uses.

*Recommendation*

*Thermometers should be calibrated against a known standard prior to initial use and as necessary (i.e. if dropped, prolonged use outside ambient temperature, etc.) to ensure accuracy.*

2. Operators shall monitor the temperatures of potentially hazardous foods to ensure that food is stored or displayed at:
  - (a) 4°C (40°F) or lower for cold holding;
  - (b) 60°C (140°F) or higher for hot holding; and,
  - (c) Below 0°C (32°F) for frozen storage.

*Recommendation*

*Frozen food should be stored at -18°C (0°F) or lower.*

3. Thermometers shall be placed in each refrigerator, walk-in cooler and freezer to ensure equipment is maintaining correct temperatures.
4. Refrigerator, walk-in cooler and freezer temperatures shall be checked at least daily and written records of the temperatures shall be maintained.
5. Frozen potentially hazardous foods shall not be thawed at room temperature. Potentially hazardous foods shall be thawed safely using one of the following methods:
  - (a) in refrigerated units at a temperature of 4°C (40°F) or lower;
  - (b) completely submerged in potable cold running water;
  - (c) in a microwave oven only when the food will be immediately subjected to a cooking process; or
  - (d) as part of a cooking process.
6. When thawing raw meat, poultry or fish in a refrigerated unit, operators shall ensure that:
  - (a) the products are placed in a container that will collect any liquid that may be produced as the product thaws; and,
  - (b) containers with thawing food are placed on the lowest shelf of the refrigerator or walk-in cooler to prevent the raw liquid from contaminating other food.
7. Food shall be cooked in one continuous process. Food must never be partially cooked, cooled and then reheated to complete the cooking process.
8. Cooking foods to specific temperatures destroys disease causing organisms. The following internal temperatures shall be reached and held for at least 15 seconds when cooking the following foods:
  - (a) 60°C (140°F) or above for rare beef steaks and roasts;
  - (b) 63°C (145°F) or above for eggs (if prepared for immediate service); medium rare beef, lamb and veal steaks and roasts;
  - (c) 68°C (155° F) or above for game farm meatproducts;
  - (d) 70°C (158° F) or above for fish;
  - (e) 71°C (160°F) or above for ground beef/pork/lamb/veal; food made with ground beef/pork/lamb/veal, e.g. sausages, meatballs; pork chops, ribs and roasts;
  - (f) 74°C (165°F) or above for ground chicken/turkey; food made with ground chicken/turkey or mixtures containing poultry, meat, fish, or eggs; chicken and turkey breasts, legs, thighs and wings; stuffing (inside a carcass); stuffed pasta; hot dogs; leftovers; egg dishes (if not prepared as specified above); stuffed fish; and shellfish (difficult to measure internal temperature of shellfish but discard any mussels, oysters or clams that do not open when cooked); or,
  - (g) 82°C (180°F) or above for chicken and turkey, whole bird.

9. Internal cooking temperatures, regardless of cooking methods, shall be consistent. To achieve consistent temperatures of foods cooked in a microwave:
  - (a) rotate or stir midway or during the cooking process to compensate for uneven distribution of heat;
  - (b) cover to retain surface moisture; and,
  - (c) allow to stand covered for two minutes after cooking to obtain temperature equilibrium.
10. Internal temperatures of cooked potentially hazardous food, not intended for immediate further processing or packaging, shall be reduced:
  - (a) to 20°C (68°F) or less within 2 hours; and,
  - (b) from 20°C (68°F) to 4°C (40°F) or less within the next 4 hours.
11. Cooling time shall be reduced quickly by:
  - (a) using stainless steel containers rather than plastic or other material;
  - (b) using ice baths, ice wands and/or shallow pans;
  - (c) cutting large items into smaller portions;
  - (d) portioning large quantities of food into smaller containers;
  - (e) stirring the food frequently; or,
  - (f) placing the food items in a blast chiller.
12. Ice shall be made from potable water and stored and handled in a sanitary manner. Appropriate scoops with handles shall be used when handling ice. Ice scoops shall be stored outside ice making equipment in a clean and sanitary manner. After being used to cool food, ice shall not be used as food.

### **2.3 Packaging and Labelling**

2. Labelling shall follow federal labeling guidelines. Food processors shall be aware of federal labelling legislation applicable to the product(s) they produce. For information on labelling requirements, contact the Canadian Food Inspection Agency.
3. Packaging material shall be sufficient for the purpose of protecting the product from contamination in the conditions under which it will be handled, transported and/or stored.
4. Packaging material shall be food grade, non-toxic, and shall not leave harmful deposits of any kind on the product, or otherwise contaminate the food product.
5. Packaging material for food products shall be stored in a clean and sanitary manner.
6. Packaging shall be done under conditions that prevent the contamination of the product(s).

