

Marketing Food Safely

Farm Direct Advantage



Marketing Food Safely: Farm Direct Advantage

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Food Safety Division
6909 116 Street
Edmonton, Alberta
Canada T6H 4P2
Telephone: (780) 427-4054

Copies of *Marketing Food Safely: Farm Direct Advantage* may be purchased from:

Alberta Farmers' Market Association (AFMA)
Room 106, 7000 113 Street
Edmonton, AB T6H 5T6
Telephone: (780) 644-5377
Email: director@albertamarkets.com

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Acknowledgements

Technical Writers:

Karen Goad, Farm Direct Marketing, Alberta Agriculture, Food and Rural Development

Betty Vladicka, Food Safety Systems Specialist, Alberta Agriculture, Food and Rural Development

Kevin Fahner, Agri-Food Systems Branch, Alberta Agriculture, Food and Rural Development

Educational Design:

Lois Hameister, Ag Education & Training Branch, Alberta Agriculture, Food and Rural Development

Desktop Publishing and Design:

Eugene Balogh, Ag Education & Training Branch, Alberta Agriculture, Food and Rural Development

Project Management:

Lori McRae, Home Study & Ag Awareness Coordinator,
Alberta Agriculture, Food and Rural Development

Eileen Kotowich, Alberta Farmers' Market Program, Alberta Agriculture, Food and Rural
Development

Graphic Design:

Perpetual Notion, Edmonton

Technical Reviewers of the Marketing Food Safety Manual:

Alberta Agriculture, Food and Rural Development:

Daryl Loback, Kevin Webster, Dan Morris, Floyd Mullaney, Keith McAllister, Karl Vidal,
Vaughan Christensen

Alberta Health and Wellness:

Marie Beliveau

Canadian Food Inspection Agency:

Bill Zurawell, Diane Brochu

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How To Use This Manual

Who Should Use This Resource

All farm direct operators, including Alberta Approved Farmers' Markets managers and vendors, need a solid understanding of food safety principles and practices. *Marketing Food Safely: Farm Direct Advantage* is a comprehensive resource to help you market your food safely. It is intended for use by all farm direct marketers including market gardeners, producers, small processors and Alberta Approved Farmers' Market managers and vendors.

The Manual

Effective food safety plans are built on a solid foundation of prerequisite programs. Prerequisite programs are defined as universal steps or procedures that control the operational conditions within a food establishment allowing for environmental conditions that are favorable to the production of safe food.

The elements of prerequisite programs include:

- Premises
- Sanitation
- Storage
- Transportation
- Equipment
- Personal hygiene
- Pest control
- Recall

A quick look at the table of contents shows that these are some of the chapter titles. In addition there is information on causes of foodborne illness, general food handling requirements and federal and provincial legislation.

A comprehensive appendix provides additional information. It includes such things as record templates, websites, list of contacts and publications and food safety tips. There is a glossary of definitions for the terms used throughout the manual.

To help you understand some of the food safety concerns, there are three fictional farm direct businesses. These case examples used throughout the manual illustrate certain concepts and potential issues.

As a direct marketer, you will likely face some of the same food safety issues that the fictional marketers face. Although your products or markets may be different, the food safety requirements are the same.

Chapter Layout

Most of the chapters have some common sections. They help you link the material in each chapter and create your own food safety plan. The chapters discussing prerequisite programs explain some of the hazards inherent to those aspects of your operation. They address the practices that should be included in your food safety plan along with the records and staff training required. There is also a section for farmers' market managers to help you identify your roles in each of these areas.

Exercises within each chapter help you review the material and focus on some of the activities you need to undertake to produce your food safely.

Four icons are used to draw your attention to specific sections within each chapter.



This icon introduces the case examples. Each chapter provides you with more information about the fictional marketers.



This icon refers you to other sections of the manual or websites that will provide you with more information about the subject.



This icon is used when there is an exercise or review.



This icon identifies the food safety plan, one of the most important sections of this manual. This section helps you build a food safety plan geared for your operation.

Food Safety Plan

A food safety plan consists of the practices and procedures you undertake to protect food products from becoming contaminated and control microbial growth. These practices and procedures should be explained in a written document and are referred to as standard operating procedures (SOPs). They are specific to your operation. SOPs need to be readable and to the point so that staff can understand and easily implement them.

Food Safety Plan → Written SOPs → Implementation → Records

The objective of any food safety program is to reduce the risks created by all potential hazards. Each of the prerequisite chapters describes the process to follow as you develop the written document outlining your standard operating procedures that keep your food products safe.

An effective food safety plan gives you the ‘how to’ to reduce food safety risks in your operation.

Your Food Safety Plan

You’ll reap the most benefit if you work through each chapter in sequence. Follow the process outlined in the Food Safety Plan section of each chapter to build a food safety plan for the marketing activities of your farmers’ market or farm direct venture.

If you produce or process the food products you sell, you will need additional food safety plans for the production and processing components of your business. They are not addressed in this resource.

Implementing Food Safety Strategies

Once you have written your food safety plan, you need to prioritize your actions to implement food safety strategies in your operation. Break your actions into simple steps and start small; for example, use thermometers in refrigerated storage and during transport to monitor product temperatures.

Don’t forget to include record keeping and staff training in your plan. If necessary, get assistance to implement the changes you have planned. Make sure you know who to contact to ask questions regarding food safety.

The *Marketing Food Safely* chapters are arranged in logical order. Use their order as a guide to plan your food safety implementation strategies.

Step 1 Know why food safety is important to your business or farmers' market.

Step 2 Understand the three categories of food hazards.

Step 3 Determine if your food product is potentially hazardous and understand the implications.

Step 4 Ensure that you are complying with all legislation that pertains to your operation.

Step 5 Determine if your establishment is an appropriate place to sell safe food. Identify the improvements required.

Step 6 Begin implementing your plan.

Step 7 Continuously improve.

A Food Safety Committee Success Story

The Old Strathcona Farmers' Market in Edmonton originally started a food safety committee to help the market develop a rapport with the regional health authority and other market committees. Today the committee sets food safety policy for the market, advises vendors on proper procedures for sampling, producing and marketing products safely and works with the committee that approves new vendor applications.

When vendors have issues requiring additional food safety expertise, committee members refer them to other resources such as Alberta Agriculture, Food and Rural Development, private food labs, etc. The food safety committee routinely checks food handling procedures at the market.

The original membership was made up of the market manager, several vendors and one board member. Today it is a group of vendors that works closely with the regional health authority on safe food handling procedures and practices for the market. The committee evaluates a prospective vendor's food safety knowledge and experience. They assess food handling, sampling and production procedures and product shelf life. If the prospective vendor lacks required knowledge, the prospect is directed to other organizations to find out the information and asked to reapply.

The committee takes a proactive approach to food safety. Members conduct surprise inspections of vendor farms and businesses to assess their operations and production processes.

In conjunction with the regional health authority, the committee sponsors a compulsory food safety seminar for food vendors. They provide food safety information to vendors throughout the year in newsletters, workshops and individual consultations. The committee does everything it can to ensure that their market is doing things safely.

“We’ve made lots of changes at the market. We established a food safety committee that works closely with other market committees to achieve a common goal of food safety. We’ve added better sinks, encouraged our vendors to use commercial refrigeration units, purchased food safety testing equipment and developed an emergency safety protocol. Having a food safety focus at the market is simply the right thing to do.” Jim O’Neill, Old Strathcona Farmers’ Market

What’s Next?

What advantage does an Alberta Approved Farmers’ Market provide over all other public markets? What assurances do food safety systems offer consumers? Do farm direct marketers benefit by minimizing food safety risks? Chapter 1: Securing Your Future answers these questions and describes how addressing food safety issues ensures the sustainability of your business.

Chapter 1:

Securing Your Future

Learning Objectives

After completing this chapter, you will be able to:

- Differentiate between an Alberta Approved Farmers' Market and all other public market venues
- Explain why food safety is important to farm direct marketing

Chapter 1: Securing Your Future

Why Marketing Food Safely: Farm Direct Advantage?

Farm direct marketing channels, including farmers' markets, are a valuable marketing option for producers and processors involved in Alberta's value added agriculture industry. Consumers are confident that the food products they're buying direct from the producer at farmers' markets or farm gates are safe for their family to eat and enjoy. It's important that this confidence is maintained as the Alberta farm direct industry continues to grow. One negative foodborne illness incident could damage and possibly destroy the industry's good reputation.

An increasing number of farm direct marketers are producing more foods deemed potentially hazardous by Alberta Health and Wellness, increasing the potential for food safety incidents. This resource responds to the need to address public health concerns regarding the potential for foodborne illness associated with potentially hazardous foods sold through Alberta farmers' markets and other farm direct marketing channels. *Marketing Food Safely* is intended to ensure all farm direct marketing channels, including Alberta farmers' markets, remain safe, viable and profitable marketing options for marketers and consumers alike.

“It's important to address food safety because of the health concerns surrounding food issues. People want to know that they are eating foods that have been prepared in a safe manner, stored safely and presented in a safe situation at the market as well.” Crystal Loewen, Sylvan Lake Farmers' Market

Marketing Food Safely addresses food safety issues related to marketing, not production, activities in the farm direct industry.

Farm direct marketing is a marketing method whereby producers sell their products and services directly to consumers. Farmers' markets, farm gate sales, farm stands, farm stores, direct to restaurants, U-pick, and community-shared agriculture are examples of farm direct marketing.

Alberta farm direct marketers are not alone in seeking information on best practices that reduce food safety risks. In a recent Michigan State University study, producers and processors identified assistance to produce safe food products as one of their top five needs.

Marketing Food Safely is one tool farm direct marketers can use to ensure their marketing practices reduce food safety risks. This resource addresses *food safety issues as they relate to marketing activities* in the farm direct industry. It is anticipated a future volume will focus on food safety issues impacting very small scale food processing operations.

Marketing Food Safely is for farmers' market managers and those who sell an agricultural food product in Alberta direct to the final consumer. It is intended to increase the understanding and application of safe food handling practices by Alberta farmers' market managers, vendors and other farm direct marketers when marketing their products.

What is Farm Direct Marketing?

Farm direct marketing is the sale of agri-food products directly to the consumer. It is market focused relationship marketing. Producers know their target market and sell products that meet the specific needs of their consumers. A fundamental component of farm direct marketing is the trust relationship that develops between producers/processors and consumers. Successful farm direct marketers assume the accountability and rewards of consistently supplying quality agri-food products directly to the consumer through a variety of marketing channels. Some of these include farmers' markets, farm gate sales, roadside stands, farm stores, U-pick, community-shared agriculture and entertainment agriculture or ag-tourism ventures.

Ag-tourism – act of visiting a working farm or any agricultural, horticultural or agribusiness operation for the purpose of enjoyment, education or active involvement in the activities of the farm or operation.

Community-shared agriculture – a partnership between consumers and producers in which consumers pay for farm products in advance and farmers commit to supplying sufficient quantity, quality and variety of products. Often consumers have the option to participate in the production of the farm products.

Farm direct marketer – person who grows/processors an agricultural product or develops a service and sells it directly to the end user.

Farm direct marketing – a marketing method whereby producers sell their products and services directly to the consumer. Farm direct marketing is relationship marketing between producer/processor and consumer that consistently offers a quality agri-food product through a variety of marketing channels. Farm direct marketing allows the producer to assume the accountability and rewards of delivering a product directly to the consumer.

In this resource, the term farm direct marketer describes agricultural producers who grow/process and sell their product directly to the end consumer regardless of the market channel. It includes all direct market operators from farmers' market vendors to market managers and U-pick to farm store owners. Farmers' market managers are included in this definition because they are more than business managers; they have a critical role in reducing food safety risks at the market.



