

FARMERS' MARKET HOME STUDY COURSE



Farmers' Market Home Study Course

Environmental Public Health developed this course to help market managers and vendors set up and operate a Farmers' Market in a sanitary manner. The goal of the course is to help stop the spread of foodborne illness.

Study the course booklet at your own pace, and then complete the attached exam. The exam has a total of 25 multiple-choice questions. The passing mark is 80%. Upon passing the exam, a **Farmers' Market Home Study Course Certificate** will be awarded and mailed to you, which is valid for three years.

According to the Alberta Agriculture and Rural Development Alberta Farmers' Market Guidelines, this home study course is mandatory for all approved Farmers' Market managers and vendors.

We feel that your time will be well spent, and the information you learn will make your Farmers' Market safer. Please keep this document as a reference for what is expected of you under the Alberta Public Health Act Food Regulation.

Introduction to Farmers' Markets

The Alberta Approved Farmers' Market Program, run by Alberta Agriculture and Rural Development, began in 1973 with four approved markets. Today there are more than 100 approved Farmers' Markets in the province, including 16 year round markets. An Alberta Agriculture and Rural Development study reported that Alberta Farmer's Market sales, excluding crafts, increased from \$230 million in 2004 to \$380 million by 2008. This is a 63% increase, reflecting both population growth and an increase in per visit spending. The study also estimates that more households will buy locally grown and produced foods in the coming years.

Due to the remarkable increase in Farmers' Market's popularity, food safety at the markets requires that much more attention.

Definitions

Farmers' Market – a place to buy and sell locally grown food, crafts and homemade goods. It must be approved by Alberta Agriculture and Rural Development as an approved Farmers' Market Program.

Stallholder – a person who rents a space at a Farmers' Market to sell their product, also referred to as a vendor.

High-risk food (Potentially Hazardous) – food that has the right conditions that support the growth of harmful bacteria or production of toxins. For example, cheese, milk, poultry, antipasto, meats, cabbage rolls, sausage rolls, low sugar fruit spreads, meringue pies, cheesecake, etc.

Low-risk food – food that does not support the growth of harmful bacteria. For example, pickled products, crackers, cookies, jams and jellies, etc.

Pickled products – shelf stable foods processed with salt, sugar, and/or vinegar. For example, pickled cucumbers, pickled beets, horse radish, kimchi, pickled eggs, etc.

Shelf stable foods must have at least one of the following criteria:

- a pH less than 4.6
- less than 0.86 water activity
- more than 10% salt
- more than 55% sugar

Processing – mixing, assembling, forming, or preparing food. This includes heating and cooking food for service. This does not include sampling food products.

Temperature Conversion Table –

Celsius	Fahrenheit
4°C	40°F
7°C	45°F
60°C	140°F
74°C	165°F
85°C	185°F

All food handling at a Farmers’ Market must comply with the Food Regulation under the Public Health Act.

You can get a copy of the Food Regulation and the Public Health Act online at the Alberta Queen’s Printer website at www.qp.gov.ab.ca or by telephone at 780-427-4957.

The Food Regulation requires that the organization operating a Farmers’ Market hold a valid Farmers’ Market Permit.

The Farmers’ Market Permit is often printed with the name of the market manager.

Most individual stallholders do not require their own food handling permit. If a stallholder processes food within their own stall then they do require their own separate food handling permit.

Market Manager Responsibilities

- Make sure the market has:
 - Access to hot and cold running water. This water must be safe to drink.
 - Access to a two-compartment sink.
 - Access to public toilets and handwashing sinks. Alberta Health Services must approve the installation of portable toilets.
 - Garbage containers that are emptied daily.
 - Food vendor stalls that are easy to clean.
- Do not allow live animals in food areas except for service animals, for example seeing-eye dogs.
- Keep an updated list of all food vendors and give it to the Public Health Inspector upon request. The list must include vendors' contact numbers and type of food items sold.
- Inform the Public Health Inspector when a new vendor joins the market.
- Keep the market clean and sanitary during the market hours.
- Make sure each stall is completely cleaned at the end of each business day.
- Make sure stallholders selling high-risk food products have reviewed their food preparation procedures with Alberta Health Services.
- Make sure all stallholders know and follow the market rules.
- Complete the Daily Farmers' Market Manager's Checklist – see Appendix A.



Stallholder Requirements

To reduce the risk of a foodborne illness incident, it is important that the stallholder follow these rules when selling or distributing food at a Farmers' Market:

- Do not process food at the market, except for food samples, unless you have been issued your own Food Handling Permit by Alberta Health Services.
- Protect all food, except whole fruits and vegetables, from contamination and customer handling by using covers, packaging, or sneeze guards. This reduces the risk of food contamination from dust, dirt, debris, and people. Only use food packaging that is made out of food grade materials. For example, do not use garbage bags for food storage as it is not considered to be a food grade plastic.
- Use clean, new plastic wrap, plastic and paper bags, or other food grade containers, like stainless steel or glass, to store food.
- Only inspected and approved meats may be sold at the market. Be prepared to provide evidence of this to the Public Health Inspector. This may be a stamp, tag, or label on the meat or packaging, or it may be in another form of documentation.
- Home canned food is not allowed, except for jam, jelly, or pickles. Home canned jams and jellies must have more than 55% sugar. Pickled products can include, but are not limited to, foods such as cucumbers, green peppers, carrots, beets, horse radish, mushrooms, kimchi, cabbage, eggs, green tomatoes and onions.
 - If you have a home canned product you must be able to prove that it meets the correct sugar, salt, or pH levels. This can be done by testing your product at a private laboratory. Search for private labs in the phone book or visit Alberta Agriculture's website at:
<http://www.agric.gov.ab.ca/app68/agriprocessors?cat1=Analytical+Laboratories>.