## SECTION 3 – CLEANING, SANITIZING and STORAGE of UTENSILS and EQUIPMENT

Utensils and equipment must be effectively washed, rinsed and sanitized either manually, mechanically (in dishwashers) or in the case of some equipment, cleaned-in-place.

### *Recommendation*

*Dishwashing, utensil and equipment washing, rinsing and sanitizing procedures should be posted for easy reference.*

### 3.1 Manual Dishwashing

1. Utensils and equipment shall be washed, rinsed and sanitized in the following manner:
  - (a) **washed** in the first compartment with an effective detergent at a wash temperature not less than 44°C (111°F);
  - (b) **rinsed** in the second compartment in clean water at a temperature not less than 44°C (111°F);
  - (c) **sanitized** in the third compartment using one of the following treatments:
    - (i) immersion for at least two minutes in clean hot water at a temperature of at least 77°C (171°F);
    - (ii) immersion for at least two minutes in a warm 24°C – 44°C (75°F – 111°F) chlorine solution of not less than 100 parts per million (ppm) concentration;
    - (iii) immersion for at least two minutes in a warm 24°C – 44°C (75°F – 111°F) quaternary ammonium solution having a concentration of 200 ppm; or
    - (iv) immersion for at least two minutes in a warm 24°C – 44°C (75°F – 111°F) iodine solution of between 12.5 and 25 ppm concentration.
    - (v) another sanitizing chemical, if approved by a public health officer (in writing), and used according to the manufacturer's instructions.
2. Where chemicals are used for sanitizing, testing equipment shall be available and used for checking the concentration of the sanitizers regularly.
3. If sanitizer concentrations exceed the concentrations noted above, an additional warm water rinse is required to remove the sanitizer residual.
4. Manufacturer's instructions for detergents and sanitizers shall be followed.
5. Utensils and equipment shall be:
  - (a) air dried after being washed, rinsed and sanitized; and,
  - (b) handled and stored in a sanitary manner.

### 3.2 Mechanical Dishwashing

1. If chemicals are used to sanitize utensils and equipment in dishwashers, the concentrations shall be as noted in subsection 3.1.
2. If hot water is used to sanitize, the water temperature at the manifold must reach 82°C (180°F) for at least 10 seconds. Minimum/maximum registering thermometers, thermo-labels, or temperature stickers shall be used to ensure the required temperatures are being met.

Maximum-registering thermometers and thermo-labels may be used to confirm the effectiveness of heat sanitation. When hot water is used to sanitize, a reading of greater than 71° C (160°F) at the dish level, measured using a maximum holding thermometer, is an indication of satisfactory sanitation.

3. Dishwashers shall be thoroughly cleaned following manufacturer's instructions at the end of each day's operation or more frequently to maintain them in a satisfactory condition.
4. Where chemicals are used for sanitizing, testing equipment shall be available and used for checking the concentration of the sanitizers regularly.

### **3.3 Cleaning and Sanitizing Large Equipment and Clean-in-Place (CIP) Equipment**

1. Some equipment, because of size or design, cannot be cleaned in sinks or dishwashers.
2. Equipment too large to be cleaned in sinks or dishwashers (e.g., large food processing equipment, dough mixer, meat slicers, etc.) shall be cleaned where the equipment is situated. The following process shall be followed:
  - (a) clean food contact surfaces either by using a cloth immersed in a detergent solution or a pressure washer with detergent;
  - (b) rinse food contact surfaces with clean water in a spray bottle or pressure washer;
  - (c) sanitize food contact surfaces with a spray bottle containing a sanitizer or a pressure washer with a sanitizer. The concentration of the sanitizer shall be as specified in subsection 3.1. Follow the manufacturer's instructions.
3. Clean-in-place equipment shall be cleaned as per manufacturer's instructions.
4. Equipment that is used continuously at room temperature for handling or processing of potentially hazardous food, such as meat slicers and mixers shall be disassembled, washed, rinsed and sanitized every four hours.

#### *Recommendation*

*Instructions should be posted respecting:*

- (a) *the procedures used for cleaning and sanitizing the equipment;*
- (b) *the chemicals used for cleaning and sanitizing;*
- (c) *the concentration of the chemical solutions used, confirmed with test strip;*
- (d) *the length of time the equipment is to be exposed to the sanitizer;*
- (e) *the frequency of cleaning and sanitizing; and*
- (f) *disassembly and assembly instructions as required for cleaning and inspection purposes.*

## **SECTION 4 – MAINTENANCE and GENERAL SANITATION**

1. Operators shall ensure the food processing facility is kept clean and in good repair.

2. Every food processing facility shall have a detailed written cleaning schedule to ensure the safe and sanitary operation of the establishment. The cleaning schedule shall specify:
  - (a) areas, equipment and utensils to be cleaned, e.g., food storage and preparation areas, refrigerators/coolers/freezers, washrooms, dishes and utensils and clean-in-place equipment;
  - (b) methods of cleaning (including how to disassemble, clean, sanitize and reassemble the equipment);
  - (c) frequency of cleaning;
  - (d) cleaning and sanitizing agents, their concentration and frequency of application;
  - (e) equipment required to do the cleaning; and,
  - (f) personnel responsible for cleaning.

