

# food protection

## Vital to Your Business

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**BC Centre for Disease Control**  
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY

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# Food Protection - Vital to Your Business

## INTRODUCTION

Food protection is a very important part of your business. Illnesses related to food cost British Columbians millions of dollars in health care expenses, lost wages, workers' compensation claims, and legal fees every year. You can help prevent some of these illnesses and liabilities by running a safe and sanitary food business.

Besides protecting the public, managing a sanitary operation is good business. It attracts customers and reduces costs. It decreases the amount of food that is spoiled. It helps keep insurance rates down. It reduces the chance of lawsuits and negative publicity. It can even prevent the closure of your business.

Environmental Health Officers in BC have developed this publication to help you protect your food products, your food business and the public. The first nine sections cover the main areas of operation. Each section lists many important "do's" and "do not's" for you and your staff; however; the booklet does not cover everything. This information complements the training you receive from courses such as the FOODSAFE course and the advice you get from your Environmental Health Officer. The last three sections provide you with information regarding FOODSAFE Training for food handlers, the FOODSAFE Excellence Certification Program for food industry operations, and ways in which the food industry can help promote safe food handling to their customers.

Please feel free to contact an Environmental Health Officer in your area whenever you have concerns or questions about any aspect of running a sanitary food business. Do not wait until a health officer comes to check your operation. The Environmental Health Officer is there to help you prevent problems. When it comes to food protection, both you and the health officer are in the same business.

The BC government is committed to protecting British Columbians from the harmful effects of industrially-produced trans fat found in food where consumers have little ability to know the trans fat content. Beginning September 30, 2009, all food located on the premises of, prepared, served or offered for sale in a food service establishment must meet the trans fat regulation requirements. Documentation for food must be kept on site to demonstrate compliance. For more information, visit [www.restricttransfat.ca](http://www.restricttransfat.ca) or call 811 and ask to speak to a HealthLink BC dietitian.

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## PLANNING A FOOD BUSINESS

### *Getting Plans Approved*

- Consult an Environmental Health Officer before planning any food business.
- Be aware that:
  - all plans for a food business must be approved by an Environmental Health Officer; and
  - approval of plans by an Environmental Health Officer does not mean that zoning or other requirements by local authorities have been met.
- Submit all plans and specifications to establish, build or change a food business for approval by an Environmental Health Officer. Submit both a site plan and a building plan.

### *Site Plan*

#### **A. Location**

- Provide a legal description and address of the location.

#### **B. Water Supply**

- Identify the source of the water supply.
- Provide a supply of hot and cold water under pressure. It must be potable (safe to drink).
- Do not have multiple systems, for e.g., one for drinking and one for toilet flushing. Mix-ups and cross-connections may cause problems.
- Make connections to a public water supply according to local bylaws and regulations.
- Contact an Environmental Health Officer for advice if a public water supply is not available.
- Do not use water from a private well, spring, lake or any other system unless a health official has verified that a sample of the water complies with the Canadian Drinking Water Standards.

#### **C. Plumbing and Sewage Disposal**

- Describe the location of all collection lines and the method of sewage disposal.
- Design and construct all plumbing, drains and sewers according to local plumbing regulations or bylaws. If none exist, refer to the British Columbia Plumbing Code.
- Locate rural sewage disposal systems at least 30 metres (100 feet) away from wells and water sources such as lakes.
- Provide a grease trap for the kitchen drain.

#### **D. Garbage Disposal**

- Describe the location and method of garbage disposal.
- Provide an area for garbage cans:
  - outside, preferably on a cement slab that is suitably screened to keep scavengers out; or
  - in a separate room, preferably one with ventilation, washable walls, a sloping concrete floor, a floor drain and a hose for frequent washing.

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- Ask the Environmental Health Officer for advice if regular garbage collection services are not available.

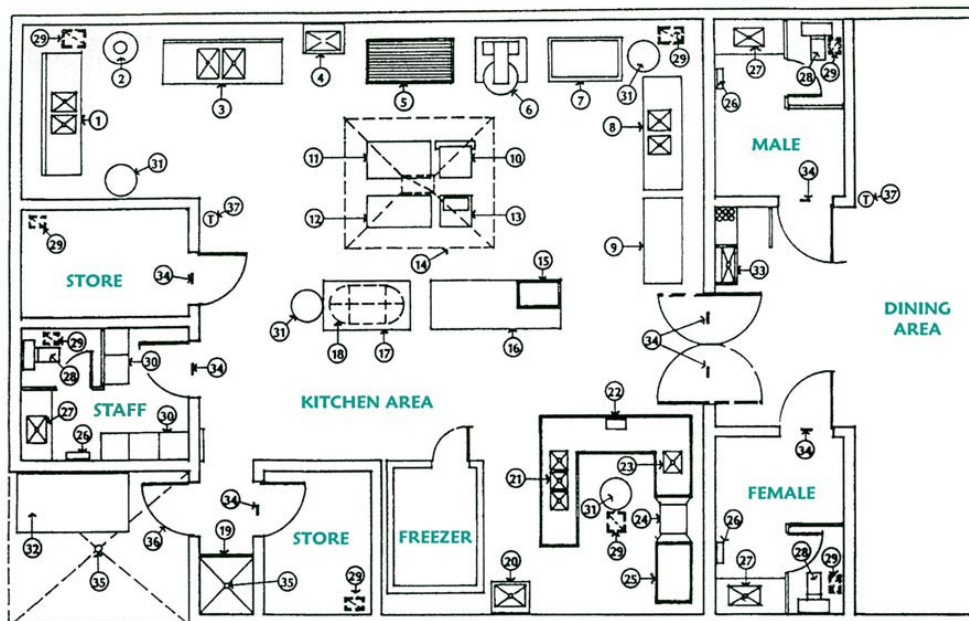
### E. Parking

- Provide the number and layout of parking spaces if a drive-in operation or an on-site sewage disposal is planned.
- Do not plan driveways or parking areas over a septic tank or disposal field.

## Building Plan

### A. Layout

- Prepare a diagram of your proposal similar to the example below, showing the layout. Include all the rooms, their uses and sizes.
- Plan a good flow pattern for handling food – from receiving supplies through to serving and dispensing food.
- Plan to keep dirty dishes and raw food separate from clean dishes and cooked or ready-to-eat food.
- Plan and arrange to install equipment for easy cleaning.
- Ensure adequate storage, holding and refrigeration space to handle expected volumes of food.
- Keep any living quarters completely separate from rooms where food is prepared, stored or served.



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## B. Floors, Walls, Ceilings, Cupboards and Counters

- Describe the type of finish on all surfaces.
- Ensure that finishes will be smooth, tight, non-absorbent and easily cleaned in any room where:
  - food is prepared, stored, or served;
  - utensils are washed; and
  - sinks or toilet fixtures are located.
- Cove areas where walls meet with counters and floors.

## C. Lighting

- Describe the type and intensity of all lighting.
- Provide a minimum lighting intensity of 50 foot-candles where food is prepared, stored and processed.
- Provide a minimum lighting intensity of 30 foot-candles in all other areas.

## D. Ventilation

- Describe the method, location and type of ventilation.
- Install sufficient ventilation to prevent a build-up of odors, smoke and condensation.
- Install according to the building code.
- Fulfill the requests of the Environmental Health Officer who may require:
  - equipment to provide eight complete changes of air per hour where food and drink is prepared or utensils are washed; and four complete changes of air per hour in all other rooms;
  - forced-discharge exhaust systems (of metal or other approved material) installed over stoves, grills, fryers, dishwashers or other sources of smoke, fumes, odors or steam (plus a system to replace air being exhausted);
  - special installations to prevent nuisances to adjoining premises; and
  - venting that is higher than any adjoining roof level.