For more information on farm direct marketing, contact any of the Alberta Agriculture Food and Rural Development farm direct specialists listed in Appendix K: Contacts or visit the website of AAFRD at www.agric.gov.ab.ca/diversify

Marketing channel – a system of individuals and businesses involved in the process of making a product available for use or consumption.

Farmers' market manager – person designated by the market or sponsoring body to oversee Alberta Approved Farmers' Market policies, operations, programs and legislative requirements and enforce the approved market guidelines.

Farmers' market vendor – person or business that sells product through an Alberta Approved Farmers' Market.

Farm stand – a temporary structure used for the sale and display of agricultural products; usually operated on a seasonal basis on or near the farm or along a road near the farm.

Farm store – a permanent structure that sells and displays a variety of agricultural and agriculturally themed products directly to consumers; may be operated on a year-round or seasonal basis; a retail outlet on the farm.

U-pick – operations where the customer comes to the farm to buy fruits, vegetables or flowers that they have harvested for themselves.

Value added – adding additional value to agri-food products or services by further developing or processing a primary product; any activity or process that alters the original agricultural product or commodity for the purpose of gaining a marketing advantage. Value added may include bagging, packaging, pre-cutting, processing, etc.

The term “farmers market” only refers to those markets operating under the Approved Farmers’ Market Guidelines and recognized as an Alberta Approved Farmers’ Market.

Farmers’ Market or Public Market?

Farmers’ markets are probably the oldest and most common form of marketing direct to the consumer. The difference between a public market and an Alberta Approved Farmers’ Market lies in the ownership/management of the market and the privileges accorded to each type of market.

Throughout this resource the term farmers’ markets always refers to Alberta Approved Farmers’ Markets. The term is not used to describe public, flea, craft or any other type of market.

A public market is generally one that is privately owned and includes all types of operations including flea markets. As a public market, each food vendor must have an individual food establishment permit and be operating in a facility approved by the regional health authority. Some municipalities have bylaws that are applied to public markets and include public markets in the same classification as pawn shops. Most municipalities require each vendor at a public market to have a business or peddler’s license, whereas only a single license is required for the farmers’ market. A public market does not receive any of the benefits enjoyed by an approved farmers’ market.

Alberta Approved Farmers’ Markets

The Alberta Approved Farmers’ Market Program creates an operational framework that facilitates direct market access for community-based entrepreneurs who make, bake or grow the product they sell. Basic operating guidelines, provincial program-awareness initiatives, and the education of vendors, managers and consumers are the key components of the program.

Alberta Approved Farmers’ Markets operate under the *Approved Farmers’ Market Guidelines* developed and enforced by Alberta Agriculture, Food and Rural Development (AAFRD). Approved farmers’ markets meet the requirements of the program guidelines and receive their status from the Minister of Agriculture, Food and Rural Development. They are monitored annually to ensure continued compliance with the guidelines. Privately owned markets are not eligible to operate under the banner of an approved farmers’ market.



For more information on the Approved Farmers' Market Guidelines see Appendix N.

The most significant benefit of Alberta Approved Farmers' Market status is the one permitted under the *Public Health Act*. Alberta Approved Farmers' Markets often serve as business incubators or test markets for start-up processors. Food vendors selling at Alberta Approved Farmers' Markets have unique status under the *Public Health Act* and Food and Food Establishments Regulation. The Act states that "a local board may issue a food establishment permit only to a person or group of persons who have been approved by the Minister of Agriculture to operate a farmers' market." The entire market is allowed to operate under a single food establishment permit and individual vendors may operate out of home kitchens. Food products sold at all other venues such as public markets, flea markets and farm stores do not qualify for the same exemptions.

Alberta Approved Farmers' Market vendors usually share market insurance, advertising and other marketing costs. However, product liability insurance is still required. The Alberta Farmers' Market Association offers a group policy that meets the basic needs of each member market and vendor.

Alberta Approved Farmers' Markets' unique status under the Public Health Act is subject to frequent review. Minimizing food safety risks at farmers' markets helps maintain the current status.

Alberta Farmers' Market Association (AFMA) – provincial organization providing leadership and support to AAFRD approved member markets, farmers' market managers and vendors through education and promotion.

It's important that food sold at Alberta Approved Farmers' Markets doesn't pose a food safety risk. The unique status of farmers' markets is examined with each review of the *Public Health Act*.

“Food safety is important to us for two reasons. We have a genuine concern for our customers' well being and liability implications are a big issue in our business.” Helen Doef, Doef's Greenhouses Ltd.

Foodborne Illnesses

Food safety is a top-of-mind issue for today's savvy food consumers. Consumers expect all food they purchase to be 100 percent safe. They understand the food handling practices that can lead to foodborne illness and are demanding that suppliers follow recommended procedures to keep their food safe.

Consuming unsafe or contaminated foods or beverages causes foodborne illnesses. Foodborne illnesses frequently result in temporary disorders such as nausea, diarrhea and flu-like symptoms but can lead to serious long-term health consequences and even death. Food that looks, smells and tastes good can still cause serious foodborne illness.

Foodborne illness is preventable. Make sure you're doing your part in reducing food safety risks.

Food Safety Systems

Consumers are looking for assurance that their food is being produced in a safe manner. Together industry and governments are developing food safety process control systems that focus on preventing hazards rather than detecting problems during inspection of the end products. These systems are based on the principles of Hazard Analysis Critical Control Point (HACCP) and support Alberta's gate to plate approach to food safety.

Implementing these systems shows due diligence in production and product manufacturing, meets consumer demands and may facilitate market access. There are different food safety programs that can help you provide consumers the assurance they are seeking.

Prerequisite Programs

Effective food safety systems are built on a solid foundation of prerequisite programs. These programs provide the basic environment and operating conditions that are necessary for the production of safe, wholesome food. They include protocols for premises, storage and transportation, equipment, sanitation, food handling, personnel, product recall and traceability. Provincial prerequisite program guidelines are described in the document Meat Facility Standards while federal prerequisites are outlined in the Food Safety Enhancement Program (FSEP). Like the food safety system itself, all prerequisite programs should be documented and regularly audited. This resource focuses on the prerequisite programs.

On-Farm Food Safety (OFFS) Programs

OFFS programs help create a proper operational environment for food safety through the implementation of Good Production Practices (GPPs) on the farm. These types of practices can be applied to any type of agricultural production operation. OFFS programs reduce the risk of unsafe food products originating from the farm. On-farm food safety programs are developed by the national commodity associations. Contact your provincial association for more information.

Hazard Analysis Critical Control Point (HACCP)

The HACCP (pronounced HA Sip) system is a proactive program that is internationally recognized as an effective approach to food safety in processing facilities. HACCP requires an assessment of what food safety problems can occur at any stage of the process. Control measures are then identified to prevent, reduce or eliminate these hazards to an appropriate level to avoid adverse human health consequences. While HACCP is still voluntary, many companies are choosing to develop and implement a HACCP program.

Food Safety Enhancement Program (FSEP)

FSEP is the Canadian Food Inspection Agency's approach to encourage and support the development, implementation and maintenance of HACCP systems in specific types of federally registered establishments.

Effective food safety systems are built on a solid foundation of prerequisite programs. These programs provide the basic environment and operating conditions that are necessary for the production of safe, wholesome food.

Currently, the On-Farm Food Safety and HACCP programs are voluntary.



Details and links to further information on OFFS, HACCP and FSEP programs are available in Chapter 6: It's the Law.

For more information on establishing a food safety program for your business contact the Food Safety Division of AAFRD. Visit their website at [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs7806?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs7806?opendocument) or call (780) 427- 4054. For toll free calling, dial 310-0000 first.

“It’s important to us to be aware of food safety from raising our bison right through processing, packaging and marketing our meat. We made a point of asking our processor about the procedures and temperature controls they use. We visited our processing facility to see first hand what happens as they make sausages and cut and wrap our meat. We think this is critical to providing safe food products for our customers.”

Darlene Hegel, Valta Bison



Food Safety Programs

What is the OFFS program for your commodity?

Who is the contact for more information on this OFFS program?

Have you implemented the prerequisite programs or HACCP in your food business? _____

Who is the contact for more information on prerequisites or HACCP?

HACCP – acronym for Hazard Analysis Critical Control Point, a systematic approach used in food production as a risk-based means to ensure food safety.

Food Safety is Your Responsibility

It is your responsibility to produce your products as safely as possible and to abide by all legislation that impacts your products and business. Regulations and licensing requirements are in place to protect consumers from unsafe food.

It's important to build a good working relationship with the inspector who will be inspecting and approving your facilities and products. Not only do inspectors enforce critical legislation, they can also direct you to other contacts and resources. If you sell at numerous locations across the province, you will need to develop relationships with the public health inspectors in other regional health authorities from the one in which your business is located. Be aware that each regional health authority can establish requirements in addition to those set out in provincial legislation.

“My relationship with the RHA goes back a long way. I came into the industry as a green market manager and I depended on them to train me. I've had a long standing relationship with the same three health inspectors over 15 years. They tell me what they need and I try to comply.” Jackie Lacey, Millarville Farmers' Market



For more information on the federal and provincial legislation that may impact your business see Chapter 6: It's the Law! and Chapter 7: It's the Law II.

Summary

Farm direct marketing is one way that producers can get their products and services to market. It encompasses a number of methods of selling products directly to consumers. Selling at Alberta Approved Farmers' Market is one such method.

Approved markets are not the same as public, craft or flea markets. Approved farmers' markets must meet certain requirements established by AAFRD to maintain their status. Additional advantages are provided by the unique positions approved markets have under the provincial *Public Health Act* Food and Food Establishments Regulation.

It is your responsibility to produce your products as safely as possible and to abide by all legislation that impacts your products and business.

All foods sold in Alberta, with the exception of some foods sold at Alberta Approved Farmers' Markets, must be prepared in a facility permitted by the regional health authority.

Business growth and success is one of the main benefits to minimizing food safety risks in your operation.

There are many benefits to minimizing food safety risks in your operation:

- Pride in producing safe food products
- Improved quality of your products
- Improved appearance in your products and establishment that attracts new customers
- Satisfied customers who continue to support and promote your business
- Continued business growth and success
- Peace of mind in knowing that you are complying with legislation and exercising due diligence

Recognizing and addressing food safety issues ensures the sustainability of your business and helps secure your future.

What's Next?

Do consumers really care about food safety? Do you need to be concerned about food safety? If you still have questions about what this food safety hype is all about, proceed to the next chapter and discover why food safety is important.

Chapter 2:

Food Safety is Important

Learning Objectives

After completing this chapter, you will be able to:

- Describe why food safety is important to your farm direct business or Alberta Approved Farmers' Market
- Address consumers' concerns about food safety
- Define foodborne illness

Chapter 2: Food Safety is Important

The material in this chapter gives farm direct marketers and Alberta Approved Farmers' Market Managers an understanding of why food safety is important to their business and their market. The food safety plan you build as you work through this manual and then implement will enable you to address consumers' concerns about the safety of their food.

Consumers Demand Safety

Food safety is keystone to our food supply. Consumers demand quality and safety in the foods they buy whether they're purchasing from a farmers' market vendor, restaurant, large supermarket or small convenience store. Over the past decade, Canadians have become increasingly aware and concerned about food safety with almost half worried about the safety of the food they eat. Not surprisingly, consumer surveys rank food safety as being almost as important as health care.

Almost 50 percent of Canadians are worried about food safety.

Table 2.1 **Top Food Safety Issues of Personal Concern**

Issues	% of Respondents
Bacteria/contamination in food	20
Contamination from handling	15
Antibiotics/hormones/steroids/drugs to fed animals	7
Use of pesticides/herbicides/spray	4
Freshness	3

Food safety concerns are diverse.