The written cleaning schedule shall be monitored, verified and adjusted as necessary to ensure its effectiveness.

3. Cleaning compounds, toxic and poisonous substances are to be:
  - (a) kept in a compartment separate from food;
  - (b) prominently and distinctly labelled for easy identification of contents; and
  - (c) used so that the substance does not contaminate food or endanger the health of any person.
4. Washrooms shall be equipped with:
  - (a) liquid soap in dispensers;
  - (b) paper towels in dispensers, hot air dryers, roller-type linen towels or roller-type cotton towels; and
  - (c) an adequate number of easily cleanable waste containers.
  - (d) Note: When using roller-type towels, ongoing monitoring shall be in place to ensure fresh towels are available at all times.
5. Washrooms shall be cleaned at least on a daily basis. More frequent cleaning may be required.

*Recommendation*

*Washrooms should be inspected frequently throughout the day to ensure they remain clean, adequately stocked and in good repair.*

6. Wiping cloths for cleaning work surfaces shall be immersed in a sanitizing solution before each use. The sanitizing solution shall be changed frequently to ensure it remains effective. Wiping clothes are not to be used for any other purpose.

Sanitizing solutions may include chlorine based products, iodophors, quaternary ammonium compounds, or other approved sanitizer at the concentrations specified in subsection 3.1.

7. Spray bottles containing sanitizing solutions may also be used to sanitize work surfaces provided the wiping cloth is changed after each use so it does not re-contaminate surfaces between uses, or immersed in a sanitizing solution between each use.
8. Wiping clothes are not to be used for any other purpose.
9. Materials and equipment not required for the operation of the food processing facility shall not be stored in areas used for storing, preparing, processing or consuming food.



## **SECTION 5 – WASTE DISPOSAL and RECYCLING**

1. Waste, including used cooking oil, shall be handled, stored and disposed of in a sanitary manner and in accordance with local bylaws.
2. Waste containers shall be:
  - (a) made of material that is impervious, durable, smooth and easily cleaned;
  - (b) of sufficient number to contain all the waste generated by the food processing facility;
  - (c) equipped with tight fitting lids and covered where practical;
  - (d) plastic lined;
  - (e) kept in a clean state and in good repair; and
  - (f) removed daily, or more frequently if necessary, from any area where food is prepared or served and areas where utensils and equipment are cleaned or stored.

Note: The subsection above does not apply to commercial used cooking oil containers situated outside some food processing facilities, however where these containers are used, operators shall ensure the containers do not create a nuisance due to infrequent cleaning or spillage of oil.

3. Where recycling is practiced in the food processing facility, recycling containers shall be:
  - (a) identifiable or labelled and used exclusively for that purpose;
  - (b) made of material that is impervious, durable, smooth and easily cleaned;
  - (c) equipped with tight fitting lids;
  - (d) emptied at a frequency that does not permit the development of objectionable odours and other conditions that may attract pests;
  - (e) kept in a clean state and in good repair; and,
  - (f) situated away from food storage, preparation, processed, or packaged or areas where utensils and equipment are washed or stored.

## **SECTION 6 – PEST CONTROL**

1. All food processing facilities shall be free of pests.
2. Areas surrounding the food processing facility shall be maintained, adequately drained, kept free of rubbish, old equipment and any other potential pest harbourage.
3. All openings to the outside air shall be effectively screened and in good repair. Doors shall be self-closing and equipped with tight fitting gaskets to prevent pests from gaining access to the establishment.
4. To prevent the entry of pests, an integrated pest management plan must be developed. The plan shall describe how to:
  - (a) identify potential pests;
  - (b) monitor pest populations, pest damage and potential pest habitats;
  - (c) eliminate pest populations using strategies that may include a combination of biological, physical, mechanical, behavioral and chemical methods; and,
  - (d) monitor and evaluate the effectiveness of pest elimination strategies.
5. The operator shall ensure that a written record of all pest control measures used in the food processing facility is maintained.

6. If pests gain access to the food processing facility, the infestation shall be eradicated immediately in a manner that does not contaminate food or food contact surfaces. In the case where there is a serious infestation, a qualified person shall be used to eradicate the infestation.

## **SECTION 7 – PERSONNEL**

### **7.1 Food Handler Training**

An operator of a food processing facility shall ensure that employees are adequately trained to handle food safely. The operator of a food processing facility shall ensure that a person who has successfully completed a course in food sanitation, approved by a public health officer, is working in the food processing facility at all times when food is being prepared or served. Safe food handling practices shall be reinforced regularly.