## E. Equipment

- Describe the location, size, type and finish of major equipment.
- Plan to use equipment that is easily cleaned and sanitized.
- Plan to use large equipment that has removable parts for easy cleaning and inspection.
- Choose equipment made of materials that:
  - are smooth, non-absorbent and non-corrosive;
  - can withstand high temperatures or sanitizers; and
  - do not contain lead, cadmium or antimony.
- Include a 2-compartment sink large enough to wash and rinse the biggest pots and utensils. Provide a suitably sized drainboard.
- Plan to provide a commercial dishwasher if seating capacity exceeds 50. A commercial dishwasher may consist of a:
  - single tank, for a small premises;
  - double tank (a separate wash and rinse tank); and

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- triple tank (separate wash, rinse and sanitizing tanks, or a pre-flush tank, followed by a wash tank and a rinse tank.)
- Provide a three-compartment sink plus drainboard if washing dishes manually.

### F. Sanitation Facilities

- Describe public and staff washroom facilities, staff dressing rooms and additional hand washing sinks.
- Provide hand washing sinks in the food preparation area. Ensure hot and cold running water, soap dispensers and warm-air hand dryers (or approved towels).
- Locate hand sinks conveniently to facilitate hand washing.
- Provide self-closing, tight-fitting doors that do not open directly into any room where food is served, handled, prepared or stored.
- Vent directly to the outside.
- Provide at least one sink for every two toilets or urinals.
- The number of public washrooms required by a food service operation is regulated by the BC Building Code. Contact your local Building Department for the number required for your operation. As well, local building authorities can provide advice as to whether your public washrooms must be accessible to persons with disabilities.
- In areas not subject to local bylaws, the BC Building Code should be used as a guide to the number of washrooms you will need.
- The number of staff washrooms is regulated by WorkSafeBC. Contact the Prevention Division, WorkSafeBC (telephone: (604) 276-3100) to determine how many are required in your food premises.
- Public washrooms must be located so that patrons do not pass through food preparation or storage areas.
- Signs directing food workers to wash their hands after using the toilet or urinal should be prominently posted at all hand basin locations.

### G. Janitorial Facilities

- Describe storage space and janitorial sink.
- Allow adequate space to store cleaners and cleaning equipment.
- Provide a utility sink for filling/emptying pails, cleaning mops, etc.

### *Menu*

- Enclose a copy of the menu. This will assist the Environmental Health Officer in discussing with you the equipment and layout necessary to operate your facility in a safe and sanitary manner.
- The menu will also serve as the initial step in helping you to develop your food safety plan. This is the important process of identifying the critical control points in your operation that will ensure that your food is handled, stored and prepared in such a way as to ensure its safety.



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### GETTING AND KEEPING AN OPERATING PERMIT

#### *Applying For an Operating Permit*

- Apply to the Environmental Health Officer at your local health agency office for an operating permit for any food service business, except one that sells only pre-packaged, non-perishable food. Each business in a chain operation must have a permit.
- Provide all the information required to obtain a permit.
- Be aware that a permit:
  - requires the operator to obey the *Health Act*.
  - cannot be transferred from one owner to another.
  - may be cancelled if the operator fails to obey the *Health Act* or follow the regulations.
- Post the permit in a prominent place in the food business.
- Allow the Environmental Health Officer to inspect the business at any reasonable time.
- Allow the Environmental Health Officer to:
  - take samples of any food or drink;
  - swab dishes, glasses, cutlery or utensils;
  - take samples of the water supply;
  - hold food or drink for further investigation; and
  - perform any tests and examinations considered necessary.
- Close the business immediately if the Health Officer orders you to do so. Remain closed until given permission to reopen.
- Be aware that the operator is guilty of an offence if the operator:
  - continues to operate after being ordered to close or reopens before receiving permission;
  - permits a person to handle food after the Medical Health Officer has prohibited that person from handling food; and
  - fails to meet any other regulations.



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## ENSURING SAFE FOOD SUPPLIES

### *Buying Sound Food Supplies*

- Do not buy any food that is impure, diseased or unfit in any way.
- Do not accept home preserves.
- Deal only with food suppliers who are government-inspected and have a reputation for providing good-quality products.
- Buy meat from inspected sources only.
- Buy shellfish from inspected sources only.
- Buy only milk or milk products that meet approved standards defined by *Milk Industry Act* regulations.
- Buy ice only from a source approved by the Environmental Health Officer.
- Buy food only in quantities that can be used within the shelf life.
- If you have a permit to operate a BC food service establishment, all food located on the premises of, prepared, served or offered for sale must meet the trans fat restrictions as follows:
  - 2% or less trans fat of the total fat content in oil and soft spreadable margarine; and
  - 5% or less trans fat of the total fat content in all other food.
- Documentation for food, as an ingredient list, Nutrition Facts table or product specification sheet must be kept on site to demonstrate compliance. Talk to your supplier or visit [www.restricttransfat.ca](http://www.restricttransfat.ca) for a list of products that meet the requirements.



### *Inspecting New Food Supplies*

- Check for signs of insects or rodents.
- Reject food that has bad or unusual odors.
- Reject meat and poultry that is slimy.
- Reject poultry that has darkened wing tips.
- Contact the producer if in doubt about the quality of potentially hazardous food.
- Check expiry and "best before" dates.
- Refuse products with damaged, loose or re-pasted labels.
- Reject dented, rusted, bulging or leaking cans.
- Reject food in damaged cartons or broken wrappers.
- Refuse food packaged in used containers.
- Be wary of "specials". They could be outdated or fire-damaged.
- Reject frozen food which has not been kept frozen.
- Reject potentially hazardous food which has not been kept refrigerated.



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### *Accepting Safely Transported Food Supplies*

- Accept only supplies that have been protected from contamination during transit.
- Do not accept food from vehicles that are dirty, or that also transport non-food items or pets.
- Do not accept fresh produce, fish or meat that was not properly protected during transport.
- Check to see that potentially hazardous food has been transported in vehicles capable of maintaining the food at temperatures below 4°C (40°F); frozen foods at temperatures below -18°C (0°F).
- Check to see that raw food has been kept separate from cooked or ready-to-eat food.
- Ensure that drivers handle food in a sanitary manner.



### *Checking Food Supplies Affected by Floods or Fires*

- Destroy any food, including dried fruits, cereals, flour, shortening, dairy products, spices, packaged goods, and meats (fresh and cured) contacted by flood waters or smoke.
- Destroy canned food and drink if the seal is damaged, if there are signs of seepage or if the can is bulging.
- Sterilize the outside of other cans by washing, then immersing for five minutes in boiling water or in bleach water (this can be made by mixing 1 tablespoon (15 mL) of household bleach into 1 gallon of water, or 1 teaspoon (5 mL) of bleach into 1 litre of water). Rinse off the bleach water and dry.
- Destroy bottled food products and drinks.
- Destroy all contaminated leafy vegetables. (Root vegetables may be thoroughly washed and cooked.)
- Contact your local Environmental Health Officer with any questions or concerns.



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## STORING AND DISPLAYING FOOD

### *Storage and Display Areas*

- Keep storage and display areas clean.
- Keep food on shelves, tables or racks – not on the floor.
- Protect food from coughs, sneezes, dust, drips, insects and rodents.
- Keep food in separate groups:
  - raw food separate from cooked or ready-to-eat food;
  - hot food separate from cooled food; and
  - incoming food separate from food already stored.
- Store food away from cleaners and insect/rodent poisons.
- Do not permit smoking in storage and preparation areas.

### *Storage and Display Containers*

- Keep storage and display containers clean.
- Do not keep carbonated drinks, juices or other acid food in containers made of copper, tin, brass or cadmium.
- Do not keep food in containers that are galvanized (zinc-coated).
- Do not keep food in containers made of gray enamelware (cadmium or antimony) with a lead glaze.