Source: Ipsos Reid Consumer Perceptions of Food Safety and Quality 2004

Consumers have a general concern about food safety but when pressed to list specific issues, bacterial contamination was the area most frequently recorded.

In spite of increased media reports of people getting sick from contaminated food or water, Albertans are very confident in their food providers and the safety of their food supply. In fact when compared against Canadians as a whole, Albertans are more confident on all issues. They are especially confident with their farmers' markets, producers who sell direct and grocery stores.

Consumers in the Prairies have the highest level of confidence in the safety of Canada's food supply.

Whenever possible almost 60 percent of Canadians eat food that is locally produced. An Ipsos Reid survey conducted in May 2005 reported 85 percent confidence level by Canadians in the safety of food purchased at farmers' markets and direct from producers. Eighty percent of Albertans are confident in the safety of Alberta-produced food.

While Canadians are generally confident in the safety of their food, they have concerns with some areas of the supply chain. Consumers view the processing industry, restaurants and farmers as having the most important roles in food safety.

“Food safety and quality products are the foundation of our business. If consumers don't have confidence in our products they won't purchase them. It's our responsibility as a producer and vendor to provide safe products for people to buy.” Darlene Hegel, Valta Bison

Consumer Perceptions

Surveys indicate that:

- Over one-third of consumers believe that if a problem is going to occur, it will happen during the processing of a food.
- About one-third of those surveyed believe that a problem is mostly likely to happen on the farm in foodservice.
- Just under ten percent believe the problem is most likely to arise at the grocery store

Table 2.2 Where Canadians Feel Food Safety Problems are Mostly Likely to Develop

Location of Concern	% of Respondents
During the processing of foods	38
In restaurants	15
At the farm	15
During transportation	10
In the home	10
At the grocery store	9

Source: Ipsos Reid Consumer Perceptions of Food Safety and Quality 2004

Consumers have perceptions about where a food safety problem is most likely to develop.

In another survey, Albertans believe that everyone has an important role to play in food safety. Farmers received the highest rating at 85 percent, but that was only slightly higher than food processors.

Table 2.3 **Importance of Suppliers for Ensuring Safety of Food**

Supplier	% of Respondents Who Ranked Very Important
Farmers	85
Food processors	80
Retailers	79
Food distributors	75
Restaurants	74

Source: Ipsos Reid Food Safety Consumer Perceptions and Behaviours 2005

As a farm direct marketer, you can reduce the risk of a foodborne illness and maintain consumer confidence in your food by implementing food safety best practices at the market. Evaluate your production and market food safety practices. Focus first on those areas of greatest concern to your customers: cleanliness, safe handling, proper storage, production and freshness. Implement changes as required.

“The driving force behind changes in our food safety practices was customer demand.” Greg Sawchuk, Muriel Creek Cattle Company

Market managers and farm store operators need to be aware that the safety of food products in their market or store is of concern to customers. Pay close attention to these products. Work with your vendors and farm direct suppliers to ensure that their products are safe and that they are perceived by your customers to be safe.

“Some of our customers are requiring food safety best practices right now or they just won’t buy from us.” Helen Doef, Doef’s Greenhouses Ltd.

Farm direct marketers have a role in ensuring safe food.

Food safety is another marketing tool in your arsenal.

Food Safety – A Marketing Tool

Consumers expect their food to be safe – always. All players in the food industry stake their business on the safety of their food products every day. Simply put, the agriculture and food industry operates in a culture of food safety.

“Food safety is our key competitive advantage. Food safety is becoming a huge differentiator and we’re well positioned to respond to increasing consumer demands for confidence in the food they buy. Canada can be a world leader in the global food supply if we go from doing a *good* job in food safety to doing a *great* job.”

Michael McCain, President and CEO, Maple Leaf Foods Inc.

Food safety is one promotion tool to use to market your products and differentiate them from others in the marketplace. You can use your food safety practices to advantageously position your products. Tell your customers about how you handle your food and what you do to provide them with the safest products. However, ensure that your actions support your words.

Be aware that there is a potential danger in using your food safety program as a marketing tool. You can’t control food safety to the same degree that you can other product features. Control is reduced with each step and player added to the supply chain. In addition, your control is only as good as the weakest link. Furthermore, as consumers become more informed about food safety, their attitudes and behaviours may shift, resulting in greater or different food safety demands.

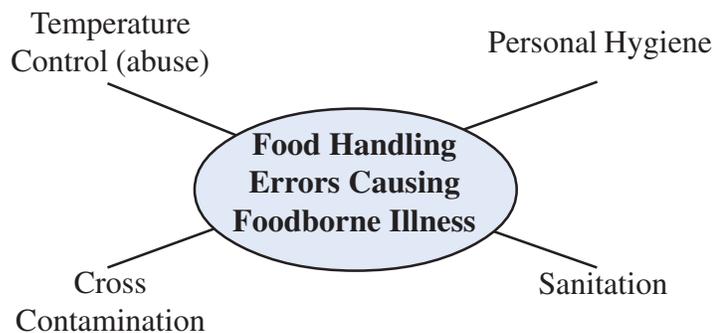
Consumer polls indicate that about half of Canadians are concerned about food safety. The food and agriculture industry is responding to consumer demand for a continued safe food supply by expanding existing and implementing new food safety programs. These programs are driven by industry, not government, in response to changes in the market place.

“Food safety is critical when you have that one-on-one contact with customers. It’s a trust relationship so you have to go above and beyond their expectations.” Greg Sawchuk, Muriel Creek Cattle Company

Foodborne Illnesses

Foodborne illnesses are caused by consuming unsafe or contaminated foods, water or beverages. They're called foodborne illnesses simply because food acts as the transmission vehicle for harmful organisms and toxic substances. Foodborne illness frequently results in temporary disorders such as nausea, diarrhea and flu-like symptoms but can lead to serious long-term health consequences and even death. Food that looks, smells and tastes good can still cause serious foodborne illness. If you have experienced nausea and vomiting accompanied by stomach cramps and diarrhea, then you may have been a victim of food poisoning and not the 24 hour flu.

Foodborne illnesses are often caused by food handling errors in four areas:



In Alberta, more than 3000 cases of foodborne illnesses are reported each year. The actual number is likely much higher as many cases go unreported. People often self diagnose foodborne illness as 24 hour flu and do not seek medical help due to the mildness of the symptoms. In many instances, the symptoms may not appear until days or weeks after ingesting a pathogen. This time lapse makes it difficult to identify the cause of the illness and the particular food that was contaminated. As a result, it's estimated that only 1 to 5 percent of foodborne illnesses are reported.

The Impact of Foodborne Illness

Foodborne illness is a serious and growing problem that costs lives and money. Thousands of Albertans become sick each year and some die after eating contaminated or mishandled foods. Children, the elderly and those in poor health are especially vulnerable to foodborne illness. Health Canada estimates 2.2 million cases occur annually across the country. The cost to the Canadian economy is staggering. According to Health Canada estimates, the increased health care costs, reduced productivity and lost markets amount up to six billion dollars annually.

CLEAN: wash hands and surfaces often

SEPARATE: don't cross contaminate

COOK: cook to proper temperatures

CHILL: refrigerate promptly

Microbial foodborne illness represents a significant percentage of the total estimated cases. At about a million cases each year, Health Canada estimates the cost of microbial foodborne illnesses at more than \$1 billion. These figures become even more significant when you realize that most of these cases are avoidable.

By preventing foodborne illness outbreaks, farm direct vendors and farmers' market managers can prevent people from getting sick and avoid bad publicity, loss of reputation, expensive legal fees, medical claims, wasted food if recalled and quite possibly, closing their business or market.

As you read through this manual, you'll learn how to reduce the risk of foodborne illness by improving your food handling practices.

What's Your Acceptable Risk?

Foodborne illness is preventable. Minimize its risk by practicing safe food handling methods. The costs of foodborne illness to the farm direct marketer or farmers' market manager may be financial, medical or legal. The costs associated with foodborne illness and the damage to the reputation of the farm direct marketing business or farmers' market are a high price to pay. How much risk are you comfortable taking? A foodborne outbreak traced to your operation could put you out of business.

“In this day and age, food safety is critical. We have 60 plus vendors, 107 stalls and 35,000 square feet of retail space. One incident where something gets out of control can shut down the market. If we have one vendor affecting 60 to 70 families, it's going to have an impact on their livelihoods.” Anne Lambert, Calgary Farmers' Market



Level of Risk

Evaluate your level of risk by answering the following questions.

What is the impact of losing customers who eat contaminated food and become ill? _____

Whose responsibility is it if there is a food safety incident at the farmers' market or farm store? _____

How will you assume the financial responsibility if legal action is taken against you? _____

What other financial resources do you have if you lose your business or the market closes because of a foodborne illness outbreak?

How will you handle the loss of reputation that accompanies a foodborne outbreak? _____

If a foodborne illness occurs, are you financially prepared to deal with the consequences? Does your insurance policy provide any coverage against a food poisoning incident? If so, what is your level of coverage? _____

Summary

Canadians are increasingly worried about the safety of their food supply. Fortunately for farm direct marketers, Albertans are confident in the products you produce. But this confidence is fragile. A major foodborne incident could reduce this level of confidence and support.

It is your responsibility to do everything possible to ensure that you are providing safe food. It is crucial that your food is safe: every product, every sale and every market day. If customers are unhappy with the products they purchase from you or at your market, they will not be back. Word of mouth advertising from a bad experience is not good for future business.

Market Manager Responsibilities

As a manager of an Alberta Approved Farmers' Market you must make certain that the market is a safe place for food to be sold. Safe food handling practices by employees and vendors will help ensure that your market does not contribute to the contamination of food with biological, chemical and physical hazards. As you walk through the farmers' market, check that all vendors are doing their part to ensure the safety of the food they sell.

“We have an operations staff of about 20 people for our market. I made sure they all got copies of the Food Safety Checklists so they are aware of the requirements for cleanliness of the washrooms, garbage and facilities.” Sonia Meyer, Lethbridge Farmers' Market

What's Next

What do food safety hazards, bad bugs and indirect transmission all have in common? They all can lead to foodborne illness. Read the next chapter, Chapter 3: Bad Bugs to learn more about the causes of foodborne illness.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.

Chapter 3:

Bad Bugs

Learning Objectives

After completing this chapter, you will be able to:

- Describe the three types of food safety hazards and conditions that lead to their development
- Explain the potential food safety risks associated with various microorganisms
- Understand the ways pathogens are transmitted

Chapter 3: Bad Bugs

The material in this chapter provides a general overview of foodborne illnesses and the microorganisms that cause them. It answers the broad questions of what contaminates food and what are bad bugs.



For more information on the conditions that support the development of foodborne illness see Chapter 5: Danger Zone Ahead.

Foodborne Illnesses

Foodborne illnesses are caused by consuming unsafe or contaminated foods or beverages. They are called foodborne illnesses simply because food acts as the transmission vehicle for harmful organisms and toxic substances.

Food is unsafe for human consumption when it is contaminated by:

- Disease causing microorganisms (pathogens) such as viruses, bacteria and moulds
- Parasites
- Chemicals such as pesticides, cleaning agents or heavy metals
- Foreign objects such as hair or insects

Proper packaging, appropriate temperature control and applying recommended food handling practices can reduce the risk of foodborne illness.

Foodborne illnesses can spread easily and quickly. For example, an infected food handler can transmit his illness to another person by poor food handling practices such as sneezing or coughing over food, improper hand washing, etc. Foodborne illnesses can range from mild symptoms that last only a few hours to conditions requiring hospitalization and even death. In a small percentage of victims, infections can lead to chronic ailments such as kidney damage, arthritis or heart problems.