- Store, display and transport high risk foods at a temperature of 4°C or colder or 60°C or hotter. Use thermometers to check that food is being stored at the right temperature.
- Keep frozen foods frozen solid while stored, displayed, or transported.
- Store, display and transport whole raw shell eggs at 7°C or colder. The eggs must be clean and free of cracks.
- Unpasteurized milk is not allowed. Any milk offered for sale must come from a producer that has been licensed by Alberta Agriculture or registered by Canadian Food Inspection Agency.
- Any food with restricted foods such as unpasteurized milk or uninspected meat as ingredients is not allowed, with the exception of cheese produced in a licensed or registered facility.
- Store all food and equipment/utensils used to handle the food off the ground and in a sanitary manner.
- Wash and sanitize all surfaces that come in contact with food as often as necessary to maintain cleanliness. Wash and sanitize any surface that comes in contact with raw meats immediately after use.
- Do not sell high-risk foods stored in jars. Customers might believe that these items are canned, and then they might not properly store these items. Clean, new plastic, styrofoam or paper containers are acceptable for food storage.
- A stallholder must make sure that the food handlers working with their products follow all applicable food safety guidelines and procedures.
- Refer to Appendix B - Alberta Health Services Farmers' Market Vendors' Food Safety Checklist.

What rules must a food handler follow?

A food handler must:

- Practice good personal hygiene.
- Wear clean clothing and footwear.
- Keep hair under control. This may be done with a hat, hair net, pulling hair back into a pony tail, or any other approved method.
- Wash hands often.
- Keep fingernails short and clean. Do not wear nail polish or fake fingernails.
- Avoid wearing jewellery.
- Not smoke in a food area.
- Not handle food if ill with a communicable disease, for example vomiting or diarrhea.
- Cover any cuts or burns on the hands with a bandage and then wear a single use glove over the bandage.

Home-canned foods: What is the food safety risk?

- *Clostridium botulinum* is a food poisoning bacterium that can grow in canned foods.
- *C. botulinum* produces a toxin (a nerve poison) which causes **botulism** (a rare but serious illness).
- *C. botulinum* is commonly found in natural environments, like in dirt.
- The symptoms of botulism may include nausea, vomiting, fatigue, dizziness, headache, double vision, dryness in the throat and nose, paralysis, respiratory failure, and even potentially death.
- The symptoms of illness usually starts anywhere from 12 to 36 hours after eating the toxin.
- The illness can last anywhere from 2 hours to 14 days, although complications from the illness may last a lot longer.
- The risk for botulism is particularly associated with improperly prepared home-canned, low acid foods (e.g. corn, green beans, mushrooms, spaghetti sauce, salmon) and low acid juice (e.g. carrot juice). Pickling canned foods with vinegar makes food more acidic which prevents the growth of *C. botulinum*.
- Commercially canned low acid foods use strict thermal processes which are designed to destroy *C. botulinum* spores.
- Due to the risk of botulism, the only home canned products allowed at a Farmers' Market are jams, jellies, and pickles.

How do I safely can jams, jellies and pickles?

- Home canned jams, jellies and pickles must be sealed using new approved lids (click lids, two piece snap lids).
- Freezer jams are to be kept frozen.
- Refer to Appendix C - Alberta Health Services Farmers' Market Guidelines for Canning Lids and Jars.



Labelling Food Products

The Canadian Food Inspection Agency (CFIA) requires that all food products are properly labelled under the *Consumer Packaging and Labelling Act*. Before creating a label for a food product please check the **Guide to Food Labelling and Advertising** found on the CFIA website (<http://www.inspection.gc.ca>). It is the responsibility of the stallholder to ensure that their product meets the federally legislated labelling requirements.



Why is it important to properly label food items for sale?

- A list of ingredients lets customers know if they need to avoid certain foods because of an allergy or intolerance. Some people also may avoid foods due to a lifestyle choice such as being vegetarian or vegan.
- The name of the product and the producer's contact information is important so that the product can be recalled if there is a safety or quality concern.
- How to store the food product is important for maintaining its safety and quality. For example, "refrigeration required", or "keeps in cool, dry conditions".
- A best before date is important so that the product is eaten within a reasonable time after production. This will help in maintaining the quality and the safety of the product.

Sampling Food Products

- Food product samples are allowed at Farmers' Markets.
- A sample is a free, bite-sized portion of your food product.
- Alberta Health Services prefers pre-portioned food samples, in order to avoid cutting and handling of the food within the stall.
- Prevent the public from handling food samples and protect all food samples from contamination. For example, hand the samples to the customer by using a tooth pick or disposable paper cups or containers.
- Do not offer open bowls or bags of chips, pretzels, or crackers for customer self service.
- If food samples are provided to the public, cook the food to a proper internal temperature, use a thermometer to check the temperature and pre-cut into sample portions.
- Replace samples if they have been displayed for over an hour and discard leftover samples and those that may have been contaminated.
- All handwashing requirements and food handler requirements must be followed.