### *Storage and Display Time*

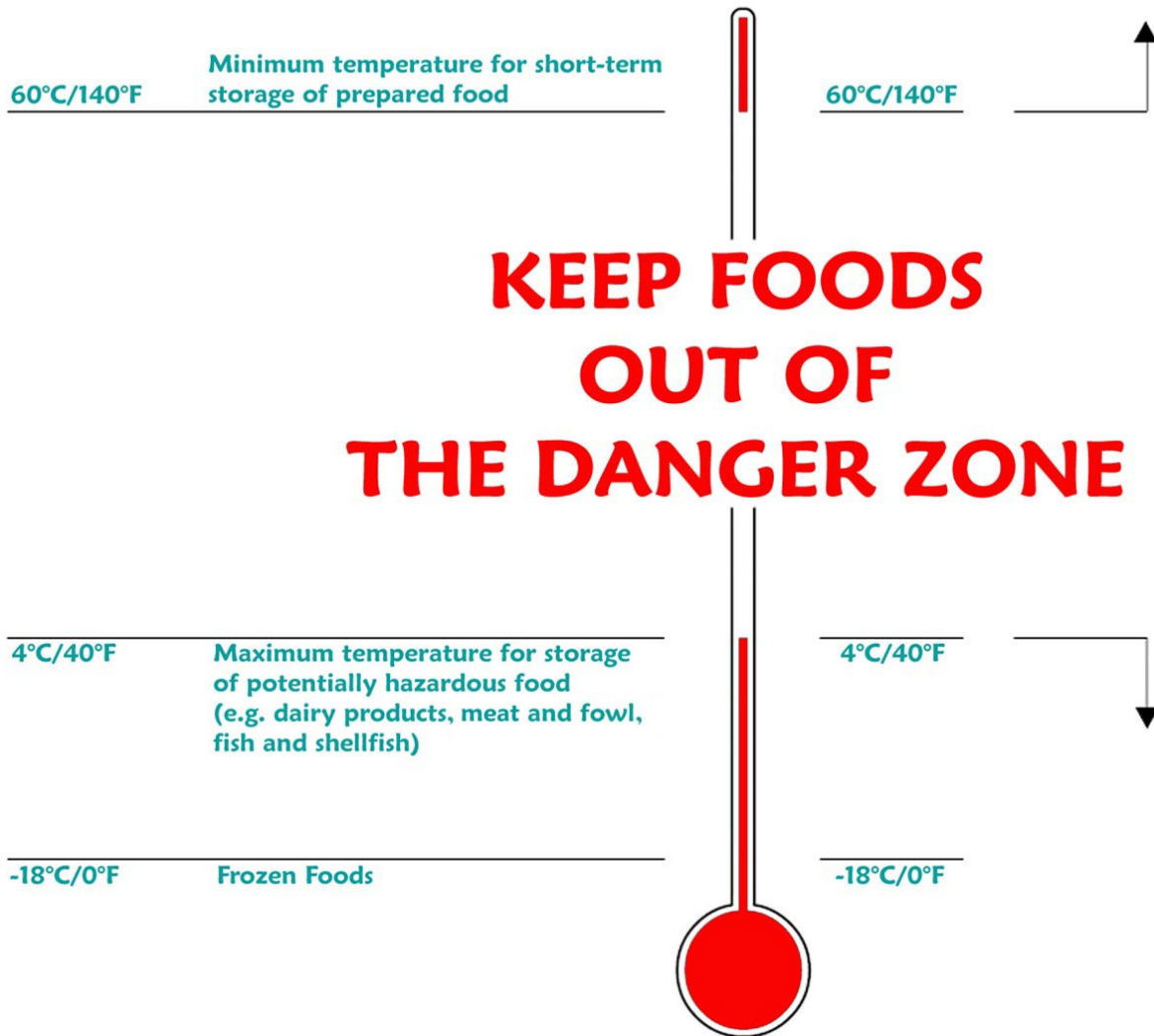
- Use older stock first. Remember the “First-In – First-Out” principle.
- Check labels for expiry dates.
- Keep potentially hazardous food for short periods only.
- Throw away any food you doubt.



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### *Storage and Display Temperatures*

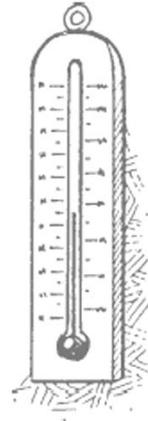
- Keep hot food hot and cold food cold.
- Keep potentially hazardous food below 4°C (40°F) or above 60°C (140°F).
- Keep frozen food below -18°C (0°F).
- Use reliable thermometers to check temperatures – never guess.



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### *Storage in Refrigerators and Freezers*

- Keep a thermometer in the warmest part of the refrigerator and freezer – usually near the door.
- Avoid opening the door frequently.
- Make sure that the door seals properly.
- Defrost as necessary. (Frost raises the temperature.)
- Do not cover shelves with materials such as foil, cardboard or paper, which will interfere with airflow.
- Store raw meat so that air can move freely around it.
- Store raw food below ready-to-serve food.
- Hang large pieces of meat on hooks.
- Clean produce before storage.
- Do not crowd food into the freezer and refrigerator.
- Keep food off the floor of walk-in coolers.
- Rotate food. Use “first in – first out” rule.
- Store perishable food in shallow pans for faster chilling.
- Do not stack containers. The underside of one may contaminate food in the container below it.
- Do not refreeze partially thawed food.



### *Displaying Ready-To-Eat Food*

- Keep food covered.
- Protect food from handling by customers.
- Protect food from coughs and sneezes by using covers such as sneeze-guards.
- Display potentially hazardous cold food such as cream pies, salads, sandwiches and cold meats in refrigerated display cases.
- Keep hot food on steam tables or under heat lamps at temperatures above 60°C (140°F).
- Keep a thermometer in the coolest part of the hot food display area.
- Do not heap hot food higher than the container it is in.
- Do not keep any food on display for long periods of time.



### *Storing Dry Food and Canned Goods*

- Store dry food in covered metal or other approved containers to protect from insects, rats and mice.
- Store in a dry area.
- Store away from heat.
- Store out of direct sunlight.

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### *Storing and Displaying Retail Bulk Food*

- Post the following information for each bulk food display:
  - name of product
  - ingredients, preservatives, additives
  - name and address of supplier
  - shelf life and required storage temperature
- Supervise the bulk food area well.
- Do not allow customers to handle or taste bulk food, or to sneeze or cough over the food.
- Do not allow customers with unclean hands, dirty clothing, open sores or bandages to serve themselves from bulk food containers.
- Do not allow customers to return food to storage bins.
- Do not allow customers to serve themselves any high hazard food (including peanut butter, cheese, honey, milk powder, pie fillings, jam, milk, dairy products, meat, deli items, poultry, cakes and pies).

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### PREPARING, COOKING, SERVING AND DISPENSING FOOD

#### *Personal Hygiene for Food Handlers*

- Keep yourself clean and tidy.
- Wear clean clothes and shoes.
- Keep your fingernails short and clean. Use a nail file and a nail brush daily.
- Do not use coloured nail polish.
- Do not wear hand jewelry.
- Keep your hair short or use a cap or net to hold it above your collar.
- Wash hands:
  - before handling food, clean dishes, utensils and all food contact surfaces;
  - after handling used dishes and utensils, or unclean objects;
  - after handling anything that has been put near the mouth, such as cigarettes, lipstick and toothpicks;
  - after handling raw food;
  - after clearing and wiping tables or counters;
  - after using the toilet or urinal.
- Wash hands, well beyond the wrists, with soap and hot water. Rinse under running water.
- Use a paper towel to turn off the water. (This prevents recontamination of your hands.)
- Dry your hands on paper towels or under warm-air hand dryers. Never use a common towel or an apron.
- Keep your hands away from your mouth, nose, ears, hair, beard or moustache.
- Do not smoke where food is prepared, cooked, served or dispensed.
- Use a special apron for unclean jobs such as peeling vegetables.
- Avoid coughing or sneezing on food, dishes or utensils – or on any surface that contacts food.
- Use only disposable tissue to control coughs and sneezes; then wash your hands.
- Do not work when sick, particularly when suffering from symptoms such as diarrhea or vomiting. (The proprietor must report, to the Medical Health Officer, any food handler carrying – or suffering from – a disease communicable through food.)