#### *Recommendation*

*Food handlers should be re-certified every 5 years.*

### **7.2 Food Handler Habits, Hygiene and Health**

1. Operators shall ensure that all persons working in the food processing facility observe high standards of personal cleanliness and proper hygiene by:
  - (a) being clean;
  - (b) wearing clean outer garments\*;
  - (c) confining hair, including beards, by using a hair net or other suitable hair restraint; and,
  - (d) removing or suitably covering jewellery.

\*Note: Aprons may be used as a type of outer garment. If food processing causes the clothing to become soiled, the clothing shall be changed as necessary.
2. Exercise caution to ensure food handlers do not move from a raw food preparation area to a packaging area without changing soiled clothing or aprons and performing hand hygiene.
3. The wearing of jewellery shall be limited to plain rings and/or, where necessary, medic alert bracelets or necklaces.
4. Unless wearing intact gloves, a food handler shall not wear finger nail polish or artificial nails when handling food.
5. Operators shall ensure that any food handler behaviour, which could result in contamination of food, such as use of tobacco, vaping, eating or drinking, is prohibited in areas where food is stored, prepared, packaged or served, or where utensils or equipment are cleaned or stored.

6. Food handlers with acute respiratory illness, influenza symptoms (fever, headache, aches and pains, fatigue, weakness, sore throat, cough and chest discomfort) or experiencing any of the following symptoms shall not be involved in the handling of dishes or utensils, or in the preparation, handling or serving of food:
  - (a) diarrhea;
  - (b) jaundice;
  - (c) vomiting;
  - (d) fever;
  - (e) unusual discharges from ear, eye or nose;
  - (f) severe abdominal pain; or,
  - (g) an infected wound or lesion that is open or draining on or about the hands, wrist or exposed portion of arms.
7. Food handlers with illness or experiencing any of the symptoms mentioned above shall report the symptoms immediately to the operator or supervisor. The affected food handler may be assigned other tasks in the food processing facility that do not involve food handling or dishwashing. Contact your public health officer for details.

### **7.3 Hand Washing**

1. Every person engaged in food handling or food processing shall wash their hands frequently and thoroughly with liquid soap and warm water and dry their hands with single-use, disposable paper towels. Hand sanitizers are not an acceptable alternative for frequent and thorough hand washing.
2. Hands shall be washed before commencing work, between tasks, after using washroom facilities, after smoking, eating or at any other time hands may be soiled or contaminated.

#### *Recommendation*

*Notices should be posted at hand washing stations directing employees to wash hands.*

### **7.4 Gloves, Aprons, and Other Protective Apparel**

1. Disposable gloves are not considered a substitute for frequent and thorough hand washing, however, when gloves are used when handling food, the following protocol shall be followed:
  - (a) hands shall be thoroughly washed before putting on gloves and when changing into a new pair;
  - (b) gloves shall be changed as soon as they become soiled or torn and before commencing a different task;
  - (c) gloves shall be changed at least every 4 hours during continual use and more frequently when necessary; and,
  - (d) gloves shall be stored and handled in a manner that minimizes contamination.
2. Protective apparel such as helmets, aprons, reusable gloves, boots, hair and beard nets, etc. shall be either disposable and discarded after single use, or be of materials that can be easily cleaned and shall be cleaned and sanitized at frequencies that will minimize the risk of food contamination.

## **SECTION 8 – MEAT PROCESING AND HANDLING**

1. Carcasses in walk-in coolers shall not touch other carcasses, walls, floors or other sources of potential contamination and shall not be a source of potential contamination for any food items being stored in the same cooler.
2. Food processors shall consult with the public health officer prior to processing wild game. The operator shall ensure that no unsanitary conditions are created and that wild game is handled in a manner that will not lead to the contamination of other food products.
3. If an operator of a food facility is processing a wildlife carcass into meat and meat products that the operator intends to offer for sale to the public, and if the operator has obtained an exemption in writing from the local authority with respect to the inspection of the meat and meat products, the operator must ensure that:
  - (a) the wildlife carcass is clean, safe for human consumption and will not contaminate the operator's equipment, facilities and other food;
  - (b) while the wildlife carcass is being stored and processed, the carcass does not come into direct contact with any other food in the food facility;
  - (c) the wildlife carcass is not processed in the same room of the food facility at the same time as other food;
  - (d) after the wildlife carcass is processed, all equipment and surfaces used in the food facility in processing the carcass are cleaned and sanitized before being used in processing other food; and,
  - (e) the meat and meat products derived from the wildlife carcass are clearly identified to staff and patrons of the food facility as being uninspected.
4. Operators shall ensure that the handling of wild game does not lead to the contamination of other food products.
5. Where wild game is processed, the operator shall ensure:
  - (a) that the processing takes place after all other meat or meat products have been processed for the day;
  - (b) the carcass is skinned, trimmed and rinsed before entering the cooler or processing area;
  - (c) wild game carcasses do not contact the carcasses of other animals;
  - (d) precautionary measures related to Chronic Wasting Disease are taken when handling deer, elk and moose carcasses; and,
  - (e) all rooms, areas, and equipment used in processing of wild game are completely cleaned and sanitized before resuming the handling of domestic meat or meat products for human consumption.
6. Specified Risk Materials (SRMs) are to be removed from cattle pursuant to federal regulations administered by the CFIA. The CFIA shall be contacted for more information.
7. The facility must be designed to facilitate hygienic operations by means of a regulated flow in the process, from the arrival of raw material to the shipping of the finished product. The traffic pattern of employees, product and equipment must prevent the contamination of product. Physical and, where appropriate, operational separations are acceptable methods to prevent contamination of the product.
8. Rail heights must be sufficient to prevent carcasses from contacting the floor or other sources of contamination.