Handwashing, sink, and equipment requirements for sampling food

1. Markets operating one day a week or less

Low-risk food samples that are pre-portioned, and handled only with utensils, require hand gel and access to a hand sink. Access to a temporary hand sink is acceptable.

Low-risk food samples that are portioned on-site in the stall, or pre-portioned high-risk food samples, require a hand sink in the stall. A temporary hand sink is acceptable.

High-risk food samples portioned or reheated in the stall require a hand sink in the stall. A temporary hand sink is acceptable. An approved sanitizer at the right concentration and extra utensils, like knives or tongs in case they get dirty during the day are also required.

High-risk food samples cooked from raw in the stall require a hand sink in the stall. A temporary hand sink is acceptable. Extra utensils, separate utensils for raw and cooked, and access to a two-compartment sink with hot and cold running potable water are also required.

2. Markets operating more than one day a week

Low-risk food samples pre-portioned and handled only with utensils require hand gel and access to a hand sink.

Low-risk food samples portioned on-site in the stall or pre-portioned high-risk food samples require a hand sink with hot and cold running water in the stall.

High-risk food samples portioned or reheated in the stall or cooking high-risk food samples from raw in the stall require a two-compartment sink with hot and cold running water in the stall. Soap and paper towels, dish soap, and an approved sanitizer at the right concentration are also required. An additional separate hand sink may be required where the number of utensils or potential contamination is determined to be significant.

- Temporary hand sinks include the use of coffee urns, spigot containers or a similar device. Temporary hand sinks must drain into a bucket of sufficient size to prevent water from running on to the ground. Stallholders are responsible for emptying the buckets and making sure the buckets do not overflow.
- All cooking and reheating of food samples must be approved by Alberta Health Services. Place cooking equipment within the stall and away from customer contact. Use a thermometer to check that the cooked food has reached an internal temperature of 74°C.
- An approved sanitizer must be available on-site at all times for sanitizing surfaces and utensils, and test papers must be available to verify the sanitizer's concentration. Ensure the sanitizer bucket or spray bottle is labelled as to its contents. Approved sanitizers include:

- **Bleach** A chlorine solution of not less than 100 ppm (parts per million) chlorine. To achieve this concentration, dilute household bleach (chlorine) as follows:
 - one tablespoon per gallon of water, or
 - ½ ounce per gallon of water, or
 - ½ teaspoon per litre of water, or
 - 2 millilitres per litre of water.

These dilutions are approximations based on 5% available chlorine or household bleach. If used for disinfecting surfaces, the diluted bleach (chlorine) should be freshly prepared on a daily basis. Store bleach in a labeled spray bottle. Keep bleach away from children.

- **Quats** A quaternary ammonium compound (quats) having a strength of 200 ppm. Follow manufacturer's instructions for proper dilution.
- **Iodine** An iodine solution containing no less than 12.5 ppm but no more than 25 ppm available iodine at a temperature not less than 45°C.

Preparing food products at home: What you need to know about food safety

The Alberta *Public Health Act* Food Regulation normally does not allow the sale of home prepared food to the public, with some exceptions. One exception is when vendors are allowed to sell their home prepared foods at a Farmers' Market. However, they must still follow safe food handling practices. The following section describes the risks associated with food preparation and the safe food handling practices that can reduce these risks.

What is a Foodborne Illness?

Foodborne illness, also known as food poisoning, can happen after eating food contaminated with harmful microbes or toxins. Less frequently, foodborne illness can happen after eating food that has been contaminated with a chemical. Some foods can contain natural toxins, or sometimes chemicals are accidentally added to food during production, harvesting, or storage.

Common symptoms of foodborne illness include:

- diarrhea
- vomiting
- nausea
- stomach cramps

Sometimes you may also have the following symptoms:

- fever
- malaise
- headache
- dizziness

A person who is suffering from a foodborne illness may have only one of these symptoms or may have a combination of the above symptoms. The symptoms may take just a few hours to develop or they may take several days to develop. The time it takes to make someone sick depends on the type of microbe or chemical the person ate, amongst other factors.

Microbes are tiny organisms that cannot be seen with the naked eye. They can only be seen with a proper microscope. Microbes are commonly found in human and animal feces. They are also found in our environment like dirt, water, dust, ice, air and moisture. Not all microbes are bad. Microbes can be useful in food processing, such as for making yoghurt, cheese, and fermented meats such as summer sausage. Although most bacteria are harmless and many are even beneficial, some are potentially dangerous and are responsible for serious symptoms, illness and even death. Harmful microbes are called **pathogens**. These pathogens are commonly found in human and animal feces, in the soil, in the digestive tract of humans and animals and on raw meat, poultry and fish.

There are many types of microbes that can cause foodborne illness. These are the main categories:

- **bacteria**
- **viruses**
- **yeasts and moulds**
- **parasites**

Since microbes are so small, they do not move around on their own. They depend on other ways to move around, such as hands and pieces of clothing, sneezes and coughs, mice, insects, and dust. Food and drink can easily become contaminated with microbes that are transferred from contaminated hands, objects or surfaces.