Foodborne illnesses are caused by consuming unsafe or contaminated foods or beverages.

Hazards

Hazards are agents in, or conditions of, food that have the potential to cause an adverse health effect in consumers. They are harmful substances that when found in food can cause illness.

Food safety hazards are divided into three categories:

- Physical hazards result from the presence of foreign objects in food
- Chemical hazards arise from contamination by any allergen, natural toxin or chemical
- Biological hazards result from contamination with disease causing microorganisms

Each hazard is associated with different risks in terms of the severity and duration of potential adverse effects. Although you should eliminate all hazards in the foods you market to consumers, pay particular attention to biological hazards. Biological hazards are the most common hazard in the marketplace and present the greatest potential for an adverse health effect.

A food safety hazard is a biological, chemical or physical property that may cause an unacceptable consumer health risk. The objective of any food safety program is to reduce the risks created by all potential hazards.

Pathogen – any bacteria, virus, mould or other form of life too small to be seen by the naked eye and capable of causing disease, illness or injury. Pathogens require moisture, temperature, proper pH and food source to grow. They can double every 10 – 20 minutes and do not necessarily change the look, smell or taste of food.

Table 3.1 Hazards That Cause Foodborne Illness

Hazard	Some Examples	Some Sources/Causes
Physical	Hair, insects, false fingernails, wire, jewelry, wood splinter, glass, metal fragments, stones, rodent droppings	Introduced through improper handling, by equipment malfunction, damaged packaging
Chemical	Allergen, food additives, heavy metals, cleaning agent, sanitizer, pesticide residue, natural toxin, drug residues	Accidentally added to foods during harvesting, processing, transportation, storage, marketing or preparation or added in greater amounts than legally allowed
Biological	Disease causing microorganisms – bacteria, viruses, parasites, fungi, moulds, yeast, worms	Raw foods, untreated water, soil, feces, poor worker hygiene, inadequate cooking or cooling of food

Physical Hazards

Physical hazards are foreign objects in a food product that can cause injury. They are the most visible of the three types and most likely to elicit consumer complaints. They are usually easier to prevent than either chemical or biological hazards because they can be seen. Physical hazards pose a greater risk when they are small enough to miss visual detection.

Chemical Hazards

Chemical hazards may be naturally occurring or added during production, processing or marketing. Allergens are a big issue facing farm direct marketers today. Although not generally classified as foodborne illnesses, allergic reactions to food components are very serious and can be life threatening. Properly label all your food products and avoid a situation that could have serious consequences for a customer.

Toxic metals such as copper, brass, cadmium, lead and zinc can be a source of chemical contamination. Zinc is used in galvanized containers such as garbage cans and gray enamelware containers. If these containers are used to store acidic foods like fruit juice, punch, tomato sauce, sauerkraut, or pickles, the metal may dissolve and enter the food, making these foods poisonous. For the same reason, pottery dishes with lead glazes should not be used to store, prepare or serve food.

Physical hazards generate the most consumer complaints because they are the most visible of the hazards.

Chemical hazards may be naturally occurring or added during production, processing or marketing activities.



For information on common food allergens and their labelling visit the allergens page on the website of the Canadian Food Inspection Agency (CFIA) at www.inspection.gc.ca/english/fssa/labeti/allerge.shtml

On the CFIA website, you will also find the document *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products* which lists allowable cleaning agents, sanitizers and other chemicals. Visit www.inspection.gc.ca/english/ppc/reference/cone.shtml

Biological hazards are the most serious of the three hazards because they are more likely to cause debilitating illnesses or death. They can't be seen, smelled or tasted.

The steps you take to keep food safe will usually lead to better food quality as well.

Microorganism = Microbe

Biological Hazards

Not all microorganisms found in food are harmful. Yeast used to leaven bread, mould to ripen blue cheese and bacteria to culture yogurt are just a few examples of helpful microbes. The food safety concern focuses on the harmful microbes that make food unfit to eat, cause infection or contaminate water.

Biological hazards present the highest risk to food safety because they can't be seen, smelled or tasted. They are the most serious of the three hazards because they are more likely to cause debilitating illnesses or death.

Bacteria are the most troublesome and important biological foodborne hazard for you. They usually fall into one of two classifications: spoilage or pathogenic.

Spoilage bacteria break down foods so that they look, taste and smell bad. They affect food quality but they do not make you sick. Used under controlled conditions, spoilage bacteria produce beneficial products such as yogurt, cottage cheese and buttermilk.

Pathogenic bacteria are disease-causing microorganisms and if consumed can cause illness. Foods containing dangerous levels of pathogens may show no signs of spoilage. In fact, they do not compete well with spoilage organisms. Pathogens affect food safety, not food quality, and are the focus of this chapter.

Sources of Microorganisms

Microorganisms, or microbes, are found all around us. They are in the air, water, ice, soil, dust and contaminated food. They grow on or in living things such as plants, animals and insects. They flourish in the mouth, nose and intestines of animals including humans. Microbes are commonly found in large numbers on our hair, face and hands, so it's not surprising that they are also found on the items we touch and use.

Foodborne Illness from Biological Hazards

The US Center for Disease Control and Prevention (CDC) has identified more than 400 different food related illnesses and over 200 foodborne hazards. Different illnesses have different symptoms. However, since the microorganisms or toxins enter the body through the gastrointestinal tract, the first symptoms often develop here. That is why common symptoms include nausea, vomiting, abdominal cramps and diarrhea. Headache and dehydration are frequently secondary symptoms.

The symptoms of a foodborne illness may be mild and last only a few hours or they may be serious, lasting much longer and requiring intensive medical treatment. In high risk groups such as children, the elderly or individuals with weakened immune systems, death may occur.

Types of Foodborne Illness

Foodborne illnesses are classified as infection, intoxication or toxico-infection.

An infection occurs when foods or beverages contaminated with disease-causing microorganisms are consumed. It's the pathogen that makes you ill. Foodborne bacteria, viruses and parasites are examples of microorganisms that can cause infection. Bacteria are living organisms that take in food, give off wastes and multiply. One single bacterium can multiply to more than 2 million in seven hours. Salmonellosis is an example of a bacterial infection.

After ingestion, the pathogen lodges in the gut and begins to multiply, resulting in foodborne illness symptoms like diarrhea and vomiting. The infective dose, or the number of organisms needed to make you sick, can vary from a few (10 to 100) to many (a million or more). The infective dose is also determined by the age and state of health of the person.

Foodborne illness or food poisoning can also result from toxic substances in the food. Intoxication occurs when the microorganism grows on a food and produces a toxin. The food containing the toxin is eaten and the toxin causes the illness. In other words, the organism itself doesn't make you sick; its toxin does.

The three categories of foodborne illness are infection, intoxication and toxico-infection.

Gastrointestinal tract – the part of the digestive tract where the body processes food and eliminates waste. It includes the esophagus, stomach, liver, intestines and rectum.

About two-thirds of all food poisoning outbreaks involve bacteria. Viruses, parasites, fungi and chemical contamination cause the rest. The illnesses may be caused by the microorganisms themselves or the toxins they release.

Generally these toxins are odorless, have no taste and are able to cause illness after the microorganism has been cleared from your system. Examples of microorganisms that can cause food intoxication are bacteria like *Clostridium botulinum* and *Staphylococcus aureus*. Poisoning due to intoxication can also result from consuming food containing toxic chemicals such as cleaners, sanitizers, pesticides or heavy metals.

A toxico-infection is caused when a pathogen is consumed and then proceeds to produce a toxin in the body that results in illness. This is in contrast to intoxication where the toxin is produced on the food and then ingested. Cholera is one example. A toxico-infection also happens from the pathogen *Clostridium perfringens*.

Types of Foodborne Illness

Infection: ingestion of a harmful microorganism within a food

Intoxication: ingestion of a harmful toxin produced within a food

Toxico-infection: ingestion of a harmful microorganism within a food that produces a toxin in the human body

A Closer Look at Some Common Pathogens

Bacteria and viruses cause most of the more than 400 identified food related illnesses. The most commonly recognized foodborne illnesses are those caused by the bacteria *Campylobacter*, *Salmonella*, *Staphylococcus* and *Escherichia coli* (*E. coli*), *Listeria monocytogenes*, and by a group of viruses called calicivirus, also known as Norwalk-like viruses. These are by no means the only organisms that cause foodborne illnesses.

Table 3.2 Sources of Most Common Foodborne Illnesses

Organism & Illness Caused	Symptoms	Source of Organism	Some Common Foods Involved
<i>Campylobacter jejuni</i> Campylobacteriosis	Fever, headache, nausea, muscle pain, diarrhea (sometimes bloody)	Intestinal tracts of animals and poultry Soil, untreated water	Raw and undercooked poultry and meat, raw milk, raw clams Foods contaminated by raw meats and raw meat juices
<i>Salmonella</i> species Salmonellosis	Nausea, vomiting, fever, headaches, diarrhea, abdominal cramps Can be serious for persons with weakened immune systems	Intestinal tracts of animals especially pigs and poultry, human carriers	Raw meats, poultry, fish, shrimp Foods contaminated by raw meats and raw meat juices Eggs, raw milk, dairy products
<i>Staphylococcus aureus</i> Staphylococcal intoxication	Nausea, vomiting, abdominal cramps (usually severe), sweating, diarrhea, headaches Organism produces a highly heat-stable toxin that cooking doesn't destroy; salt tolerant	Hands, throats, nasal passages and sores of humans Good personal hygiene, especially hand washing, is very important to reduce risk	Foods requiring significant handling and kept at warm temperatures are greatest risk. Meat and meat products, meat salads, poultry and egg products, milk and dairy products, cream filled bakery products, custards, sandwich fillings
<i>Escherichia coli</i> O157:H7 Hemorrhagic colitis	Severe and bloody diarrhea, severe abdominal cramps, nausea, vomiting, kidney failure and death in severe cases Young, elderly and persons with weakened immune systems at greater risk for severe symptoms	Intestines and feces of animals particularly cattle, sheep, pigs and poultry Soil, untreated water	Raw and undercooked beef and chicken, raw milk, raw milk products Foods contaminated by raw meats and raw meat juices Faecally contaminated foods and water
<i>Listeria monocytogenes</i> Listeriosis	Nausea, vomiting, diarrhea, mild flu-like symptoms Abortions Can be very serious for persons with weakened immune systems, often resulting in death	Intestinal tracts of animals and humans Soil, silage, contaminated water Listeria frequently found on processing equipment if improperly cleaned and will grow at refrigeration temperatures	Raw meats and poultry, fermented sausage, raw milk, dairy products, uncooked vegetables, raw and smoked fish
<i>Clostridium botulinum</i> Botulism	Generalized weakness, dizziness, dry mouth and throat, blurred vision, followed by paralysis and respiratory failure. Fatal without antitoxin. <i>C. botulinum</i> toxin is the most toxic compound known.	Improperly canned and preserved foods Organism grows in the absence of oxygen to produce toxin. Toxin present even after organism dies.	Home canned low acid, foods, e.g., meat, antipasto, vegetables and salsas, commercially canned foods (avoid bulging or severely dented cans), smoked and fermented fish
<i>Calicivirus</i> (Norwalk and Norwalk-like virus) Gastroenteritis	Nausea, vomiting, diarrhea	Human carriers, water Good personal hygiene, especially hand washing is very important to reduce risk. Infected personnel should not handle food.	Infected workers contaminate food Contaminated water Shellfish and salads are often implicated in outbreaks

Other foodborne illnesses are typically transmitted by water or other routes. These include infections caused by the parasites *Giardia lamblia* and *Cryptosporidia*. On-farm food safety programs (OFFS) and good production practices (GPPs) in our meat industries have made infections from parasites uncommon.