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### Preparing Food

- Do not use sulfites in food.
- Use additives and preservatives sparingly.
- Do not use eggs that are cracked or have pinholes.
- Prepare raw food with utensils and cutting boards different from those used for ready-to-eat food.
- Wash all fruit and vegetables thoroughly.
- Do not put a tasting spoon back in the food.
- Handle food as little as possible. Use tongs or non-latex gloves to cover hands where possible.
- Keep scoops, spatulas, spreaders and spoons for salads and sandwich fillings off work counters between uses. Always return them to the same food container.
- Wrap, date and refrigerate sandwiches made ahead of time.
- Do not combine old and new ice cream, malt or milkshake mixes. Mix only the amount needed for one day.



### Cooking Food

- Cook frozen food without thawing whenever possible.
- Thaw frozen food in a refrigerator or in a microwave – but never at room temperature; or
- Thaw frozen food wrapped in plastic and keep submerged in cool running water.
- Cook food to an internal temperature of 74°C (165°F).
- Check temperatures with a metal, probe-type thermometer especially designed for food.
- Check the temperature of a large item in several spots.
- Do not partially cook large pieces of meat, then reheat them later.
- Reheat food so they pass through the danger zone (4°C-60°C) as quickly as possible. It is recommended that food be reheated to reach an internal temperature of 74°C (165°F).
- Reheat food such as stews, gravies and soups by boiling and stirring for several minutes.
- Do not reheat food under the broiler.
- Hold hot food at temperatures above 60°C (140°F).
- Hold cold food at temperatures below 4°C (40°F).
- Do not use a warming oven, steam table or bain marie to heat food. Put only food that is already hot into warming oven.
- Cool food very quickly by:
  - putting it on ice;
  - using shallow pans;
  - dividing it into small portions;
  - stirring it frequently; or
  - using frozen stirring wands.
- Use leftover food within 24 hours of preparation.



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### *Giving Potentially Hazardous Foods Special Attention*

- Make hollandaise sauce in small quantities and use as soon as possible – no later than two hours.
- Cook stuffing separately from chicken or turkey.
- Cook foods that contain eggs – such as custard and cream-filled desserts – to 74°C (165°F) for five minutes. Use only fresh, clean, uncracked eggs or pasteurized egg products.
- Add meringues to hot fillings and bake about 15 minutes at 177°C (350°F). Use only fresh egg whites or pasteurized egg products.
- Cook meat casseroles, meat pies, stews and gravies with moderate heat and stir to distribute heat and oxygen.
- Handle the ingredients for salads and sandwiches as little as possible. Wash hands and utensils frequently.
- Chill salads promptly.
- Chill ingredients for sandwiches and salads ahead of time.

### *Serving and Dispensing Food*

- Serve immediately any mixtures of raw and cooked food, such as chicken or meat salads.
- Serve milk, cream and their substitutes in their original containers or in dispensers approved by the Health Officer.
- Keep ice cream scoops and dippers in running water between serving uses.
- Do not touch or serve prepared food with your fingers. For example, serve:
  - pats of butter with a fork;
  - ice with a scoop or tongs; and
  - doughnuts with tongs.
- Do not let the handles of tongs or other serving utensils contact food.
- Clean syrup pumps and condiment containers before refilling.
- Do not use any dish that is chipped or cracked.
- Do not touch the eating surface of dishes and utensils.
- Hold plates of food with fingers underneath the plate and thumb on the rim.
- Do not stack plates or dishes of food.
- Hold cups and glasses by the base.
- Hold cutlery by the handles.
- Remove dirty trays from eating tables.
- Serve food only once.
- Do not allow common use of any cup or glass.

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### *Selling Barbecued Chicken*

- Make sure the chicken is fully cooked (internal temperature of deepest portion of meat reaches 74°C [165°F]).
- Sell hot barbecued chicken hot from the spit or the warming cabinet (minimum holding temperature 60°C [140°F]).
- Sell cold barbecued chicken cold from the refrigerator or cooler.
- Seal chicken in a foil bag.
- Refrigerate leftover cooked chicken. They may be sold as cold chicken the next day.
- Encourage customers to take chicken directly home.
- Provide instructions for home use:
  - Keep the chicken hot in an oven at a minimum of 60°C (140°F);  
OR
  - Remove the hot chicken from the bag and refrigerate, then reheat quickly to ensure chicken passes as quickly as possible through the danger zone (e.g., 4°C-60°C). It is recommended that the internal temperature of the chicken reach 74°C (165°F).
  - Remove cold chicken from the bag and refrigerate until use.



### *Reporting Illness Acquired through Food*

- Find out what was eaten and when it was eaten.
- Note how many people were affected.
- Isolate the suspected food. Label it and keep it refrigerated until it is examined by the Environmental Health Officer.
- Report the illness to the Environmental Health Officer at once.
- Co-operate with the Environmental Health Officer to correct any problem with the food, its preparation or handling.

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### *Some Illnesses Acquired through Food, and How to Prevent Them*

Illness	Common Food Involved	Signs and Symptoms	Contributing Factor
Amoebic dysentery	<i>Entamoeba histolytica</i> from feces of infected humans. Raw vegetables and fruits	Abdominal pain, constipation or diarrhea containing blood and mucus	Poor personal hygiene, infected workers touching food, inadequate cooking
Angiostrongyliasis	Raw crabs, prawns, slugs, shrimp, snails	Gastroenteritis, headache, stiff neck and back, low grade fever	Inadequate cooking
Anisakiasis	Uncooked marine fish	Nausea, epigastric pain, may mimic appendicitis	Eating inadequately cooked or raw fish
Antimony poisoning	High-acid food and beverages stored in gray enamelware	Vomiting, abdominal pain, diarrhea	Using antimony-containing utensils, storing high-acid foods in gray enamelware
<i>Bacillus cereus</i> enteritis	Cereal products, rice, custards and sauces, meatloaf	vomiting	Inadequate refrigeration, holding food at warm (bacterial incubating) temperatures, preparing food several hours before serving, inadequate reheating of leftovers
Beef tapeworm infection	Raw or insufficiently cooked beef	Vague discomfort, hunger pain, loss of weight, abdominal pain	Lack of meat inspection, inadequate cooking, inadequate sewage disposal, sewage contaminated pastures
Beta-hemolytic streptococcal infections	Raw milk, food containing eggs	Sore throat, fever, nausea, vomiting, rhinorrhea, sometimes a rash	Workers touching cooked food, workers with infections containing pus, inadequate refrigeration, inadequate cooking or reheating, preparing food several hours before serving
Botulism	Home canned low-acid food, vacuum packed fish; fermented fish eggs, fish and marine mammals	Vertigo, double or blurred vision, dryness of mouth, difficulty in swallowing, speaking and breathing; descending muscular weakness, constipation, pupils dilated or fixed, respiratory paralysis. Gastrointestinal symptoms may precede neurological symptoms. Frequently fatal	Inadequate heat processing of canned food and smoked fish, uncontrolled fermentation
Brucellosis	Raw milk, goat cheese	Fever, chills, sweats, weakness, malaise, headache, muscle and joint pain, loss of weight	Failure to pasteurize milk, livestock infected with brucellae