9. Inedible wastes, e.g. viscera, skin, feathers, SRMs, shall be stored in clean containers, legibly marked to identify their purpose. Alternatively, a separate room, in close proximity to the processing area, may be provided for the holding of inedible wastes provided its location and access to the room does not affect the hygienic operation of the processing facility.
10. Shall inedible wastes be stored for more than 24 hours, the inedible waste room shall be equipped with refrigeration units capable of maintaining the room temperature at 10°C or lower.

## **SECTION 9 – FOOD AND WATER RECALLS**

1. The operator of a food processing facility is responsible to recall all food or water processed in their facility if they have reason to believe it is unsafe for human consumption.
2. Recalled products shall be separated from other products and access controlled until appropriate disposition of the product has been determined. This can be achieved by using hold tape, tags, or a designated storage area.
3. Operators shall develop, implement, and maintain written procedures will assist in the recall of the food or water of questionable quality.
4. Operators shall also have written procedures in place to record any complaints received with regard to food or water processed within the facility.
5. Details of complaints shall be recorded and the record shall be kept for at least one year.
6. As soon as possible after becoming aware that meat or meat products produced in the slaughter plant may be unsafe for human consumption, the operator shall conduct a risk assessment to determine whether or not the product needs to be recalled. If it is determined that the meat or meat products are unsafe for human consumption, the operator shall initiate a recall of the product that was distributed to the public, or to a retail or wholesale food establishment.
7. The operator shall maintain a written record of details relating to any recall that was initiated.
8. Recalled products shall be separated from other products and access controlled until appropriate disposition of the product has been determined. This can be achieved by using hold tape, tags, or a designated storage area.

## **SECTION 10 – TRANSPORTATION**

1. The facility verifies that carriers are suitable for transporting food products. Upon receiving product, or prior to loading product for shipment, the facility inspects commercial carriers to ensure that they are free from contamination and suitable for transporting food products.
2. Materials requiring refrigeration (both incoming materials and finished products) are transported at a regulated and/or acceptable temperature and are appropriately monitored. Frozen ingredients and frozen finished products are transported at temperatures that do not permit thawing.

3. Finished product is transported under conditions to prevent damage or deterioration.

## **SECTION 11 – TESTING and LABORATORY ANALYSIS**

1. The operator of a facility producing milk or milk products must ensure laboratory tests of each batch of milk or milk product are conducted to ensure the quality of the product complies with the requirements of the regulations. The operator shall maintain a record of these tests and make them available to the public health officer upon request.
2. Testing Parameters for milk processing include:
  - (a) Mesophyllic aerobic bacterial count: <25,000 colony-forming units per millilitre.  
NOTE: Cultured milk product are exempt from this testing criteria
  - (b) Coliform bacterial count:
    - i. Fluid milk and milk products: one or less bacteria per millilitre.
    - ii. Non-liquid form milk and milk products: 10 or less bacteria per millilitre.
  - (c) Phosphatase test: negative.
3. If milk or milk products are found to exceed any of the above parameters they cannot be sold or provided to the public.
4. For milk or milk products, testing can be done on every batch or on multiple batches at once depending on production volume. If multiple batch are being tested together, all product must be discarded if samples fail to meet criteria.
5. Materials requiring refrigeration (both incoming materials and finished products) are transported at a regulated and/or acceptable temperature and are appropriately monitored. Frozen ingredients and frozen finished products are transported at temperatures that do not permit thawing.
6. Laboratory analyses of foods may be required for reasons not limited to: validating processing processes, establishing that appropriate criteria for food safety management are met, administering a recall, and/or disease investigation. Specimens for analysis must be submitted to a recognized laboratory with a copy of the report being provided to the public health inspector.

## **APPENDIX A - Fermented Food Production Guidance**

### **Introduction**

Fermentation occurs totally in the absence of oxygen, and yields energy from oxidation of organic compounds (mainly sugars). This process is commonly carried out by yeast cells, or by some bacteria.