The nose and throat of healthy individuals may harbour *Staphylococcus*, which through sneezing, may contaminate otherwise uncontaminated or safe food. Food may also become contaminated via the **fecal-oral route**. Pathogens from the intestinal tract can be transferred to hands after using the toilet. In turn, the hands contaminate the food being prepared which is then ingested. For this reason, personal hygiene is very important when handling food. Thorough handwashing can remove most of the microbes that can be transferred from various parts of the body to the hands. In addition, foods should be kept covered to protect them from contamination by flies or other insects and animals.

At one time or another, many of us have had an experience of foodborne illness. Often people do not report foodborne illness because they just think they have a “24-hour stomach bug”. The symptoms of a foodborne illness may be mild and last only a few hours, but it can also be serious. It can last much longer and require medical treatment or hospitalization, and can even result in death.

The severity of the reaction often varies depending on the susceptibility of the individual and the microbe or toxin responsible for the illness.

Who is Most at Risk?

Some people are more vulnerable to foodborne illness than others. The following groups of people are considered to be high-risk:

- children
- the elderly
- people with compromised immune systems
- pregnant women

These groups of people are most at risk for picking up a foodborne illness and developing complications from the illness, resulting in long term health care problems or even death.

What Foods Are Most Associated with Foodborne Illness?

High-risk foods

“High-risk foods” are foods that allow harmful bacteria to grow rapidly when stored between 4°C and 60°C. Harmful bacteria grow slowly in refrigeration at 4°C or colder. Harmful bacteria stop growing at 60°C or hotter.

Food poisoning bacteria prefer to grow in meat, fish and poultry, as well as milk, cream and eggs.

The following is a list of common high-risk foods:

- Meat and meat products
- Milk and milk products
- Poultry and eggs
- Fish and shellfish
- Cooked vegetables and cereals



Low-risk foods

“Low-risk foods” are foods that may be safely stored at room temperature because they do not allow harmful bacteria to grow. Here are some examples of low-risk foods:

- Nuts and peanut butter
- Bread, crackers, cookies and cake
- Jams and jellies
- Dry cereals
- Raw fruit and vegetables
- Pickles, relishes, mustard and ketchup
- Most foods in unopened cans and flexible pouches
- Spices



Although low-risk foods do not allow harmful bacteria to grow, their shelf life is limited when stored at room temperature because they may support mould growth. Low-risk foods may also spread disease if handled with dirty hands.

How Can Foodborne Illness Be Prevented?

Most types of foodborne illness can easily be avoided if proper safe food handling practices are followed. Safe food handling practices include:

- practicing good personal hygiene, including thorough handwashing
- avoiding food preparation while you are ill
- preventing growth of bacteria with time and temperature control
- cooking foods to the proper temperature
- preventing cross contamination

Please carefully read the following section that describes these safe food handling practices.

Good Personal Hygiene

Think of your hands and fingernails as always dirty. Just because they look clean does not mean they are clean. If you do not wash your hands properly or keep your fingernails trimmed short, your hands can easily spread germs in food and cause foodborne illness. Always wash your hands at the handwashing sink using warm water and soap, and dry hands with disposable paper towels.

Wash Your Hands Properly

It takes at least 20 seconds to wash your hands properly.

- Wet hands with warm water.
- Add soap and lather well.
- Rub hands together.
- Use a nylon nail brush and scrub under the fingernails, between the fingers and backs of the hands.
- Rinse thoroughly using warm water.
- Use paper towel to turn off the taps.
- Dry hands with a paper towel or hot air dryer.



Wash Your Hands OFTEN

- Before preparing food
- After using the bathroom
- Before touching food that will not be cooked
- After touching raw meat, fish or poultry
- After covering your mouth when sneezing or coughing
- After smoking
- After using cleaning or toxic chemicals
- When your hands become soiled e.g. after handling dirty dishes or garbage

Gloves can also spread germs onto food so care must be taken when using gloves. Wash and dry hands before putting on the gloves and change the gloves between tasks. The use of gloves **does not** replace handwashing.

If You Are Sick, Do Not Work With Food

When people are ill with vomiting and diarrhea, they can shed millions of microbes. An ill food handler can easily pass these microbes on to food, equipment, dishes and utensils, co-workers or patrons. The fecal-oral route is a common way of transferring pathogens from one person to another. The fecal-oral route occurs when food handlers do not wash their hands properly after using the toilet. Microbes will remain on the fingertips so when food handlers prepare food, the food or utensils they touch can become contaminated with these same microbes. Customers who in turn eat this food or come in contact with contaminated utensils may become sick.

So it is important to remember the following:

- Do not work with food while you are ill with vomiting and/or diarrhea.
- Do not prepare food for others until at least 48 hours after symptoms of the illness stops.
- Do not work with food if you have yellowing of the skin or your urine is dark brown in colour as this may be an indication of jaundice.

- Do not work with food if you have an infected cut, boil or burn on your hand.
- Do not work with food if you have a fever and/or a sore throat.
- Do not work with food if you are sneezing, coughing or have a runny nose.

The person in charge of a Farmers' Market shall not allow a stallholder to handle food if they are aware that the stallholder is ill with vomiting and/or diarrhea. If you develop symptoms of foodborne illness, obtain medical advice from a physician before returning to work with food related duties.