Almost three-quarters of Canadians are concerned about E. coli and Salmonella bacterial contamination in food.



For more information on specific foodborne illnesses visit Alberta Health and Wellness website at:
www.health.gov.ab.ca/public/diseases/FH1Foodborne.html

More information on causes of foodborne illnesses, common foods involved and disease characteristics can also be found in Appendix I: Common Foodborne Pathogens.

Transportation of Microbes

Microbes cannot move on their own. Most microbes are hitchhikers, relying on people, animals, insects and water to transport them from one host to the next. Microorganisms readily spread from one person to another through coughing, sneezing, speaking and touching. Animals, including pets and rodents, may transfer microbes to humans through their saliva, fur, dander, paws, feces and urine. Insects such as flies and roaches are common carriers of many microorganisms. Viruses and parasites are frequently transported by water. Microbes can also be thrown into the air and carried to different places by dust.

Disease Transmission

Disease causing microorganisms can be spread by direct or indirect means. Direct transmission occurs when the organism goes directly from the source to the food, for instance when an infected worker coughs or sneezes onto food or mice leave droppings in cereal.

Indirect transmission occurs when there is an in-between step where the microbe goes from the source to a carrier such as food and then to another person. This situation occurs when an infected person contaminates a knife that is subsequently used to cut cheese which causes the consumer to become ill after consuming the cheese. Preparing raw chicken on a cutting board that is then used for slicing bread or sneezing into your hand and then packing strawberries without properly washing your hands are other examples of indirect transmission. In these instances, the microbes can contaminate the cheese, bread and strawberries and be transferred to another person when eaten. Indirect transmission commonly occurs through food, sewage or objects.

Pathogens can be spread directly or indirectly. Direct transmission occurs when the organism goes directly from the source to the food. Indirect transmission occurs when the microbe goes from the source to a carrier such as food and then to another person.



This graphic illustrates how a sneeze or cough can project pathogens into the air, contaminating everything that the pathogens land upon. Note the amount of material that is released.

Figure 3.1 **Contamination From a Cough or Sneeze**

Most potentially hazardous foods such as meat, poultry, fish, eggs and dairy or products made with these ingredients may contain pathogenic microorganisms. When the microbes move from raw food to cooked food, cross contamination occurs. The most common ways for microbes to move from raw food to cooked food is through hands, utensils and equipment and drips or spills. This easily happens during transportation, storage, food handling and preparation.



For more information on preventing cross contamination see Chapter 12: Equipment and Chapter 14: Food Handling.

Preventing Disease Transmission

It's important to make sure that you are doing everything you can to reduce the risk of foodborne illness. Most foodborne illnesses can be avoided by taking steps to prevent the movement of microorganisms from one host to the next. Practicing good personal hygiene, cleaning and sanitizing food contact surfaces, following proper temperature control and eliminating pests in the market reduce the risk of foodborne illness.

If you suspect you or a customer has a case of food poisoning, contact the Environmental Health Department of your regional health authority.

Keeping Records

To protect yourself and your business you need to keep detailed written records of any complaints regarding foodborne illness. You should maintain records of contacts made, date of contact, nature of contact, decisions made and actions taken. Records also help in the event of legal action because of a food safety issue.

If you suspect you or a customer has a case of food poisoning, contact the Environmental Health Department of your regional health authority.

Summary

Foodborne illnesses result from consuming unsafe or contaminated foods or beverages. Symptoms of food poisoning may include nausea, vomiting, diarrhea, dizziness, fever and headaches. They may be mild and last only a few hours or they may be serious and require intensive medical attention. Report any suspected cases of foodborne illness to your regional health authority.

Foodborne illnesses may be classified as infection, intoxication and toxico-infection depending on what effect the microorganisms produce within food or your body. The most serious foodborne illnesses are caused by microorganisms that can be transmitted to you directly or indirectly.

Hazards are any biological, chemical or physical agent in food that have the potential to cause an adverse health effect. Hazards may be naturally occurring or added during any stage of handling a food product.

Market Manager Responsibilities

As a manager of an Alberta Approved Farmers' Market, you must make sure that the market is a safe place for food to be sold. Talk to your vendors and learn about their food safety practices. Observe how vendors handle their products at the market and bring your concerns to their attention.

Document any complaints of foodborne illness. You should maintain records of complaint made, date of complaint, nature of complaint, decisions made and actions taken. These records will help to identify trends in complaints that could aid you in identifying vendors who are not keeping their food safe at the market.



Food Safety Checklists

Use Market Startup and Weekly Food Safety Checklists for Market Managers (see Appendix M) to help you monitor your market. Add any personal hygiene issues that are missing for your market. Remember that you and your vendors should be using the checklists every market day.

“We introduced a stronger code of food safety at our market simply because it was the right thing to do. Customer safety is our first priority at the market.” Jim O’Neill, Manager, Old Strathcona Farmers’ Market

What’s Next

The next chapter introduces you to some life-like example farmers’ market vendors and farm direct marketers. These case examples are used throughout the rest of the manual to illustrate concepts and highlight primary food safety issues.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food and Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.



Chapter Review

1. What are the three types of food safety hazards?

2. What is another term for microorganisms that cause diseases and are too small to be seen by the naked eye?

3. Which hazard has the most adverse effect on people?

4. Give two examples of common symptoms of foodborne illness.

5. What are the three categories of foodborne illness?

6. What are the two means of pathogen transmission?

Answers to Chapter Review

- 1) Biological, chemical and physical
- 2) Pathogens
- 3) Biological
- 4) Any of the following: nausea, vomiting, diarrhea, abdominal cramps, headache
- 5) Infection, intoxication, toxico-infection
- 6) Direct, indirect

Chapter 4:

Meet Our Marketers

Learning Objectives

After completing this chapter, you will have:

- Background information on the three fictional marketers used throughout the manual to describe the food safety opportunities and challenges that farm direct marketing presents

Chapter 4: Meet Our Marketers

The following case examples do not provide comprehensive information. They are meant to illustrate certain concepts. To fully understand the concepts in each chapter, read the manual information in conjunction with the case examples.

As a direct marketer, you will likely face some of the same food safety issues that our fictional marketers face. Although your products may be different, the food safety requirements will be the same. Each case example shows the major food safety issues in one of three different food types:

- Meat (potentially hazardous)
- Produce (perishable)
- Baked goods (generally considered non-hazardous)

Chapters 6 and 7 highlight only the legislative requirements for food safety. You must know all the federal and provincial regulations that impact your business.

Follow our marketers as they develop best practices to address the food safety issues they face. Read the following chapters and apply a similar process to your business to build your own food safety plan.



Hogs and Hens at Alberta Approved Farmers' Markets



Background

Mike and Elizabeth operate a 700-acre farm in the Peace region of Alberta. They have three children aged 10, 14 and 17. The farm has been in Mike's family for over 50 years. Ten years ago, to supplement their farm income, they started direct marketing chickens from the farm to local customers.

Eight years ago they began selling at the local farmers' market which operates year round on Thursdays. While researching this marketing opportunity, they discovered that all meat sold must be slaughtered at a government inspected facility. Since then, all their birds have been slaughtered at provincially inspected facilities. Because of the rave reviews they received from their customers, five years ago they started selling at a large urban, approved farmers' market in central Alberta.

Products and Marketing Channels

Two years ago, increasing input costs and decreasing commodity prices forced Mike and Elizabeth to make a decision about the operation of the farm. They either needed to expand their production capability or focus on the farm direct marketing aspect of their business. They decided to grow their farm direct marketing operation and convert more of their grain land into pasture. They increased their production of meat products to include free range turkeys and chickens for sale through the farmers' markets.

At the urban farmers' market, they invested in a permanent booth and an on-site freezer. The chickens and turkeys are sold whole and frozen.

Future Opportunities

Mike and Elizabeth have always raised a few hogs for personal consumption. Over the last two years they have increased their production and are testing their pork products at the local farmers' market.

They sell their pork as ready-to-eat ham kubassa, and frozen cuts and breakfast sausages. They plan to sell their pork products at the urban farmers' market next year. All their animals are slaughtered and the meat is processed at provincially inspected facilities.

The manager of an outdoor farmers' market on the British Columbia side of the Peace region approached Mike and Elizabeth about selling their pork and poultry at her market. Aware that selling outside Alberta has implications, they are still considering this opportunity.



Green Thumbs at Alberta Approved Farmers' Markets

Background

Liane and her sister Pam operate a large market garden in central Alberta. They sell from the farm gate and at five weekly approved farmers' markets between Edmonton and Calgary. The size of their operation requires them to have additional staff: some who work strictly at the farm and some who work at both the farm and the farmers' markets. They attend a year round market in Edmonton, plus two seasonal indoor and two outdoor markets.

Products and Marketing Channels

Liane and Pam offer a full range of fresh vegetables including cucumbers, zucchini, pumpkin, squash, tomatoes, peppers, potatoes, carrots, peas and beans. The cucumbers, tomatoes and peppers are grown in the greenhouse, giving them an early crop to take to the farmers' markets. They sell their vegetables both bagged and bulk by the kilogram.

They also have five acres of strawberries, sold primarily fresh as U-pick and at the farmers' markets. Strawberries are sold by the basket. They process some strawberries into jam. Carrots and cucumbers are processed into pickles that are sold at the year round market. A neighbouring bed and breakfast uses their strawberry jam and displays it for sale.

Future Opportunities

Liane and Pam's regular customers are asking for a greater selection of pre-picked products at their farm. To meet this demand, the sisters are considering building a small farm store where they could also sell refreshments.

Demand for their fresh products is growing, particularly at the year round market. Their current cold storage needs to be replaced and expanded.





The Happy Baker at an Alberta Approved Farmers' Market



Background

Heidi sells her home baked goods at a medium sized, approved farmers' market in southern Alberta. She has been selling at the farmers' market for five years and enjoys the experience. She has a loyal customer base. Many of the other vendors are her neighbours and friends. The farmers' market is open from April to the end of October with a Christmas market in November.

Products

Heidi bakes bread, buns and cookies. She recently introduced fruit pies: saskatoon, strawberry, saskatoon rhubarb and strawberry rhubarb. Her pies are her best selling product with sales growing every week. All her products are currently sold fresh.

Future Opportunities

Heidi is evaluating a number of opportunities for business expansion to provide her with a year round income from her pies. These include selling to a teahouse, expanding her pie line to include other types and adding frozen pies.

Olga, the owner of a local teahouse, recently approached Heidi. Olga's business is located on a quaint piece of property just outside town and attracts several busloads of tourists each week. Olga feels Heidi's pies would sell very well at her teahouse.

At a recent conference, Heidi met market gardeners, Liane and Pam, and is considering making pies using their pumpkins and strawberries.

Heidi cannot supply all the pies for fresh sales at the market and teahouse from her kitchen. She is considering expanding her pie line at the market to include baked and unbaked frozen pies.

Summary

You have now met our fictional marketers. These case examples will highlight the primary food safety considerations related to meat, produce and baked goods. The experiences of Mike, Elizabeth, Pam, Liane and Heidi do not illustrate all the food safety issues that may impact your business. It's up to you to learn about the food safety issues for your own business and develop strategies to reduce the risk of a food safety incident.

What's Next

Additional information to the case examples is provided in subsequent chapters. Some chapters have examples from all of the cases while other chapters describe only one situation.

Do you know what FATTOM is? Danger Zone? Hint: it's not an overweight man with high blood pressure. In the next chapter you will learn about the common conditions that lead to foodborne illness, so please read on and find out more about the Danger Zone and other potentially hazardous conditions.