From a food safety perspective it is the process of fermentation that matters. It is important to assess the steps in the production:

- To ensure certain critical limits are met (that will eliminate or control the hazards); and
- To ensure that the process is such that no additional hazards will be created or added (hygiene, etc.).

### **Types of Fermentation**

Fermentation can be classified in different ways:

- based on the end product of the fermentation; lactic acid, ammonia/alkaline, and alcohol;
- by the type of microorganism used for the fermentation process is also common; lactic-acid bacteria, yeast, or mixed; or
- by the type of process used (mainly in industrial and bio-fuel settings); solid-state and submerged.

Lactic acid fermentations use lactic acid producing bacteria. Examples of lactic acid fermented products, include yoghurt, sausages, cheese, sauerkraut, and kimchi. Lactic acid bacteria causes spoilage of meats as well as vegetables. The production of the lactic acid makes the products turn sour and unappetizing.

Alcohol fermentations occur when the byproduct pyruvate is converted to ethanol and carbon dioxide. As yeasts perform this conversion in the absence of oxygen, alcoholic fermentation is considered an anaerobic process.

Yeast species are also involved in the fermentation of many of the lactic acid–fermented products, including kefir (a slightly alcoholic dairy beverage from the Caucasus), and kombucha (a fermented sweetened tea from China).

Most of the well-known soy-based fermented foods from Asia such as tempeh and soy sauce are produced by fungal fermentation, except natto, which is produced by alkaline fermentation.

In general food fermentation processes from sauerkraut and kimchi to miso and tempeh use solid-state fermentation processes operated in batch mode, where microorganisms are cultivated on the surface of a water-insoluble substrate. Submerged fermentation processes are used in the production of dairy-based beverages, alcoholic beverages, and food condiments such as vinegar and hot sauce.

## Food Safety Considerations

### *Fermentation specific food safety advice*

1. Use a standardized recipe.
2. Remove the outer layer on the produce before starting the fermentation (e.g. remove outer leaves of cabbage).
3. Produce should be fully submerged under the brine liquid during fermentation.
4. Each fermentation should begin fresh – do not “top up” previous ferments with new product.
5. Salt content in lactic acid bacteria fermentations are typically 2-3% of weight of vegetables. Do not reduce the amount of salt in the recipe. Salt is needed to promote growth of beneficial bacteria during the ferment.
6. A healthy fermentation should occur within 24 to 72 hours, and the process should be consistent from batch to batch. A pH of less than 4.6 must be achieved within the first 72 hours, otherwise harmful bacteria that are acid resistant may have an opportunity to establish.
7. Check each batch visually for spoilage. If there are no bubbles with 48 to 96 hours, or if produce is spoiling, discard entire batch.
8. Do not ferment food products to below a pH of 3.2
9. Refrigerate fermented products once fermentation cycle is completed.
10. Boiling water (open kettle) canning is recommended after fermentation to ensure the best seal between the glass jar and lid for product quality.

**Figure 1:** Food Safety Advice for Produce based fermentations.

### Fermentation Control Points

1. Fermentation containers
  - Must be sterilized before filling.
  - Must be made of material that is non-corrosive and not-reactive. This is especially important with acid producing fermentations (no metal).
  - Designed to keep product submerged in brine throughout fermentation process.
  - Designed for proper ventilation of gaseous fermentation by-products (where needed).
2. Work Area and Storage
  - Clean work area.
  - Good hand hygiene when handling product to prevent introduction of undesirable/spoilage organisms.
  - Product covered to prevent cross-contamination.
3. pH Control
  - Below 4.6 to prevent botulism in anaerobic fermentations.
4. Water Activity control
  - Below 0.85 to prevent *Staphylococcus aureus* growth.
5. Oxygen availability control
  - Limit oxygen to prevent aerobic bacteria growth but anaerobic environment poses botulism risk if other control factors are not in place (i.e. pH <4.6).



## 6. Temperature control

- Used to control bacterial growth.
- Ideal temperature 20° to 25°C for Lactic Acid Bacteria fermentations.
- Storage of final product out of the danger zone unless other control factors (pH/Aw) indicate shelf stability.

## 7. Alcohol control

- Alcohol fermentations shall be monitored once complete to ensure that final product does not contain a significant percentage of alcohol content. If the alcohol content exceeds 0.1% the final product is considered an alcoholic beverage and subject to separate legislative oversight. Even low levels of alcohol may be hazardous to certain groups. Proper labelling is important. Pregnant women may not know to avoid these beverages, and parents may not know they shall be kept beyond the reach of children and not offered as a beverage to them.

## 8. Ingredients

- When using starters make sure they are from a reliable source.
- As with any food production all foods shall be from an approved source.

Often control points are above recommended but used in combination provide necessary food safety component.