## Food Protection - Vital to Your Business

Illness	Common Food Involved	Signs and Symptoms	Contributing Factor
Cadmium poisoning	High-acid food and beverages, candy love beads or cake decorations	Nausea, vomiting, abdominal cramps, diarrhea, shock	Storing high-acid foods in cadmium containing containers, ingesting cadmium-containing food
<i>Campylobacter jejuni</i>	Raw milk, poultry, beef liver, raw clams, water	Diarrhea (often bloody), severe abdominal pain, fever, anorexia, malaise, headache, vomiting	Drinking raw milk, eating raw meat, inadequate cooking or pasteurization
Cholera	Raw fish and shellfish, food washed or prepared with contaminated water, water	Profuse, watery diarrhea (rice-water stools), vomiting, abdominal pain, dehydration, thirst, collapse, reduced skin turgor, wrinkled fingers, sunken eyes	Obtaining fish and shellfish from sewage contaminated waters in endemic areas, poor personal hygiene, infected workers touching food, inadequate cooking, using contaminated water to wash or freshen food, inadequate sewage disposal, using night soil as fertilizer
Ciguatera poisoning	Numerous varieties of tropical fish	Tingling and numbness about mouth, metallic taste, dry mouth, gastrointestinal symptoms, watery stools, muscular pain, dizziness, dilated eyes, blurred vision, prostration paralysis	Eating liver, intestines, roe, gonads, or flesh of tropical reef fishes; usually, large reef fish are more commonly toxic
<i>Clostridium perfringens</i> enteritis	Cooked meat, poultry, gravy, sauces and soups	Abdominal pain, diarrhea	Inadequate refrigeration, holding food at warm (bacterial incubating) temperatures, preparing food several hours before serving, inadequate reheating of leftovers
Copper poisoning	High-acid food and beverages, copper in pipe and utensils	Metallic taste, nausea, vomiting (green vomitus), abdominal pain, diarrhea	Storing high-acid food in copper utensils or using copper pipes for dispensing high-acid beverages, faulty backflow-preventor valves in vending machines
Cyclopeptide and gyromitrin groups of mushroom poisoning	<i>Amanita phalloides</i> , <i>A. erna</i> , <i>Galerina autumnalis</i> , <i>Gyromitra esculenta</i> (false morels) and similar species of mushrooms	Abdominal pain, feeling of fullness, vomiting, protracted diarrhea, loss of strength, thirst, muscle cramps, feeble rapid pulse, collapse, jaundice, drowsiness, dilated pupils, coma, death	Avoid using certain species of <i>Amanita</i> , <i>Galerina</i> and <i>Gyromitra</i> mushrooms; use only known varieties of mushrooms to avoid mistaking toxic mushrooms for edible varieties
Fish tapeworm infection	Raw or insufficiently cooked freshwater fish	Vague gastrointestinal discomfort, anemia may occur	Inadequate cooking, inadequate sewage disposal, sewage contaminated lakes

## Food Protection - Vital to Your Business

Illness	Common Food Involved	Signs and Symptoms	Contributing Factor
Fluoride poisoning	Any accidentally contaminated food, particularly dry food such as dry milk, flour, baking powder and cake mixes	Salty or soapy taste, numbness of mouth, vomiting, diarrhea, abdominal pain, pallor, cyanosis, dilated pupils, spasms, collapse, shock	Storing insecticides in same area as food, mistaking pesticides for powdered food
Giardiasis	<i>Giardia</i> from feces of infected humans. Raw vegetables and fruits, water	Abdominal pain, mucoid diarrhea, fatty stools	Poor personal hygiene, infected workers touching food, inadequate cooking, inadequate sewage disposal
Hepatitis A	Shellfish, any food contaminated by hepatitis viruses, Hepatitis virus A from feces, urine, blood or infected humans and other primates, water	Fever, malaise, lassitude, anorexia, nausea, abdominal pain, jaundice	Infected workers touching food, poor personal hygiene, inadequate cooking, harvesting shellfish from sewage contaminated waters, inadequate sewage disposal
Ibotenic acid group of mushroom poisoning	<i>Amanita muscaria</i> , <i>A. pantherina</i> and related species of mushrooms	Drowsiness and state of intoxication, confusion, muscular spasms, delirium, visual disturbances	Eating <i>Amanita muscaria</i> and related species of mushrooms, eating unknown varieties of mushrooms, mistaking toxic mushrooms for edible varieties
Lead poisoning	High-acid food and beverages stored in lead-containing vessels, any food accidentally contaminated	Metallic taste, burning of mouth, abdominal pain, milky vomitus, bloody or black stools, foul breath, shock, blue gum line	Storing high-acid food in lead containing vessels, storing pesticides in same area as food
Listeriosis	Cole slaw, deli-meats, milk, cheese, animal products	Sores, chills, sweating, malaise, headache, muscle and joint pain, weight loss	Inadequate cooking, unpasteurized milk, prolonged refrigeration
Mercury poisoning	Grains treated with mercury-containing fungicide; pork, fish and shellfish exposed to mercury compounds	Numbness, weakness of legs, spastic paralysis, impairment of vision, blindness, coma	Streams polluted with mercury compounds, feeding animals grains treated with mercury fungicides, eating mercury-treated grains or meat from animals fed such grains
Muscarine group of mushroom poisoning	<i>Clitocybe dealbata</i> , <i>C. rivulosa</i> and many species of <i>Inocybe</i> <i>Boletus</i> mushrooms	Excessive salivation, perspiration, tearing, reduced blood pressure, irregular pulse, pupils constricted, blurred vision, asthmatic breathing	Eating muscarine group of mushrooms, eating unknown varieties of and mushrooms, mistaking toxic mushrooms for edible varieties
Mushroom poisoning	Wild mushrooms	Nausea, vomiting, retching, diarrhea, abdominal cramps	Mistaking edible varieties with toxic mushrooms
Nicotinic acid	Meat, baby food	Flushing, itching, puffing face and knees, abdominal pain	Improper use of sodium nicotinate as colour preservative

## Food Protection - Vital to Your Business

Illness	Common Food Involved	Signs and Symptoms	Contributing Factor
Nitrite poisoning	Cured meats, any accidentally contaminated food, exposed to excessive nitrification	Nausea, vomiting, cyanosis, headache, dizziness, weakness, loss of consciousness, chocolate brown-coloured blood	Using excessive amounts of nitrites or nitrates in foods for curing or for covering up spoilage, mistaking nitrites for common salt and other condiments, inadequate refrigeration
Norovirus gastroenteritis	Clams, oysters, salads, pastries, frostings	Nausea, vomiting, diarrhea, fever, chills, abdominal pain, anorexia, headaches, malaise	Polluted shellfish water, poor personal hygiene, infected person handling food
Pathogenic <i>Escherichia coli</i> gastroenteritis	Various food, water contaminated with enterotoxigenic or invasive strains of E. coli from feces of infected humans and other animals	Abdominal pain, diarrhea, nausea, vomiting, fever, chills, headache, muscular pain	Infected workers touching food, inadequate refrigeration, inadequate cooking, inadequate cleaning and disinfection of equipment
Pork tapeworm infection	Raw or insufficiently cooked pork	Vague discomfort, hunger pains, loss of weight	Lack of meat inspection, inadequate cooking, inadequate sewage disposal, sewage contaminated pastures
Q fever	Raw milk (rare)	Chills, headache, weakness, malaise, perspiration, fever, cough, chest pain	Ingestion of contaminated raw milk, failure to pasteurize milk (62.8°C/145°F . . . 30 minutes; 71.7°C/161°F. . . 15 seconds)
Salmonellosis	Poultry and meat and their products, egg products, other food contaminated by various serotypes of salmonellae from feces of infected humans and other animals	Abdominal pain, diarrhea, chills, fever, nausea, vomiting, malaise	Inadequate refrigeration, holding food at warm (bacterial incubating) temperatures, inadequate cooking and reheating, preparing food several hours before serving, cross-contamination, inadequate cleaning of equipment, infected workers touching cooked food, obtaining food from contaminated sources
Scombroid poisoning	Tuna, mackerel, Pacific dolphin	Headache, dizziness, nausea, vomiting, peppery taste, burning throat, facial swelling and flushing, stomach pain, itching or skin rash	Inadequate refrigeration of scombroid fish
Shellfish poisoning	Mussels and clams	Tingling, burning, numbness around lips and finger tips; giddiness, incoherent speech, respiratory paralysis	Harvesting shellfish from waters with high concentration of Gonyaulax