Chapter 5:

Danger Zone Ahead

Learning Objectives

After completing this chapter, you will be able to:

- Define the terms 'potentially hazardous' and 'non-hazardous' food
- Describe the factors that support the growth of disease causing microorganisms
- Describe the danger zone temperatures
- Explain the significance of the time/temperature rule in relation to foodborne illness

Chapter 5: Danger Zone Ahead

The material in this chapter will provide an overview of the general factors that contribute to foodborne illness. It answers the broad question of how to prevent the bad bugs from flourishing.



Cream Pies Get the Cold Shoulder

Heidi is very interested in expanding her business and her pie line because of the growing demand. She has never had a problem with any of her products, but one of the other vendors at the market mentioned that pumpkin, meringue and cream pies aren't allowed at the market. Heidi decides to meet with the market manager and the public health inspector to discuss the rules and regulations.

The manager confirms that these pies aren't allowed at the market for food safety reasons and that Heidi should talk to the public health inspector for details. The public health inspector informs Heidi that pumpkin, meringue and cream pies are potentially hazardous foods. These are foods that will support the growth of pathogenic microorganisms. Heidi is told that this regional health authority does not allow these foods to be produced in a home kitchen; to produce her pies she will need to use a permitted facility and handle them carefully.

The biological hazards associated with pumpkin and cream pies will significantly impact how she produces and markets them. The pathogens may also reduce the shelf life of her pies.





Plastic Totes Make the Grade with Pam and Liane



Pam and Liane are very conscious of food safety issues. They grow their fruits and vegetables following good agricultural practices recommended by their industry association. They also hand out an information sheet to their customers advising them of safe produce handling practices in the kitchen.

They decided to pack their products in plastic containers instead of wooden crates or cardboard boxes. Pam and Liane learned that plastic totes can be reused because they are easily cleaned and sanitized. They don't create physical hazards as readily as wooden crates or cardboard boxes. Crates splinter with use; cardboard disintegrates when wet exposing the contents to cross contamination from soil, dirty water, etc.

The plastic containers are also easier to stack in the back of their vehicles. The use of covers reduces contamination during transport.



Bad Bug Sparks Operations Review



Mike and Elizabeth are registered in the Start Clean, Stay Clean program which is the on-farm food safety program for the chicken industry. In working through the program they realized that the bacterium Salmonella is a concern in their poultry production. As a result, they assess their entire operation. They identify the risks of microbial contamination in their pork and the potential for cross contamination between their poultry and pork products.

Mike and Elizabeth want to provide their customers with safe food and realize the importance of this to the success of their farm direct operation. They are evaluating which marketing activities expose their products to various hazards.

Not All Foods Are Created Equal

Different foods present different food safety hazards. How you prepare the food, the facility you're required to prepare it in and how you must handle it depends on the food safety risks. Some foods are intrinsically safer than others. Some are perishable and spoil easily. Some support rapid bacterial growth and can quickly cause foodborne illness if not handled properly. Others are shelf stable and can last for years under proper storage conditions without a change in quality or food safety risk.

Non-Hazardous Foods

Non-hazardous foods present less of a food safety risk. These foods are low in moisture and generally not susceptible to deterioration at room temperature. These foods can be prepared at home and sold at most Alberta Approved Farmers' Markets. Some examples include:

- Dry goods (unconstituted dehydrated foods, dry cereals, crackers, plain breads and buns, dried legumes)
- Acidic (pickles)
- Sweet (containing 50 – 60% sugar such as jams, jellies, syrups, cinnamon buns, brownies and fruit pies)
- Salted (20% salt or more)

All foods sold in Alberta, with the exception of some foods sold at Alberta Approved Farmers' Markets, must be prepared in a facility permitted by the local regional health authority.

Perishable – any food product or ingredient that is susceptible to deterioration or loss of quality when subjected to temperature abuse. Perishable foods have a shelf life of less than 90 days at room temperature.

Permitted facility – facility licensed by the regional health authority under the authority of the Food and Food Establishments Regulation of the *Public Health Act*.

Non-hazardous food – food that does not normally support the growth of disease causing bacteria and does not usually need to be refrigerated.

Potentially hazardous foods are capable of supporting the rapid and progressive growth of pathogenic microorganisms or the production of toxins. They pose an increased food safety risk.

Potentially Hazardous Foods

Potentially hazardous foods present the greatest food safety risk. They are foods that are normally rich in protein, moist, non acidic and readily support bacterial growth. They must be refrigerated or frozen and pose a food safety risk when left at room temperature for even short periods of time. They are frequently linked to foodborne illness because they can support the growth of pathogens.

Potentially hazardous foods include:

- Most animal products
- Eggs and egg products
- Dairy products
- Seafood products
- Cooked cereals, fruits and vegetables
- Many processed foods



For a more detailed list of potentially hazardous and non-hazardous foods see Appendix D: Potentially Hazardous Foods.

Potentially hazardous food – food capable of supporting the rapid and progressive growth of pathogenic microorganisms or the production of toxins, has a pH greater than 4.6 and a water activity (A_w) of 0.85 or more.

Pathogen – any bacteria, virus, mould or other form of life too small to be seen by the naked eye and capable of causing disease, illness or injury. Pathogens require moisture, temperature, proper pH and food source to grow. They can double every 10 – 20 minutes and do not necessarily change the look, smell or taste of food.

Foodborne illness – sickness caused by the ingestion of food containing microbiological, chemical or physical hazards; any illness that results from ingesting food or beverages.

You may be surprised to learn that cooked produce and cereals present a food safety risk. Cooking breaks down the starches and proteins in produce and cereals, and the protective outer layer of fruits and vegetables. This makes these foods more available for bacterial growth. These foods **must** be refrigerated once cooked.

Table 5.1 **Some Common Potentially Hazardous Foods**

Food Type	Comments
Meat, fish, shellfish and poultry	High protein foods that spoil rapidly. Prevent from contaminating other foods.
Milk and dairy products	Pasteurize.
Eggs	Includes all foods with eggs as an ingredient – cheesecake, custards, lemon meringue pie, pumpkin pie, etc. <i>Staphylococcus aureus</i> has been found under meringue when it was added to a cold filling.
Processed foods containing potentially hazardous ingredients	Includes processed meat products, sausage rolls, perogies, potato salad, mayonnaise salads and home canned antipasto and salsa, cabbage rolls, etc. Foods that have been processed and contain moisture are considered potentially hazardous and are more at risk from the growth of pathogens. The only exception is commercially canned potentially hazardous foods as they are sterilized during the commercial canning process.
Gravies, sauces, cream based soups	These low acid, moist, protein foods support the growth of disease causing organisms.
Cooked fruits, vegetables and cereals	Will support bacterial growth after cooking.

Some regional health authorities require that potentially hazardous foods sold at Alberta Approved Farmers' Markets be prepared in a facility permitted by the local health authority. Contact the public health inspector responsible for the specific Alberta Approved Farmers' Market for details.

Numerous hazards are associated with handling potentially hazardous foods, therefore:

- They must be refrigerated or frozen at all times
- They must be handled with considerable care since the potential for cross contamination with other products is greater
- When sampling these products, the length of time the samples are at room temperature must be carefully monitored so that the time/temperature rule is not abused

Potentially hazardous foods may be allowed for sale at some market venues and not others. It's important to check with the regional health authority responsible for each of your markets to determine their policy on selling potentially hazardous foods.



For more information on the regulations that pertain to selling food see Chapter 5: It's The Law and Chapter 6: It's the Law II.

Factors Contributing to Foodborne Illness

As you learned in Chapter 3: Bad Bugs, pathogenic bacteria are the most important biological foodborne hazard for you because they create the most serious problems.

Pathogens are disease causing microorganisms. The term bacterial or pathogenic growth means the organisms are multiplying and increasing in number. Pathogens thrive in warm, moist foods and can double their number every 20 minutes. A single pathogenic bacterium can multiply to more than 2 million in seven hours when the temperature is between 35°C and 45°C. The presence of pathogenic microorganisms usually does not change the look, smell or taste of food.

Table 5.2 Bacteria Growth Over Time

Time (hours)	Number of Bacteria
0.5	2
1.0	4
1.5	8
2.0	16
2.5	32
3.0	64
3.5	128
4.0	256
4.5	512
5.0	1024
5.5	2048
6.0	4096
6.5	8192
7.0	16 384
7.5	32 768
8.0	65 536
8.5	131 072
9.0	262 144
9.5	524 288
10.0	1 048 576

Table 5.2 illustrates the rapid growth of microorganisms. Within ten hours, two bacteria can develop into 1,048,576 – more than enough to cause foodborne illness.

Bacterial growth – an increase in the number of bacteria through division. Pathogens thrive in warm, moist foods and can double their number as quickly as every 20 minutes. A single pathogenic bacterium can multiply to more than 2 million in seven hours when the temperature is between 35°C and 45°C.

FAT TOM Grows Pathogens

Potentially hazardous foods held at warm temperatures provide ideal conditions for pathogen growth. They provide the nutrients as well as the low acid, oxygen rich, warm, moist environment that the pathogenic bacteria need. These conditions that pathogens require to grow are commonly referred to by the acronym FAT TOM which stands for: **F**ood, **A**cid, **T**ime, **T**emperature, **O**xygen and **M**oisture. Remove one or more of these factors and pathogen growth is significantly slowed or suspended.

Pathogens require several conditions to grow. They need a **F**ood source such as potentially hazardous or perishable foods. These foods contain the nutrients pathogens require to multiply.

Adequate Acidity or pH is critical. Microbes prefer neutral or slightly acid conditions. Pickling reduces the pH to a level unacceptable for microbial growth.

Pathogens need enough **T**ime to reproduce. The presence of a single bacterium will not make you ill. There needs to be a sufficient number of microorganisms present, the threshold level, in food to cause food poisoning.

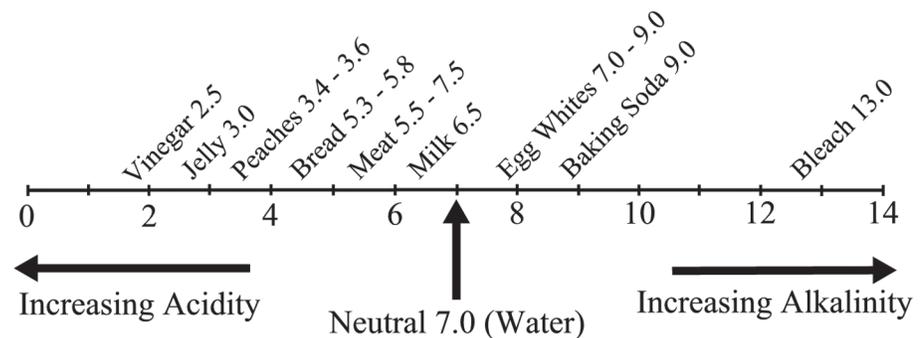


Figure 5.1 **pH Scale Showing the pH Levels of Some Common Foods**

Warm **T**emperatures are preferred. The danger zone includes those temperatures between 4°C and 60°C because at these temperatures pathogens grow and multiply rapidly. Failure to thaw frozen potentially hazardous foods at refrigerator temperatures, thoroughly cook potentially hazardous foods, cool cooked foods quickly and hold hot foods above 60°C or cold foods below 4°C are major causes of foodborne illness due to temperature abuse.

Most pathogens need sufficient **Oxygen**. Replacing oxygen with a vacuum or another gas stops the growth of many bacteria. However, a few such as the bacteria that cause botulism grow in the absence of oxygen.