### *Product Specific Examples*

(From the Nov 2017 BCFPA Fermented Food Safety Workshop)

#### Kombucha Risks and Hazards

- Contamination of tea before LAB acidification.
- Consumption risks - acidosis (2 cases, 1995), cardiac arrest in 2 women, one death, perforated intestines.
- Too much alcohol (if >1%, product comes under Liquor control).

#### Tempeh Risks and Hazards

- Heat labile toxin growth (*S. aureus*, *B. cereus*) during 1<sup>st</sup> step –soaking of soybeans before dehulling.
- Rhizopus starter culture contamination (*Salmonella* spp.).
- Toxic metabolites.

#### Cheese and Dairy Risks and Hazards

- Most cheeses have a pH > 4.6, potential for botulism growth.
- Salt level alone (~2% depending on variety) not high enough to be inhibitory.
- Water activity alone not low enough to be inhibitory (most cheeses: 0.95 to 0.98 range).
- Safety relies on a combination of lower pH, lower Aw, and competitive microflora (lactic acid bacteria) and very clean process of production.

### **Other Considerations**

#### ***Marking/Branding and Labelling***

As per the *Food and Drug Act*, each product must be marked/branded with the date of the beginning of the manufacturing process. The marking of the date must go on the label at time of packaging. If the product is further divided into portion for packaging each portion must be marked/branded with the date manufacturing began.

The purpose of this labelling is to assist consumers in making informed choices about the consumption of fermented products, particularly for vulnerable populations who may be at greater risk of developing foodborne illness.

## **Botulism**

Botulism is a rare and potentially fatal illness caused by a toxin produced by the bacterium *Clostridium botulinum*. Toxin that is produced by the bacterium in containers of food that have been improperly preserved is the most common cause of food-borne botulism. Fish that has been pickled without the salinity or acidity of brine that contains acetic acid and high sodium levels, as well as smoked fish stored at too high a temperature, presents a risk, as does improperly canned food. Vegetative cells and botulism spores are found in dirt where they are harmless until the conditions for growth are right. Although the vegetative form of the bacteria is destroyed by boiling, the spore itself is not killed by the temperatures reached with normal sea-level-pressure boiling, leaving it free to grow and again produce the toxin when conditions are right.

The primary control of botulism in anaerobic foods, such as fermentations, is to keep the pH level of the food below 4.6. Properly done fermentations control botulism growth through competition from lactic acid bacteria and through the lactic acid lowering the pH.

## **Yeasts & Mold**

Although fermentation brine is anaerobic, at the surface some oxygenation can occur and this is where spoilage organisms can sometimes take hold. Using a lid is the best way to prevent these problems, since they need oxygen to reproduce, and the rapid carbon dioxide production will quickly force oxygen out of the jar. However, even when using a lid yeast/mold growth may occur. Growth on top of a fermented product are generally one of two things:

1. Kahm yeast or pellicle is an overgrowth of bacteria or yeast that can occur on the surface of fermenting fruits and vegetables. It is white, and may be powdery or thready in appearance. Sometimes there will be bubbles of carbon dioxide trapped in it. It may have an odor of fermenting beer or rising bread dough.
2. Mold can be any of a number of multi-celled fungi that grow on food. It may be white, gray/black, blue-green, or pink, and could be furry, slimy, or might form little flowers. Some people are allergic to molds. Some molds can produce mycotoxins. It's important to note that in a soft food, the mold will have invisible tendrils extending down below the surface. If you find mold growing in a soft food the entire batch shall be tossed.

## **Additional Information on Fermented Foods**

The National Fermented Foods Working Group was formed in 2018 and is made up of a group of Public Health Inspectors (PHIs), academics, and food safety specialists from across Canada. The group aims to identify and contextualize common fermented foods encountered by PHIs and operators across Canada, and to develop food safety guidance for these foods. The Fermented Food Guidance discusses specific food safety risks for common types of fermented foods and provides guidance to mitigate these risks. This includes information that will be useful for PHIs as well as operators such as critical control points and food flow charts.

The Fermented Food Guidance can be found here: <http://www.bccdc.ca/health-professionals/professional-resources/fermented-foods><http://www.bccdc.ca/health-professionals/professional-resources/fermented-foods>

## **APPENDIX B - Raw Milk Cheese Production Guidance**

### **Introduction**

A raw milk cheese producer is considered a food processing facility, not a milk plant, as they do not pasteurize milk.

Raw milk cheese is the only raw milk product allowed in Canada. Offering for sale raw milk or any other dairy products containing raw milk is strictly prohibited. The federal *Food and Drug Regulations* allows for the production of cheese from unpasteurized milk and provides requirements for that production. Saskatchewan allows the production of unpasteurized cheese products as per the federal regulations requirements with all other aspects of production governed under Saskatchewan legislation. This guideline applies to provincially inspected facilities which are subject to inspection, as are all food processors, unless they are subject to CFIA inspection.