## Food Protection - Vital to Your Business

Illness	Common Food Involved	Signs and Symptoms	Contributing Factor
Shigellosis	Any food contaminated with <i>Shigella flexneri</i> , <i>S. dysenteriae</i> , <i>S. sonnei</i> , and <i>S. boydii</i> from feces of infected humans, frequently salad, water	Abdominal pain, diarrhea, bloody and mucoid stools, fever	Infected workers touching food, inadequate refrigeration, inadequate cooking and reheating
Sodium hydroxide poisoning	Bottled beverages	Burning of lips, mouth and throat; vomiting, abdominal pain, diarrhea	Inadequate rinsing of bottles cleaned with caustic washing compounds, or detergents
Staphylococcal intoxication	Ham, meat and poultry products, cream-filled pastry, food mixtures, leftover food	Nausea, vomiting, retching, abdominal pain, diarrhea, prostration	Inadequate refrigeration, workers touching cooked food, preparing food several hours before serving, workers with infections containing pus, holding food at warm (bacterial incubating) temperatures; fermentation of abnormally low-acid food
Tetraodon poisoning	Puffer-type fish	Tingling sensation of fingers and toes, dizziness, pallor, numbness of mouth and extremities, gastrointestinal symptoms, hemorrhage and desquamation of skin, eyes fixed, twitching, paralysis, cyanosis	Eating puffer-type fish, failure to effectively remove intestines and gonads from puffer-type fish if they are to be eaten
Tin poisoning	High-acid food and beverages stored in tin-lined cans	Bloating, nausea, vomiting, abdominal cramps, diarrhea, headache	Using uncoated tin containers for storing acid food
Toxoplasmosis	Raw or insufficiently cooked meat (rare)	Fever, headache, myalgia, rash	Inadequate cooking of meat of sheep, swine and cattle
Trichinosis	Pork, bear meat, walrus flesh	Gastroenteritis, fever, edema about eyes, muscular pain, chills, prostration, laboured breathing	Eating raw or inadequately cooked pork or bear meat, inadequate cooking or heat processing, feeding uncooked or inadequately heat processed garbage to swine



## Food Protection - Vital to Your Business

Illness	Common Food Involved	Signs and Symptoms	Contributing Factor
Typhoid fever	<i>Salmonella typhi</i> from feces of infected humans. Shellfish, food contaminated by workers, raw milk, cheese, watercress, water	Malaise, headache, fever, cough, nausea, vomiting, constipation, abdominal pain, chills, rose spots, bloody stools	Infected workers touching food, poor personal hygiene, inadequate cooking, inadequate refrigeration, inadequate sewage disposal, obtaining food from unsafe sources, harvesting shellfish from sewage-contaminated waters
<i>Vibrio parahaemolyticus</i> gastroenteritis	Raw seafood, shellfish	Abdominal pain, diarrhea, nausea, vomiting, fever, chills, headache	Inadequate cooking, inadequate refrigeration, cross-contamination, inadequate cleaning of equipment, using sea water in food preparation
Viral gastroenteritis	Enteric viruses (ECHO viruses, Coxsackie viruses, rotaviruses, adenoviruses). Food sources unknown	Diarrhea, fever, vomiting, abdominal pain, sometimes respiratory symptoms	Poor personal hygiene, infected workers touching food, inadequate cooking and reheating
Yersiniosis	Milk, tofu, water	Severe abdominal pain, fever, headache, malaise, sore throat	Inadequate cooking, food contaminated by rodents or animal, contamination after pasteurization
Zinc poisoning	High-acid food and beverages stored in zinc galvanized containers	Pain in mouth and abdomen, nausea, vomiting, dizziness	Storing high-acid food in galvanized cans

## Food Protection - Vital to Your Business

### CLEANING AND STORING DISHES AND UTENSILS

#### *Washing Dishes and Utensils*

- Scrape off food and waste before washing.
- Pre-soak pots and pans in warm, soapy water for 10 to 30 minutes.
- Pre-soak cutlery in hot water or a commercial soaking chemical for 10 to 15 minutes.
- Rinse dishes, cutlery, pots and pans with a hose or spray before washing them.
- Wash by hand in a three-compartment sink:
  - Use clean brushes and cloths reserved only for this use.
  - Change water often.
  - Wash in the first sink in detergent and clean, hot water – at least 44°C (110°F). Use brushes for glasses.
  - Rinse in the second sink in hot water – at least 44°C (110°F).
  - Sanitize in the third sink in a sanitizing solution.

A rectangular stamp with a distressed, ink-like border containing the text "44°C".

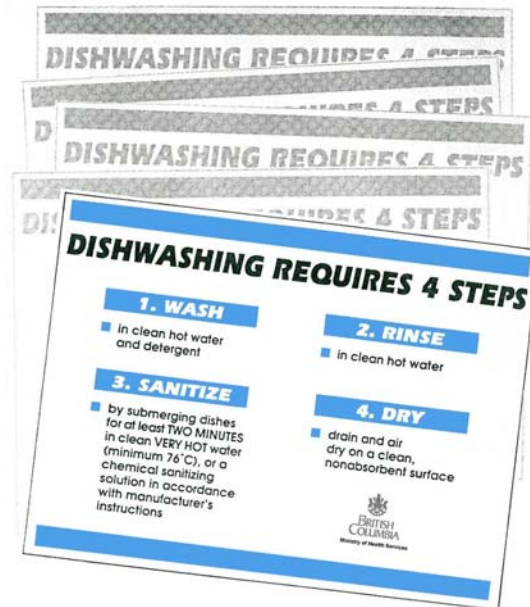
OR

- Wash by commercial machine:
  - Follow instructions for each machine.
  - Group dishes by shape and size.
  - Place dishes so that water can reach all parts of each one.
  - Place cups, bowls and glasses with their bottoms up.
  - Put cutlery in special containers and mix to prevent one piece nesting inside another.
  - Use detergent and hot water – at least 60°C (140°F).
  - Sanitize in rinse water – at least 83°C (180°F) – or use a low-temperature chemical sanitizer.
  - Check to see that the machine maintains the recommended time cycle for each stage.
  - Check that all temperatures are maintained.
  - Empty scrap trays and clean wash sprays before each use of the machine.
- Use glass-washing machines, if required:
  - Follow instructions for each machine.
  - Wash glasses in detergent and hot water.
  - Rinse in cold water.
  - Sanitize.
- Air dry and cool dishes on a clean, non-absorbent surface. Never towel dry.
- Store carefully:
  - Wash hands before touching.
  - Do not touch eating surfaces.
  - Pick up glasses by the base.
  - Pick up cups, cutlery, pots and pans by the handles.
- Do not wash single-use items such as plastic spoons or styrofoam cups.

A rectangular stamp with a distressed, ink-like border containing the text "60°C".A rectangular stamp with a distressed, ink-like border containing the text "83°C".

## Food Protection - Vital to Your Business

<b>SANITIZERS</b>	
<b>Agent</b>	<b>Concentration (in parts per million – ppm)</b>
Chlorine (Household bleach)	100 ppm (minimum) or ½ ounce per gallon (1 teaspoon or 5 mL per litre) for washing by hand; or 50 ppm (minimum) or ¼ ounce per gallon for washing in commercial dishwashers or glass-washing machines. Check concentration with chlorine test paper.
Quaternary ammonium (Quats)	200 ppm, or as per instructions on manufacturer’s label.
Iodine compound	12.5 ppm (minimum). Add until water is khaki brown. Check concentration with tablets and test kits.