A person must not work with food if prohibited from working by or under the Communicable Disease Regulation.

The Time and Temperature Rule

Most potentially harmful bacteria may not be dangerous when present in foods in very small numbers. They typically will not cause foodborne illness unless they are allowed to grow and multiply in the food. Because bacteria are living organisms, they need food and warmth in order to grow to numbers that can cause illness. Foods, which are moist and rich in protein, provide good conditions for bacterial growth. Meats, poultry, eggs, milk and other dairy products, foods with sauces and gravies, and cream-filled pies and cakes are excellent breeding grounds for bacteria. Under ideal temperatures, they can **double** their number every **20 minutes**. At this rate one bacterium can multiply to more than **two million in seven hours**.

The temperature range **between 4°C and 60°C** is known as the "**temperature danger zone**". Between these temperatures bacteria can multiply rapidly in food. Below 4°C (normal refrigeration temperature), bacterial growth is slowed down. However, the bacteria are not killed and can begin to grow and multiply again when the food is within the temperature danger zone. "Hot holding" temperatures above 60°C also prevent bacterial growth and toxin formation. Bacteria are usually killed by hot temperatures and prevented from multiplying by cold temperatures. To ensure

bacteria are killed, **foods that are cooked or reheated should reach a minimum temperature of 74°C.**

It is very important to keep the time during which food is exposed to the “temperature danger zone” to a minimum. Food which has been kept at temperatures between 4°C and 60°C for more than two hours can potentially cause foodborne illness and should be discarded. For this reason, cold foods should always be kept cold below 4°C and hot foods should always be kept hot above 60°C.

Never keep “high-risk foods” in the temperature danger zone for more than 2 hours.

Time and temperature control is vital in the prevention of foodborne illness. Remember these rules when handling or preparing food:

Preparation

- Never mix old food with new batches of food.
- Use leftover foods within two to three days.
- Cook or serve foods immediately after preparation
- Prepare food as close to service times as possible in order to avoid holding foods at room temperature for long periods of time, or chill rapidly to below 4°C until ready to use.

Hot and Cold Holding

- Avoid foodborne illness from high-risk foods by keeping **hot foods hot** (above 60°C) and **cold foods cold** (below 4°C). This keeps food out of the **danger zone** where bacteria and other microbes can grow rapidly.
- Ensure proper temperatures are maintained even when foods are being transported from one location to another.
- Use chilled ingredients to keep the temperature of foods cold during preparation.

Reheating

- Reheat foods to a minimum internal temperature of **74°C** to ensure bacteria are killed. Reheat only as much food as needed and discard any unused portion of the reheated food. **Foods should not be reheated more than once.**

Cooling

- Rapid cooling reduces the amount of time that high-risk food is held in the danger zone. This reduces the risk of bacterial growth.
- Cool hot foods quickly by dividing it into smaller portions, and store them in the refrigerator using shallow metal containers.
- Ice baths can also be used for rapid cooling. Place the pot of hot food in an ice water bath and stir food frequently. Use a thermometer to check the internal temperature of the food as it cools.
- For large pieces of meat such as a roast or a turkey, break it apart in sections or de-bone and then refrigerate for rapid cooling.

Freezing

- Ensure frozen foods remain frozen while in storage, on display or in transit. Freezing food does not kill bacteria; it only stops their growth. Once the food begins to thaw, bacterial growth will continue.

Thawing

- Thaw or defrost meat and poultry in the refrigerator, under cold running water, or in the microwave oven.
- However, if using a microwave oven to thaw food, cook immediately after defrosting.
- Refrigerate foods after thawing under cold running water if the food is not going to be used immediately.

Cooking

- Cook poultry and ground meats well. Use a meat thermometer to ensure that meat and poultry have been thoroughly cooked before being served. Always check the temperature in the thickest part of the food. Cook the following foods to these internal temperatures:
 - Whole Poultry 85°C
 - Poultry pieces 74°C
 - Stuffing 74°C
 - Beef 74°C
 - Pork 71°C
 - Ground Meat 71°C
 - Fish 65°C
- Cook eggs thoroughly. Avoid recipes that call for raw eggs. Use pasteurized eggs instead.

Prevent Cross Contamination

Harmful bacteria can be transferred from raw foods (particularly raw meats and poultry) to cooked and ready-to-eat foods, by hands, utensils, containers and work surfaces in the kitchen. This transfer of bacteria is known as **cross contamination**. Proper food handling practices are important in the prevention of cross contamination. Well scrubbed hands will help prevent the spread of bacteria to food. Making sure kitchen utensils, containers and work surfaces are thoroughly cleaned and sanitized, especially those that have been in contact with raw meat and poultry will also help stop cross contamination. Sometimes obvious sources of cross contamination are overlooked: for example, when a can opener is not wiped clean between uses or when meat cooked on the barbecue is placed on the same platter or container used for the raw meat.

To prevent cross contamination, observe the following precautions:

- Keep hands, utensils and work area clean.
- Before handling food, **wash hands** thoroughly using soap and hot water.
- Thoroughly wash and **sanitize** all surfaces such as knives, cutting boards, countertops and sinks that have been in contact with raw meats, fish and poultry. Wash with hot, soapy water. Sanitize using a dilute solution of household bleach ($\frac{1}{2}$ ounce or 1 tablespoon of bleach per gallon of water) or other approved sanitizer. Sanitizing will kill food poisoning bacteria remaining on the surface.
- Use a designated cutting board for raw meats and poultry and another **separate** cutting board for cooked or ready-to-eat foods.
- Store raw meats on a **lower** shelf in the refrigerator below ready-to-eat foods.
- Always use a clean utensil when tasting food. Do not double dip.