Moisture is crucial. Microbes need moisture to absorb nourishment. The amount of water available to pathogens is known as water activity (A_w). The lower the water activity, the drier the food. Without an adequate supply of moisture, pathogens will not reproduce. Bacteria can grow in fluid milk but cannot grow in powdered milk because of its lower water activity. Drying food is one way to stop microbial growth. Dry herbs will last for months in the cupboard whereas fresh herbs will begin to deteriorate in days, even in the refrigerator. The high sugar content of jams and jellies ties up available moisture in these foods, thus limiting bacterial growth.

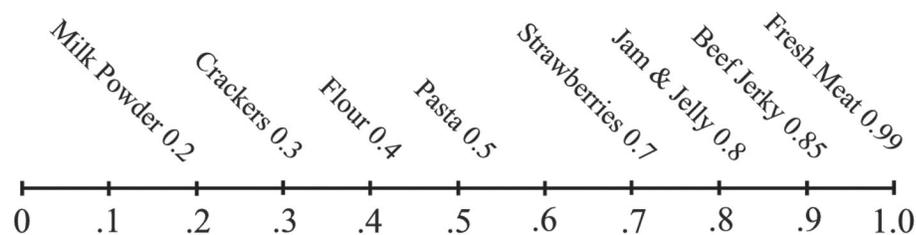


Figure 5.2 **Water Activity Scale Depicting the A_w of Some Common Foods**

pH – scale by which the acidity and/or alkalinity of a food is measured. The lower the pH number, the more acid is in the product. pH values range from 0 to 14. Potentially hazardous foods have a pH greater than 4.6 which favors growth of food poisoning organisms. The value for pure distilled water is 7, which is considered neutral.

Water activity – the amount of free water in the food that is available to pathogens. It is denoted by the symbol A_w . Pure water has a water activity of 1.0.

Table 5.3 **FAT TOM**

Food	All organisms need a source of energy to grow
Acidity	Pathogens grow in pH ranging from 4.6 to 9.0; very acid (sour) foods discourage bacterial growth
Time	Bacteria can double in number every 15 to 20 minutes
Temperature	The <i>Danger Zone</i> is 4°C - 60°C as pathogens grow fastest at these temperatures
Oxygen	The presence or absence of oxygen limits bacterial growth. Anaerobic bacteria cannot grow in the presence of oxygen while aerobic bacteria require oxygen to multiply
Moisture	As water becomes unavailable, bacteria cease to grow

Factors required for the growth of pathogens:

Food

Acidity

Time

Temperature

Oxygen

Moisture

These factors are necessary for bacterial growth. Eliminate one or more of these conditions and you can control pathogen growth.

Each food has its own pH or acidity. Within a food category such as fruit and specific food type, for instance lemons, there are pH ranges. Depending on the variety, lemons usually have a pH ranging from 2.0 to 2.2 while other fruits might have a pH closer to 5.0. Antipasto and salsas are categorized as potentially hazardous because the pH of the finished product is not in the low acid range even though these products contain higher acid ingredients such as vinegar and tomatoes. Potato salad is considered potentially hazardous for the same reason. The acidity of the commercial mayonnaise is not sufficient to bring the pH of the potato salad below 4.6.

Table 5.4 pH of Some Common Foods

pH	Food	Acidity
2.2	Lemons, limes and their juices	ACIDIC
3.5	Raspberries, strawberries	
4.0	Commercial mayonnaise, yogurt, jams, jellies, syrups, salad dressings	
5.0	Cheese, buttermilk	Pathogens grow best at pH levels above 4.6
5.5	Most vegetables, chili, bread	
6.3	Most meat, poultry, fish, butter	
6.4	Egg yolk	
7.0	Distilled water, milk, shrimp	NEUTRAL
8.5	Egg white, black olives	
10.5	Milk of magnesia	ALKALINE
13.0	Strong detergents, strippers	

Potentially hazardous foods such as meat, fish, poultry and dairy products are the most common sources of foodborne illness. Bacteria found on the animals and in their digestive tract can be transferred to the food products during slaughter and processing. Animal products are also rich in protein which is an important nutrient source for some bacteria. It **must** always be assumed that raw, potentially hazardous foods are contaminated with pathogens or disease causing microorganisms. The control of these pathogens usually occurs when the potentially hazardous foods are heat treated by cooking or pasteurization.

*Hazard + Right Conditions
= Foodborne Illness*

The danger zone represents the temperature range, from 4°C to 60°C, at which bacteria multiply rapidly. Foods should not be allowed to stay in this temperature zone for more than 2 hours.

The Danger Zone

As the number of pathogenic bacteria in the food increases, the risk of illness increases. Some of the bacteria may produce a toxin that if eaten can cause foodborne illness. Preventing pathogens from growing is a critical step in reducing the risk of foodborne illness.

The most powerful measure to inhibit growth of microbes is to control temperature. Usually this is done through proper refrigeration and cooking of potentially hazardous foods. Most pathogens are destroyed if the food reaches a high temperature for an adequate period of time which is generally one minute at 100°C. The centre of the food, not just the surface, must reach these high temperatures. If lower internal temperatures are recommended, a longer holding time at that temperature is required. It's essential to use a calibrated thermometer to ensure your food is cooked to the proper internal temperature. Potentially hazardous foods must be thawed, transported and stored out of the danger zone (between 4°C and 60°C).

Refrigeration and freezing do not kill pathogens in food; they only slow or stop microbial growth. It is crucial that you cool hot foods as quickly as possible to limit the amount of time spent in the danger zone.

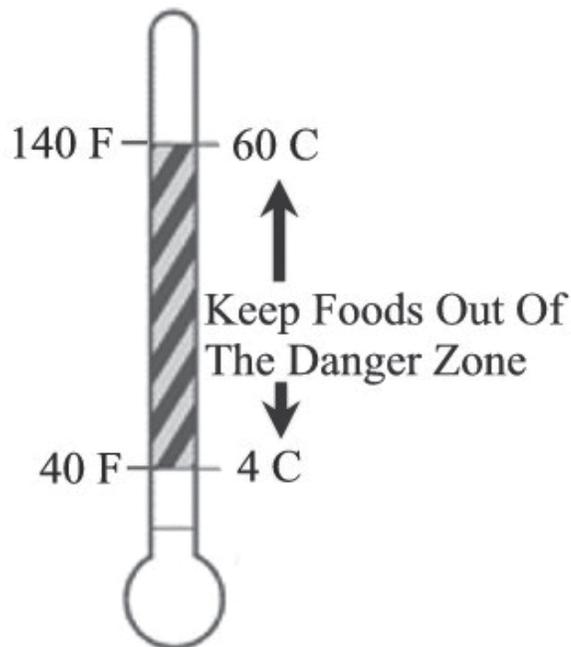


Figure 5.3 Keep Food out of the Danger Zone

Food is kept out of the danger zone temperatures to:

- Slow or stop microbial growth (4°C or colder)
- Destroy microbes present (60°C or hotter)

Time/Temperature Rule

Abuse of the time/temperature rule is the most likely condition to cause foodborne illness. Food can become unsafe quickly if held in the danger zone (above 4°C and below 60°C) for more than two hours. Remember the time food is held in the danger zone is cumulative so include all the time involved in purchasing, preparing, storing, transporting, serving and sampling your food.

You **must** store potentially hazardous foods at 4°C, displayed on ice or frozen. If potentially hazardous foods are stored on ice, ensure the temperature of the entire food item is below 4°C. Potentially hazardous foods intended for sampling may be held at room temperature but for no more than two hours, after which you **must** discard the samples.



It is important that freezers and refrigeration units are equipped with an accurate thermometer and the thermometer be calibrated as recommended. For more information see Chapter 12: Equipment.

Holding Temperatures

Freezers **must** operate at -18°C to ensure that the food is kept frozen. Refrigerators and coolers **must** be able to keep food out of the danger zone (4°C or below).

Use equipment with an accurate thermometer such as an electric fry pan, oven or toaster oven to cook and reheat food. Whole cuts of meat such as roasts, whole chickens or turkeys should be cooked at an oven temperature not less than 350°F in a conventional oven and 325°F in a convection oven. Cook poultry to an internal temperature of 74°C; all other meats should reach 71°C. Always reheat potentially hazardous food to a minimum temperature of 74°C. Once reheated, hot foods may be held at 60°C.

Refrigeration or freezing do not kill the pathogens that are present in food.

Following simple food preparation best practices will help you prevent foodborne illness:

- *Cook products using the proper time/temperature combination*
- *Rapidly cool cooked food to 4°C*
- *Maintain proper temperatures*

Talk to your public health inspector about hot holding at the market. The potential for growth of pathogenic bacteria is greater in reheated foods than in raw foods.

Temperature Control:

- **Hot holding: 60°C or hotter**
- **Freezing: -18°C or colder**
- **Refrigeration: 4°C or colder**

Is hot holding allowed at your Alberta Approved Farmers' Market?

If you are considering hot holding potentially hazardous foods at the farmers' market for sampling throughout the market day, check with your public health inspector first. Some regional health authorities do not allow hot holding. If it is allowed, follow the Food Retail and Foodservices Code requirement which states that, "potentially hazardous foods that have been cooked, then cooled to 4°C must be reheated to 74°C or higher in a manner that they will pass through the danger zone, 4°C to 60°C, as quickly as possible."

Reheated foods have a higher food safety risk because the potential for growth of pathogenic bacteria is greater in reheated foods than in raw foods. This is because spoilage bacteria, which inhibit the growth of pathogens by competition on raw products, are killed during cooking. Subsequent recontamination will allow pathogens to grow without competition if temperature abuse occurs.

Use a calibrated thermometer to monitor correct temperatures. Make sure thermometers are used in the proper spot such as inserted in the thickest part of the food. Take the temperature in several different places to ensure the entire food is heated thoroughly.

Food Storage

Once cooked, food must be cooled rapidly so it moves through the danger zone quickly. Remember, pathogens grow best at those temperatures between 4°C to 60°C. Potentially hazardous foods left at room temperatures for more than two hours provides the ideal conditions for microorganisms to multiply rapidly.



Proper food handling and food storage are key components of keeping food safe at the market. For more information see Chapter 10: Storage and Chapter 14: Food Handling.



Word Scramble

Complete the word scramble below to help you review the principles in this chapter. You will find the answers at the end of this chapter.

rhlbepeias	-----	1) Foods that have a shelf life of less than 90 days at room temperature
negthoap	-----	2) Disease causing life form that is too small to be seen by the naked eye
netolpaityl sdrazauoh oodf	----- ----- -----	3) Foods capable of supporting rapid and progressive growth of pathogenic microorganisms
ourf ot yxist	----- -- -----	4) Danger zone temperatures in degrees Celsius
meit	-----	5) A very important factor to consider when potentially hazardous foods are held at room temperature
iprad lgoconi	----- -----	6) When cooling hot food this can be done to help keep the food safe
ameptrurete nloortc	----- -----	7) A very important aspect of food safety, especially when storing and transporting potentially hazardous foods
arilonge lhteha tyhrotuai	----- ----- -----	8) All managers of farmers' markets should check with this authority to ensure that provincial regulations are being adhered to
siytx	-----	9) Hot food must be held at or above this temperature

Foodborne illness is preventable. You have a responsibility to ensure that your food is as safe as possible.

Preventing Foodborne Illness is Your Responsibility

Preventing foodborne illness is everyone's responsibility. It is estimated that 60 percent of foodborne illnesses may occur because of improper food handling by the consumer at home, so it's important that you provide your customers with information on transporting, handling and preparing their food purchases safely.

You might be thinking "No one has ever become sick on my food. I don't need to worry." Unfortunately, past performance is no guarantee that an incident won't happen in the future. How certain are you that you are doing everything you can to ensure the safety of your products and your market operation?