The terms raw milk and unpasteurized milk are used interchangeably in this document.

This appendix is intended to supplement existing food processing facility resources and provide guidance on specifics surrounding unpasteurized cheese production.

### **Raw Milk Cheese Production Requirements**

#### ***Raw Milk Requirements***

The raw milk used in making raw milk cheese must meet the raw milk requirements set out in *The Food Safety Regulations* (FSR). These include:

- Temperature
- pH
- Bacterial count
- Somatic cell count
- Freezing point
- Antibiotic residue tests

Tests may be done by the manufacturer, a milk plant or a laboratory. Standard methodology for microbiological testing as per *The Compendium of Analytical Methods (Canada)* MFO-14 is required.

Any product made from milk not meeting raw milk testing parameters must be discarded.

#### ***Manufacturing Requirements***

Unpasteurized cheese must be kept or held at a temperature of 2°C or more for a period of 60 days or more from the date of the beginning of the manufacturing process (as per the *Food and Drug Regulations* requirements).

The date of the beginning of the cheese making process per batch shall marked or branded directly on the cheese (if possible) or on the label. If the cheese is cut into smaller portions, each portion must have the date on it. During an inspection, a Public Health Inspector (PHI) shall be able to look at the cheese and determine length of storage.

A facility producing raw milk cheese may not produce other food products unless raw milk cheese production is completely separate from the rest of manufacturing. No shared storage, equipment, surfaces, utensils, etc. is allowed.

## Raw Milk Cheese Testing Requirements

Federal legislation outlines testing parameters for raw milk cheeses as follows:

Standards for Dairy Products <sup>8</sup>					
Fluid cow's milk products, except creams, shall have a freezing point of -0.508 °C or lower.					
Product	Bacteria	n	c	m	M
Cheese (pasteurized milk)	<i>S. aureus</i>	5	2	100	10,000 (/g)
	<i>E. coli</i>	5	2	100	1,000 (/g)
Cheese (unpasteurized milk)	<i>S. aureus</i>	5	2	100	10,000 (/g)
	<i>E. coli</i>	5	2	100	1,000 (/g)

n=number of sample units (subsamples) to be examined per lot<sup>10</sup>  
c=maximum number of sample units (subsamples) per lot that may have a bacterial concentration higher than the value for "m" without violation of the Regulations.  
m=maximum number of bacteria per g or ml of product that is of no concern (acceptable level of contamination)  
M=maximum number of bacteria per g or ml of product, that if exceeded by any one sample unit (subsamples) renders the lot in violation of the Regulations

Further to the federal testing criteria, raw milk cheese producers in Saskatchewan must test for the presence/absence of *Listeria* spp. and *Salmonella* spp. Soft and semi-soft style cheese shall also test for the presence or *Staphylococcus aureus*.

The criteria is as follows:

Unpasteurized Milk				
Analyses	N	c	m	M
<i>L. monocytogenes</i>	5	0	0/25 ml	0
<i>Salmonella</i> spp.	5	0	0/25 ml	0
<i>S. aureus</i>	5	0	2000/ml	

Sourced from: Health Canada's Voluntary Guidance on Improving the Safety of Soft and Semi-Soft Cheese made from Unpasteurized Milk (2015).

Testing can be done on every batch or on multiple batches at once depending on production volume. If multiple batches are being tested together, all batches must be discarded if samples fail to meet criteria.

Results of testing shall be provided to PHI in a timely manner and saved in facility file.

### Testing Procedure

Prior to operation, product manufacturing process and preliminary tests shall be provided to the PHI prior to full facility approval. If facility wishes to add a product type or modify existing protocol, PHI shall be informed and assurance testing by operator shall be completed.

Steps:

1. A sample, consisting of five sample units drawn at random from each sampling lot shall be taken.
2. Each sample unit shall consist of at least 100 g.
3. Collect original unopened containers or packages wherever possible.
4. Employ aseptic techniques in collecting the sample units when sampling bulk cheese.
5. Place each collected sample unit into a separate, labelled sterile container.
6. Keep sample units refrigerated (0-4°C) during transportation

### ***Marking/Branding and Labelling***

As per the *Food and Drug Act* each cheese must be marked/branded with the date of the beginning of the manufacturing process. Marking or branding can be directly on the cheese wheel or if the texture, consistency or physical structure of the cheese is such that it cannot be marked, the marking of the date must go on the label at time of packaging. If the cheese is further divided into portion for packaging each portion must be marked/branded with the date manufacturing began.

Health Canada recommends that manufacturers label their products with the words "made from raw or unpasteurized milk" on the principal display panel of the product and/or declare the raw or unpasteurized milk in the list of ingredients.

The purpose of this labelling is to assist consumers in making informed choices about the consumption of products containing unpasteurized milk, particularly for vulnerable populations who may be at greater risk of developing foodborne illness.