Safe Dishwashing Methods

- Utensils and surfaces that come in contact with food must be maintained in a sanitary condition and washed and sanitized to remove contamination.
- When washing dishes by hand (manual dishwashing), follow the three-step dishwashing method:
 1. **Wash** dishes in **warm soapy water**. Change wash water frequently.
 2. **Rinse** dishes with **clean warm water**. Change rinse water frequently.
 3. **Sanitize**, either by immersing dishes in hot water (77°C) for two minutes, or in an approved chemical sanitizer at a temperature of at least 45°C for two minutes. An approved sanitizer is 100 ppm chlorine, 200 ppm quaternary ammonium compound, or 12.5 to 25 ppm iodine.
- Test papers should be used when using any chemical sanitizer to check for the proper chemical concentrations mentioned above.
- Dishes should be left to air dry on a drain board made of non-corroding and non-absorbent material after washing. Do not towel dry dishes as this may transfer bacteria onto the clean dishware.
- Always examine the dishware for cleanliness and damage. Re-wash any unclean dishware, and throw out any damaged dishware.

Unsafe food does not always have an altered appearance, odour, or taste. So, if you ever doubt the safety of the food you have prepared, do not use it; **someone's health may be at risk.**

When in Doubt Throw it Out

The information in this home study course was collected from Alberta Health Services Environmental Public Health, Alberta Agriculture and Rural Development, the Alberta Farmers' Market Association and the Canadian Food Inspection Agency. The following websites can provide valuable resources for Farmers' Market organizers and market vendors.

Alberta Health Services Environmental Public Health www.ephs.ca

Alberta Agriculture and Rural Development www.agric.gov.ab.ca

Alberta Farmers' Market Association www.albertamarkets.com

Canadian Food Inspection Agency www.inspection.gc.ca



For more information, please contact your nearest Environmental Public Health office.

Edmonton Main Office	(780) 735-1800	Grande Prairie Main Office	(780) 513-7517
Calgary Main Office	(403) 943-2295	Red Deer Main Office	(403) 356-6366
Lethbridge Main Office	(403) 388-6689	www.albertahealthservices.ca/eph.asp	

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Appendix A - Farmers' Market Manager's Checklist - Daily

Market Manager's Name: _____ **Date:** _____

Items to be checked	Y	N	If no, corrective action
Is the market manager on site while the market is in operation? If not, has the market manager appointed someone else to conduct the inspection of the market?			
Are the vendors stalls maintained in a clean and sanitary condition?			
Are the vendors' tables in good repair and easily cleanable?			
Are potentially hazardous foods being held below 4°C? If ice packs are used, are they successfully keeping potentially hazardous foods below 4°C?			
Are whole shell poultry eggs stored below 7°C?			
Does each vendor have an accurate thermometer to monitor potentially hazardous food temperatures?			
Has each vendor been informed of the locations of the two-compartment clean-up sinks and hand sinks?			
Are all foods on display protected from customer handling and contamination (this includes foods used for sampling)?			
Is all food packaging being used made of food grade material, clean, and not previously used?			
Are all home canned products, being offered for sale at the farmers' market, only jams, jellies, and pickles? For the vendors selling canned foods, are they only using new approved canning lids?			
Is all meat being offered for sale at the Farmers' Market identified, and confirmed as being government inspected meat?			
Are all milk products being offered for sale at the Farmer's Market, identified and confirmed as being produced in a facility licensed or permitted by CFIA, Alberta Agriculture, or Alberta Health Services?			
Is an ingredient list and producer contact information available for all food products being offered for sale?			
Are all potentially hazardous foods being offered for sale identified with a date of preparation?			
Is each vendor offering food samples and/or open food equipped with handwashing supplies?			
Are leftover potentially hazardous food samples being discarded after one hour, if they are not held below 4°C or above 60°C?			

Appendix B - Farmers' Market Vendors' Food Safety Checklist

Vendor's Name: _____ Date: _____

Items to be checked	Y	N	If no, corrective action
Have you read the Farmers' Market Guidelines provided by Alberta Health Services?			
Is your market stall clean and sanitary?			
Is your table smooth, easily cleanable and in good repair?			
Do you have handwashing supplies available at your stall?			
Did you wash your hands thoroughly before handling any food?			
Do you have a sanitizer solution (e.g. bleach) for cleaning your table and equipment?			
Do you have test strips to ensure the concentration of your sanitizer solution is adequate?			
Do you store your cleaning supplies separate from your food?			
If you sell potentially hazardous food, is it stored below 4°C?			
Do you have an accurate thermometer to monitor cold holding temperatures?			
Is your equipment clean and in good repair?			
Do you properly clean and sanitize equipment before and after its use?			
Is all your food packaged in clean food grade material?			
Are you wearing clean apparel, with your hair restrained?			
Is your food on display protected from customer and environmental contamination?			
Do you have an ingredient list for each of your food products?			
Do you have contact information (producer's name and contact number) to supply with the purchase of each food product?			
Are all potentially hazardous foods being offered for sale identified with a date of preparation?			
Are leftover potentially hazardous food samples discarded after one hour, if they are not held below 4°C or above 60°C?			