### *Storing Dishes and Utensils*

- Store all dishes and utensils (including single-use items) well above the floor on clean shelves in clean cupboards away from dust, garbage, food and water.
- Store glasses and cups upside down.
- Store cutlery and utensils in clean containers. Store cutlery with handles “up”.



## Food Protection - Vital to Your Business

### MAINTAINING EQUIPMENT

#### *All Equipment*

- Keep in good working condition.
- Operate and maintain according to the manufacturer's instructions.
- Wash and sanitize equipment that contacts food – as often as necessary to keep it sanitary.
- Contact the supplier, service agent or Environmental Health Officer for further advice.

#### *Dishwasher*

- Clean wash ports and rinse jets regularly to avoid clogging.
- Scrub the inside thoroughly each day.
- Leave the door open to air the machine when it is not in use.
- Check operating temperatures and/or sanitizing levels frequently.

#### *Glass-washer*

- Clean and rinse the tank.
- Remove racks and plugs. Scrub with a brush and detergent. Air dry before replacing.
- Leave the door open to air the machine when it is not in use.
- Check operating temperatures and/or sanitizing levels frequently.

#### *Stove, Range and Grill*

- Cool range tops, lids and ovens before washing.
- Use a scouring powder to remove spilled food and rust.
- Clean after using.
- Remove all traces of cleaning agents from ovens and grills.
- Keep range free of grease.
- Keep gas-holes unplugged and adjust air shutters to maintain a blue flame from a gas burner.

#### *Microwave Oven*

- Do not use scouring pads or any other abrasive material that may scratch the oven interior or door seal.
- Wipe up all spills at once.
- Use a damp cloth to wipe all inside surfaces and the door seal every day. Dry after wiping.
- Do not operate an empty oven.
- Inspect the door seal, hinges and latch at least once a week – clean and repair as needed.



## Food Protection - Vital to Your Business

- Do not insert any object such as wire or aluminum foil through the door grill or around the door seal.
- Do not inactivate safety locks.
- Do not attempt any repairs. Contact a qualified technician.
- Have a qualified technician inspect the oven annually.

### *Deep Fryer*

- Do not use to cook food with excessive moisture. (The moisture may cause the fat to boil over.)
- Use a non-toxic, non-flammable solution to wipe the outside.

### *Kettle*

- Clean with a stiff brush, hot soapy water and cleansing soda.
- Rinse with hot, clean water, and dry.

### *Refrigeration Equipment*

- Check to see that door latches work.
- Make sure that door seals are in good condition.
- Ensure that wastewater discharges into an open sink or drain that is properly trapped and connected to the sewer. If sewer connections are not available, use watertight drip pans.
- Defrost regularly.
- Check and maintain an accurate thermometer for each refrigerator or freezer.



### *Meat Block*

- Do not expose the block to unnecessary blood, brine and moisture by leaving meat on it.
- Do not use the block to prepare ready-to-eat food that will not be cooked such as cold cuts, cheese and salads.
- Use a sharp scraper to help clean the block.
- Do not damage the surface with improper use of mauls, knives and cleaners. (This makes cleaning more difficult.)
- Keep the block as dry as possible to keep it hard and wear-resistant.
- Clean and sanitize the block after each use.
- Plane the block regularly to eliminate cracks and grooves.

### *Meat Grinder*

- Use a stomper to feed meat into the grinder.
- Take apart to clean and sanitize after each use.

## Food Protection - Vital to Your Business

### *Meat Slicer*

- Take apart and clean thoroughly.
- Wash and sanitize after each use.

### *Beer and Wine Dispensing Equipment*

- Clean draft beer lines at the start of every day. Use a milk alkaline detergent solution under pressure. Then pull through a beer line brush and flush with clean water.
- Clean washers on the beer line connections. Replace when worn.
- Take beer taps apart and clean daily. Soak in an alkaline detergent solution, then brush and rinse in clean water.
- Clean tap rods and fittings before the keg is tapped. Use an alkaline detergent solution to brush the tap rod and fittings. Rinse in clean water.
- Wash fittings regularly. Replace when worn.
- Wash pouring spouts on wine decanters each morning with a small brush.
- Wash wine decanters after each use.

### *Ice Cream Fountain*

- Keep the area under the fountain free of spills and rubbish.
- Wash the fountain top and sides with warm water and detergent.
- Remove the nozzles and clean thoroughly.
- Clean the covers and hinges with a clean, damp cloth.
- Remove and clean the drip pan and plate.
- Remove excess frost from the walls. Do not use any sharp instrument.
- Flush the syrup rail and wash with washing soda and warm water before recharging.
- Wash syrup jars and pumps.
- Flush the drain trough with washing soda and warm water.
- Wash the dry storage compartment with washing soda and cool water.
- Clean the drain pipe which carries water from the drip plates. Slowly pour a mixture of hot water and washing soda into the drip plates to remove residue.
- Flush drains with hot water and soda when necessary.

### *Ice Cream Freezer, Malt and Milkshake Machine*

- Clean at the end of each day.
- Follow these steps:
  - With machine in motion and freezing unit off:
  - Flush for one or two minutes with warm – not hot – water.
  - Scrub non-moving parts with a brush.
  - Drain and flush with clear, warm water.
  - Wash with a soapless detergent solution for one minute.
  - Drain and shut machine down.
  - Take machine apart and scrub all parts with a detergent solution.

## Food Protection - Vital to Your Business

- Reassemble, start the machine and rinse with hot water for one or two minutes.
- Drain. Do not wipe dry.
- Sanitize with a solution approved by the Health Officer.
- Sanitize the milkshake mixer immediately after cleansing.
- Sanitize the freezer for five minutes immediately after cleansing and just before starting machine. Drain but do not rinse.

### *Grease Trap*

- Inspect regularly.
- Pump out grease to ensure a free flow of wastewater.
- Clean as frequently as necessary. If the grease trap is indoors, take care to avoid splashing or contaminating food storage or preparation areas.

## Food Protection - Vital to Your Business

### MAINTAINING A FOOD BUSINESS

#### *Keeping Food Areas Clean*

- Maintain a routine for cleaning all areas used to store, display, refrigerate, prepare, cook, serve and eat food.
- Sweep floors after meals or after closing. (Keep down dust by using a push broom or vacuum cleaner.)
- Mop floors frequently.
- Clean and sanitize shelves and walls regularly.
- Wipe up spills at once.
- Clean all surfaces, racks and trays at least once a week.
- Keep all furniture, equipment and appliances clean and in good repair.
- Launder all non-disposable table covers and napkins after each use.
- Clean eating tables after each use with cloths specifically used for that purpose.
- Rinse table-cleaning cloths in a disinfectant and change the water frequently.



#### *Keeping Washrooms Clean*

- Check washrooms frequently throughout the day.
- Wash and sanitize washrooms, sinks and toilets daily.
- Keep plumbing in good operating condition.
- Provide a continuous supply of toilet paper, single-service hand towels (or warm-air hand dryers) and soap.
- Ensure a sufficient supply of hot water.
- Do not use washrooms to store equipment or supplies such as wet mops or cleaners.

#### *Storing Cleaners*

- Store in a cupboard or closet away from food.
- Never use old food containers to store cleaners.
- Keep cleaners in clearly marked containers.



#### *Avoiding Sanitation Problems in Food Areas*

- Keep out cats, birds, dogs (except guide dogs) and any other animal.
- Do not store any material or equipment not required by the food operation in food storage, display or preparation areas.
- Make sure all surfaces that contact food are free of breaks, corrosion, open seams, cracks and chips.
- Ensure air circulation to reduce moisture.
- Avoid use of cardboard cartons. (They absorb moisture and harbour insects.)