Log sheet for recording temperatures and sanitizer solution concentration

	Morning	Afternoon
Cold Food Temperatures (°C)		
Hot Food Temperatures (°C)		
Sanitizer Concentration (ppm)		

Appendix C - Farmers' Market Guidelines for Canning Lids and Jars

Two-Piece Caps

Two-piece caps consist of a lid and a metal screw band. They are made specifically for use with modern day home canning jars and are most commonly used.

The underside edge of the lid has a rubber like sealed cap that softens when it is heated. This lid adheres to a clean jar and rim and creates a vacuum seal after the heat-processing period. Lids are not reusable.

The screw band holds the lid in place during the processing period and secures it in place when storing an opened jar in the refrigerator.

Screw bands may be used as long as there are no signs of corrosion or rust and they are not out of round or dented.

Home Canning Jars

To ensure safe home canning today, use only jars approved for home canning and made from tempered glass. Tempering is a treatment process for glass that allows the jars to withstand the high heat.

Use jars and two-piece caps made for home canning. Discard any jars that are cracked or nicked.

Never use sealing lids a second time. Always use new lids. The sealant on the underside of the lid is good for only one processing.



Preparing Your Jars, Lids, and Screw Bands

1. Inspect your jars, lids, and screw bands for any defects.

Jars: Check the jar edges for any nicks, chips or cracks in the glass, discarding any jars with these defects. Ensure no stains or food residue.

Screw Bands: You may use these if they are not warped, corroded, or rusted. Discard defective bands or “out of round (bent or not completely round)”.

Lids: All lids must be new. Lids are not reusable. Check the sealant on the underside of each lid for evenness.

2. Wash the jars, lids, and screw bands in hot, soapy water.
3. Rinse all the washed items, removing all soapy residue.
4. Place the metal disc part of the lids in boiling water for five minutes immediately before using. This sanitizes the lids and softens the sealing compound so an airtight seal is formed. Remove the metal disc from the boiling water and center it on the jar rim. Apply the screw band just until it is fingertip tight.

When cooling, the air will contract and the lid “snaps” down creating an airtight vacuum seal. If the lid is too tight, air cannot escape from the jar, possibly resulting in a failed seal, which could cause food spoilage.

N.B. It is important to follow the directions for use on lids and jars provided by the manufacturer. Each brand of lid may be treated differently. Never reuse lids from commercially canned foods for home canning.

For further information on canning, lids and jars please contact the following:

www.homecanning.com www.FCS.uga.edu/extension/food

Farmers' Market Home Study Course

Instructions for completing the exam

Although there is no time limit, you should try and complete this exam within four weeks after receiving it. The exam has a total of 25 multiple-choice questions. For the correct response, choose the **most correct answer** based on the information from each section. To choose your answer, check the box with the corresponding letter on the answer sheet provided.

Complete the personal information sheet. Please print clearly. We would also appreciate it if you would complete the evaluation form. When you are finished, return the answer sheet, the personal information sheet and the evaluation form, and mail it to:

Alberta Health Services
Environmental Public Health
HSBC Building
Suite 700, 10055 - 106 Street
Edmonton, AB T5J 2Y2
Attention: Health Educators

OR

Alberta Health Services
Environmental Public Health
10101 Southport Road SW
Calgary, AB T2W 3N2
Attention: Health Educators

Red Deer and regions south of Red Deer please send the exam package to Calgary.
Regions north of Red Deer please send the exam package to Edmonton.

Upon successful completion of the exam, you will be awarded a **Farmers' Market Home Study Course Certificate**, which is valid for three years. The passing mark is 80%.

Farmers' Market Home Study Course

Personal Information Sheet

PLEASE PRINT CLEARLY

Name: _____

Address: _____

_____ Postal Code _____

Phone (home): _____ (business): _____

E-mail Address: _____

Farmers' Market where you participate: _____

Date course was completed: _____

FOR OFFICE USE ONLY

Date received: _____ Date Exam/Certificate returned: _____

Exam marked by: _____ Pass * Fail Score _____

Educator's Comments: _____

* If you receive a score of less than 80% on the multiple-choice exam, you will not receive a certificate. Please contact our office at 780-735-1800 or 403-943-2295 for more information.

Farmers' Market Home Study Course

Answer Sheet (Please check the correct answer)

Name: _____

- | | | | | | | | | | |
|-----|----------------------------|----------------------------|----------------------------|----------------------------|-----|----------------------------|----------------------------|----------------------------|----------------------------|
| 1. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 14. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 2. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 15. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 3. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 16. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 4. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 17. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 5. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 18. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 6. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 19. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 7. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 20. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 8. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 21. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 9. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 22. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 10. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 23. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 11. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 24. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 12. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | 25. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d |
| 13. | <input type="checkbox"/> a | <input type="checkbox"/> b | <input type="checkbox"/> c | <input type="checkbox"/> d | | | | | |

Farmer's Market Home Study Course Evaluation

Please mark the rating that best expresses your opinion of this course.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I learned how to handle food safely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will be able to put into practice the information I learned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The manual was easy to read and understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The daily checklists provided at the end of the manual are useful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will look at the websites that were provided in the manual.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The exam questions were easy to read and understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you rate the course overall?

Excellent	Good	Average	Poor	Very Poor
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How can we improve this course?

Is there more specific information you would like to see included in this course?

Any other comments or suggestions?

Farmers' Market Home Study Course Multiple-Choice Exam

Instructions:

1. Read through the home study course.
2. For each multiple-choice question, choose the correct answer and circle the letter on the answer sheet.
3. Choose the most correct answer based on the information you've just read. Remember that there is only one correct answer for each question.

1. High-risk foods must be stored, displayed and transported at a temperature of:
 - a. 4°C or colder or 60°C or hotter
 - b. 20°C or colder
 - c. between 4°C and 60°C
 - d. 7°C
2. A stallholder who sells frozen food:
 - a. must have a permit
 - b. does not require a food label
 - c. must ensure the frozen food remains frozen
 - d. must offer samples to the public
3. Who is responsible for ensuring the Farmers' Market is supplied with potable water?
 - a. The local health inspector
 - b. The stallholders
 - c. The food handlers
 - d. The permit holder
4. A stallholder may not offer for sale :
 - a. unpasteurized milk
 - b. whole raw shell eggs stored at a temperature of 7°C or colder
 - c. home canned jams, jellies or pickles
 - d. inspected raw meat
5. All home prepared food sold at a Farmers' Market:
 - a. must be frozen during transport
 - b. must come from an approved source
 - c. must be tested before being sold
 - d. must be protected from contamination

6. Which of the following meets the handwashing requirement for stallholders providing pre-portioned low risk food samples to the public?
 - a. Wash hands with soap and water, and dry with a reusable cloth towel
 - b. Use reusable gloves
 - c. Sanitize hands using a hand gel
 - d. Handwashing is not required
7. Food samples that have been on display must be replaced:
 - a. after one hour
 - b. after thirty minutes
 - c. only after four hours
 - d. only if the sample becomes contaminated
8. Which is considered an approved sanitizer?
 - a. Bleach
 - b. Quats
 - c. Iodine
 - d. All of the above
9. What is the greatest risk associated with improperly prepared home-canned food?
 - a. Moulds
 - b. Botulism
 - c. *Salmonella*
 - d. Spoilage
10. Food handlers must:
 - a. refrain from smoking in a food area
 - b. practice good personal hygiene
 - c. not work with food while ill
 - d. all of the above
11. Who requires a Farmers' Market Permit according to the Food Regulation?
 - a. Each individual stallholder
 - b. The organization operating the Farmers' Market
 - c. Only the stallholders selling food
 - d. A permit is not required for a Farmers' Market
12. Foodborne illness can occur:
 - a. when one consumes food contaminated with harmful microbes
 - b. when one consumes food contaminated with toxins produced by harmful microbes
 - c. when one consumes food accidentally contaminated with a chemical
 - d. all of the above
13. If the conditions are right, such as warm temperatures, bacteria can grow and double their numbers every:
 - a. 20 seconds
 - b. 20 minutes
 - c. hour
 - d. 2 hours

14. Common symptoms of foodborne illness include:
 - a. muscle aches and pains
 - b. vomiting and diarrhea
 - c. itchy skin
 - d. seizures

15. The temperature danger zone:
 - a. is the temperature range between 4°C and 60°C
 - b. is the range in which bacteria can easily survive and multiply in foods
 - c. is the temperature to avoid when handling high-risk food
 - d. all of the above

16. Which group of people is considered more vulnerable to foodborne illness?
 - a. teenagers
 - b. athletes
 - c. children and the elderly
 - d. health care workers

17. All high-risk foods should be reheated to a minimum internal temperature of:
 - a. 85°C
 - b. 74°C
 - c. 60°C
 - d. 37°C

18. The transfer of bacteria from raw food to cooked food is called:
 - a. danger zone
 - b. pathogen
 - c. food poisoning
 - d. cross contamination

19. Pathogens are transferred by the fecal-oral route occurs when:
 - a. a food handler does not wash their hands after using the toilet
 - b. a food handler does not wash their hands after handling raw meat
 - c. a food handler uses the same cutting board to prepare raw meat and cooked meat
 - d. high-risk food is stored in the temperature danger zone

20. Food which may cause illness:
 - a. does not always change in taste or appearance
 - b. changes in taste
 - c. smells rancid
 - d. changes colour

21. Which home canned products are allowed at a Farmers' Market?
 - a. Home canned foods are not allowed at the Farmers' Market
 - b. Only jams, jellies, and pickles
 - c. Only foods with a low acid content
 - d. Canned juices, like carrot and apple juice.

22. Which is an example of low-risk food?
- Raw fruit and vegetables
 - Raw meat
 - Pasteurized milk
 - Whole raw shell eggs
23. Good personal hygiene means:
- washing your hands often
 - keeping your fingernails short and clean
 - wearing clean clothing and footwear
 - all of the above
24. Washing your hands should take at least:
- 5 seconds
 - 1 minute
 - 20 seconds
 - 2 minutes
25. Labelling of food products is regulated by:
- the Alberta Farmers' Market Association
 - Alberta Agriculture and Rural Development
 - the Canadian Food Inspection Agency
 - Alberta Health Services