## Food Protection - Vital to Your Business

### *Deterring Insects, Mice and Rats*

- Store dry bulk food such as sugar and flour in metal or other approved containers and keep them covered.
- Do not keep pop cases, or piles of cartons or newspapers that may attract and harbour pests.
- Clean behind and under equipment, sinks and counters.
- Check frequently for signs of pests – both outside and inside. (Use a flashlight to check in dark corners and crevices, and beneath equipment.)
- Store and dispose of garbage properly. (See “Controlling Garbage”)
- Seal off small holes and crevices around the foundation, and near drains and pipes.
- Use tight fitting screens on open windows.
- Use tight fitting doors with bottom edges made of metal.
- Use tight fitting screen doors that close automatically to cover doorways that are left open.
- Place screens over ventilation ducts and floor drains.
- Use fans to help keep flies out.
- Put metal guards on pipes and wires attached to the outside of the building to prevent rodents from climbing up.
- Keep the outside area free of weeds, rubbish and old equipment.
- Examine new deliveries for evidence of pests.

### *Controlling Insects, Mice and Rats*

- Use fly attractors, glue boards and rodent traps where there are occasional signs of pests.
- Do not use flypaper directly over food preparation or eating areas. (Glue and flies may drip.)
- Use only approved pesticide applicators.
- Hire a licensed pest control operator if signs of pests persist.

### *Controlling Garbage*

- Use water-tight garbage cans made of non-absorbing material such as heavy plastic or metal.
- Make sure garbage cans have tight-fitting lids.
- Line garbage cans with plastic bags.
- Remove full garbage cans from washrooms and any room where food is prepared, stored or served.
- Place garbage cans:
  - outside, preferably on a cement slab that is suitable screened to keep scavengers out; or
  - in a separate room, preferably one with ventilation, washable walls, a sloping concrete floor, a floor drain and a hose for frequent washing.
- Remove all garbage at least twice each week.
- Contact the Environmental Health Officer for advice if garbage collection services are not available.
- Wash garbage cans after emptying them.



# Food Protection - Vital to Your Business

## OPERATING VENDING MACHINES

### *Location and Construction*

- Place a vending machine only in an area that is:
  - easily cleaned; and
  - approved by the Environmental Health Officer.
- Ensure that any condenser unit is sealed off from food and food containers.
- Ensure that all machine surfaces are easily cleaned, non-toxic and corrosion-resistant.
- Ensure that containers and fittings can be taken apart for cleaning and sanitizing.
- Ensure that the machine automatically stops dispensing potentially hazardous food if proper temperatures are not maintained.
- Make sure that food storage compartments are self-draining.
- Protect food and food containers in storage compartments with tight-fitting doors and panels.
- Protect food and food containers in dispensing compartments with self-closing, tight fitting doors or covers.

### *Machines Using Water*

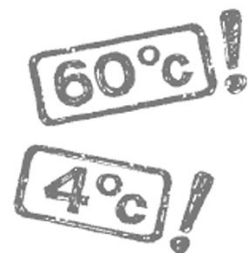
- Use only potable water (safe to drink).
- Pipe water to machine under pressure.
- Equip the machine with an air gap or two check valves to prevent carbon dioxide or carbonated liquid from entering the water supply.
- Make sure that no materials in the machine react with substances such as carbon dioxide to produce toxins.

### *Sanitation*

- Supply a two-compartment sink for washing and sanitizing parts of the machine and equipment that contact food.
- Provide convenient hand-washing facilities for personnel who service the machines.
- Screen openings in the machine to keep out insects.

### *Supplying, Displaying and Preparing Food*

- Keep a thermometer in any compartment in the machine that contains potentially hazardous food.
- Keep perishable food below 4°C (40°F) or above 60°C (140°F) in the machine.
- See the following sections of the manual:
  - *"Ensuring Safe Food Supplies"*;
  - *"Storing and Displaying Food"*; and
  - *"Preparing, Cooking, Serving and Dispensing Food"*.



## Food Protection - Vital to Your Business

### FOODSAFE

#### *The FOODSAFE Training Program*

FOODSAFE training is an internationally renowned program about safe food handling practices. It was first developed in 1986 in British Columbia through the cooperation of the Provincial Government, the Capital Health Region, the Knowledge Network, the Telecollege Consortium and the Restaurant and Foodservices Association of British Columbia. FOODSAFE training is now available province-wide and is also the main food safety educational program for several provinces in Canada. It offers foodservice workers a better understanding of how food can become contaminated, and how foodborne illness can be avoided through proper food handling procedures.

The FOODSAFE training course offers two levels of instruction: Level 1 offers basic training, while the advanced level (Level 2) is directed to supervisors and managers. It is recommended that supervisors and managers take both levels of the course.

Each level takes eight to 10 hours of class time to complete, and classes are offered regularly through the province's community colleges, health regions, and through the school system. Both levels of FOODSAFE can now also be taken on-line. For those who have trouble attending either classroom or on-line sessions, FOODSAFE can also be taken through a correspondence module. The correspondence program is administered on behalf of FOODSAFE by **Go2** (formerly HIEAC) – a food service educational program provider.

The FOODSAFE program is taught by certified instructors, who use DVD's, power point slides and workbook material to graphically demonstrate case study examples of how foodborne illness can occur. Students are also shown practical methods for the safe storage, preparation and serving of various foods. All students must pass an exam to complete the FOODSAFE training course and receive a FOODSAFE Certificate.

To obtain more information on [FOODSAFE](#) courses in your community, or how to access on-line courses, go to [www.foodsafe.ca](http://www.foodsafe.ca). For information on the correspondence course, contact [Go2](#) at [www.go2hr.ca](http://www.go2hr.ca) or call 604-633-9787.

As of July 1, 2000, it is a legal requirement that the operator of a food service establishment, and at least one person in his/her absence, has completed the FOODSAFE Level 1 course or its equivalent. If you have any questions about this requirement, please contact your local Environmental Health Officer.

## Food Protection - Vital to Your Business

### FOOD SAFETY PLANS AND SANITATION PLANS

#### *Food Safety Plans*

Food safety does not happen by accident. To prepare safe food, you must follow certain steps and procedures throughout the entire food preparation process. You have to think, and you have to pay attention to how you prepare food, to make sure it is safe. This is the basis for developing your own Food Safety Plan.

A basic Food Safety Plan uses the "HACCP" method. HACCP stands for "Hazard Analysis - Critical Control Points". HACCP was developed by NASA to make sure the food on their space flights was safe to eat. But it is not a complicated process. It just means that you have to first identify the various steps you take when you prepare your menu items, then look for possible sources of contamination, and then find ways to control these sources. A good Food Safety Plan will make sure that anything that might make someone sick is under control. And because food safety is so important, having a Food Safety Plan is a legal requirement in BC.

To get more information about how to write your own Food Safety Plan, contact your local Environmental Health Officer. As well, there is also many booklets that explain how to write a Food Safety Plan including "[Ensuring Food Safety: Writing Your Own Food Safety Plan- The HACCP Way](http://www.bccdc.ca/foodhealth/foodguidelines/default.htm)". It can be found at <http://www.bccdc.ca/foodhealth/foodguidelines/default.htm> .

#### *Sanitation Plans*

Having a clean and sanitary establishment is critical to being able to produce safe food for your customers. A food premises operator must be able ensure that the facilities and all equipment are adequately maintained and cleaned. This is the basis of a Sanitation Plan.

Written Sanitation Plans outline how food contact and non-food contact surfaces are cleaned (sanitation procedures) as well as critical items such as cleaning frequencies, the types of cleaning and other chemicals used, pest control, and waste removal. Studies have shown that written Sanitation Plans can actually save you money by reducing chemical usage and training time for new employees.

Written Sanitation Plans are a requirement for all food service establishments in BC. To get more information about how to write your own Sanitation Plan, contact your local Environmental Health Officer.