It is not the role of the public health inspector, Alberta Health and Wellness, Alberta Agriculture, Food and Rural Development or the Canadian Food Inspection Agency staff to prevent foodborne illness. They enforce the legislation that is in place to reduce the risk of a foodborne illness outbreak. They can help you identify and reduce food safety risks in your operation and food handling practices but ultimately *you* are responsible for marketing food safely.

Summary

The primary factors that promote the growth of pathogens and lead to foodborne illness are FAT TOM – a Food source, adequate Acidity, sufficient Time, warm Temperature, presence or absence of Oxygen and enough Moisture. Remove one or more of the conditions and pathogen growth is significantly slowed or suspended.

Most microbes multiply quickly under the right conditions. The longer potentially hazardous foods remain in the danger zone (4°C to 60°C), the greater the possibility that a food safety problem may occur.

You can prevent most foodborne illnesses by keeping potentially hazardous foods out of the danger zone and eliminating the FAT TOM factors that favor pathogen growth.

"I've had a long standing relationship with the same three inspectors over 15 years. They tell me what they need and I try to comply. I don't question what they tell me nor am I confrontational in any way. They are there to help us." Jackie Lacey, Millarville Farmers' Market

Market Manager Responsibilities

As a manager of an Alberta Approved Farmers' Market, you are responsible for the safety of the food sold at your market. You need to take measures to prevent food safety problems at your market.

Build a good working relationship with your public health inspector. Talk to the inspector on a regular basis and get to know new ones as soon as they are assigned to your market. Walk through the market with them and ask them to help you identify and reduce food safety risks in your market. Make sure your vendors understand and implement food safety best practices in their market operations. Remind them to use the Market Start Up and Weekly Food Safety Checklists for Market Vendors to identify areas requiring improvement.

In the words of a manager at an Alberta Approved Farmers' Market, "The manager needs to create and develop a strong cooperative and positive relationship between the regional health authority and the market. He needs a good understanding of the food regulations and legislative requirements. She should educate the vendors about the regulations and suggest actions for compliance where required. He should include these requirements in the general policies of the market and work with the committees of the market to make sure these standards are followed. Finally, the manager must police the implementation of market policies."



The Food Safety Checklist series for farmers' market vendors and managers can be found in Appendix M. Tear pads of the weekly and startup *Checklists* may be ordered from the AAFRD Farmers' Market Specialist. Call (780) 427-4514 to order. Dial 310-0000 for toll free access.

"As soon as I got the Food Safety Checklists I made sure each of my vendors had one. I told them that as an Alberta Approved Farmers' Market it's very important that we keep up the good reputation that the market has. We work together. My vendors use their checklists and when I go through the market with my own checklist, I help them as well." Sonia Meyer, Lethbridge Farmers' Market

What's Next

Do milk and farm cream sold from the farm or at a farmers' market need to be pasteurized? Do you as a farmers' market vendor need a food establishment permit? Ignorance is no excuse when it comes to food safety. Regulations are in place to reduce the risk of a foodborne illness outbreak. Do you know and follow the regulations for all your market practices? Turn to Chapter 6: It's the Law and Chapter 7: It's the Law II to answer these questions and more.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food and Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.

Answers to Word Scramble Exercise

- 1) Perishable
- 2) Pathogen
- 3) Potentially hazardous food
- 4) Four to sixty
- 5) Time
- 6) Rapid cooling
- 7) Temperature control
- 8) Regional health authority
- 9) Sixty



Chapter Review

Take a few minutes to review the chapter and answer True or False to the following statements.

1. The presence of pathogenic microorganisms changes the look, smell and taste of the food. _____
2. “Potentially hazardous” means any food that is capable of supporting the growth of pathogenic microorganisms or the production of toxins. _____
3. All pathogens require oxygen for growth. _____
4. Refrigeration kills pathogens. _____
5. A farmers’ market manager has no responsibility for the safety of the food at the market. _____
6. Food kept at temperatures from 4°C to 60°C is in the danger zone. _____

Answers to Chapter Review

- 1) **False**, pathogens have no effect on the appearance, taste, or smell of food. This is caused by spoilage organisms which affect quality not safety
- 2) **True**
- 3) **False**, the organism that causes botulism does not require oxygen to grow
- 4) **False**, refrigeration and freezing suspend or stop the growth of pathogens. The pathogens are still alive and will continue to grow again under the right temperature
- 5) **False**, the market manager has the responsibility to monitor vendors to ensure they are adhering to the legislation and handling foods safely
- 6) **True**

Chapter 6:

It's the Law!

Learning Objectives

After completing this chapter, you will be able to:

- Describe the federal and provincial legislation that applies to food products
- Identify the regulatory agencies that govern the sale of food at Alberta Approved Farmers' Markets
- Outline the different responsibilities of the Canadian Food Inspection Agency (CFIA) and regional health authorities (RHA) in Alberta
- Explain how the *Public Health Act* regulates Alberta Approved Farmers' Markets
- Describe the legislation and regulations that apply to products made and sold in Alberta and interprovincially

Chapter 6: It's the Law!



Pam and Liane Expand Their Operation

Pam and Liane prepare the preserves and pickles sold at the year round urban market in a community hall that is about 25 kilometers (15 miles) from their farm. They use the hall because it has a food establishment permit from the regional health authority. This allows Pam and Liane to sell their products anywhere in Alberta.

However, it is expensive and time consuming to haul their ingredients and supplies to the hall and transport the finished products home for storing. As demand for their processed products increases, they realize they can afford to build a small processing facility on the farm. They develop a basic design and start working with their public health inspector. Pam and Liane discover that having their own permitted facility allows them to increase their production so they can sell pickles and preserves at all their Alberta markets.



Heidi's Labelling Improves Her Marketing Advantage

In talking to the public health inspector, Heidi learns that she can supply pies to the teahouse only from a permitted facility. She wonders whether she should build her own facility or produce her pies at the local community hall that is already permitted by the local regional health authority. She analyzes her situation to determine the best scenario for her business while complying with the law.

The public health inspector suggests there may be federal rules that she needs to be aware of as her business expands. Heidi checks out the Canadian Food Inspection Agency website and discovers that there are rules about labelling and packaging. Heidi calls a provincial marketing specialist for help and learns that following the labelling rules gives her a marketing advantage. Even better, the labels can be printed easily on her computer.



Research and follow all the regulations that pertain to your farmers' market or farm direct business from production through processing and marketing. This resource discusses only those that pertain to food safety when farm direct marketing. Consult with the public health inspector at the regional health authority before starting any business that involves food.

Legislation and Related Regulations

There are numerous regulations and requirements that you must follow to sell food products directly to consumers through Alberta Approved Farmers' Markets, direct to restaurants or through other farm direct marketing channels. This resource discusses only those regulations pertaining to food safety. It is up to you to research and follow **all** the regulations that pertain to your business.

Speak to the public health inspector at the regional health authority before starting any business that involves food. Producers and processors should be aware that laws, regulations, codes and standards are treated very seriously; failure to comply can result in serious fines and imprisonment.

Government Roles

Government agencies have specific roles with regard to food safety:

- Health Canada establishes standards for the safety and nutritional quality of foods sold in Canada
- The Canadian Food Inspection Agency (CFIA) enforces those standards by being the agency responsible for all federal inspection services related to food, animal health and plant protection
- The Government of Alberta establishes provincial statutes that complement the federal legislation and ensure food safety for products under provincial jurisdiction
- Inspectors from the regional health authorities and Alberta Agriculture, Food and Rural Development (AAFRD) enforce this legislation

Knowing which federal and provincial legislation applies to your farm direct marketing operation or Alberta Approved Farmers' Market is crucial. Inspectors from the CFIA and regional health authorities have an educational as well as an enforcement role. They will help you understand and comply with the legislation, ensuring a safe food supply for all consumers.

Relationship Building

It is important to build working relationships with the CFIA and public health inspectors who will be inspecting and approving your facilities and/or products. As you develop your product, contact the appropriate inspectors for advice on the regulations you need to meet for your business and vehicles, as well as at the Alberta Approved Farmers' Market(s) or other farm direct marketing venues at which you are planning to sell. If you are selling in a region other than the one in which you produce, you will probably need to develop a relationship with those inspectors as well. Be aware that each regional health authority can establish standards in addition to those set out in the Food and Food Establishments Regulation.

This resource will help you determine who to contact for assistance. Introduce yourself to the federal and provincial inspectors. Inspectors can help you comply with the law and are a valuable business resource.

The CFIA staff provides a free consultation service including advice, interpretation and direction on how the federal legislation impacts your farm direct operation or Alberta Approved Farmers' Market. Contact the CFIA at (780) 495-3333 (Edmonton) or (403) 292-4650 (Calgary).

Farm Direct Marketer Responsibilities

As a farm direct marketer, you need to know:

- Federal legislation and applicable regulations that apply to your business
- Provincial legislation and applicable regulations that apply to your business
- Different legislation that sometimes applies to each marketing channel (i.e., Alberta Approved Farmers' Market, farm gate, restaurant, etc.), even when the product is the same
- Different legislation that sometimes applies to each selling point (health regions, province, out of province), even when the product is the same



Food Safety Plan – Legislation

Now is the time to start developing your food safety plan. You can use a binder with dividers or whatever system works best for you. Create a section for Legislation and Regulations. Make a list of all the regulations that apply to your business and update annually. Use this list as a checklist when training staff.

Staff Training

All staff should be aware that your business must meet certain legislative requirements. Staff working in critical roles must be trained to ensure that your operation complies with the law.



Think about how you can remind staff about the pertinent rules and regulations (for example, regular reminders at staff meetings or posting on a bulletin board).

Managers of farmers' markets need to ensure that the market and vendors comply with federal and provincial legislation.

Market Manager Responsibilities

As an Alberta Approved Farmers' Market manager you are responsible for ensuring that all vendors are complying with the appropriate legislation at all times. To meet your responsibility:

- Know all the federal and provincial legislation that applies to the products being sold in your market
- Develop operational guidelines that incorporate the regulations associated with the different pieces of legislation. Ensure all vendors know the guidelines. Personally inspect vendors' tables, etc. to ensure compliance
- Work closely with your public health inspector to ensure that the requirements of the *Public Health Act* and the Food and Food Establishments Regulation are met regarding the sale of food at an Alberta Approved Farmers' Market
- Ensure that a food establishment permit is obtained for the market every year

Food Safety Process Control Systems

Consumers are looking for assurances that their food is being produced in a safe manner. In response to this consumer demand, industry and governments are working together to develop process control systems that address food safety. These systems are based on the principles of Hazard Analysis Critical Control Point. Food safety process control systems focus on preventing hazards rather than detecting problems during inspection of the end products.

There are three major programs that can help you provide consumers the assurance they are seeking.

On-Farm Food Safety (OFFS) Programs

OFFS programs help create a proper operational environment for food safety through the implementation of Good Production Practices (GPPs) on the farm. These types of practices can be applied to any type of agricultural production operation. The keys are:

- A thorough knowledge of the hazards and risks on the farm
- A good understanding of the GPPs recommended for the commodity and type of farming operation
- An effective written plan for the individual farm

Commodity associations are in varying stages of developing new codes of practice and programs for OFFS. These national standards programs are voluntary and are being managed by producer groups.



For information on OFFS programs, visit [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs4361?OpenDocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs4361?OpenDocument) or contact the provincial commodity association for information on the OFFS program for the specific commodity.

Hazard Analysis Critical Control Point (HACCP)

The HACCP system is a proactive program that is internationally recognized as an effective approach to food safety in processing facilities. HACCP requires an assessment of what food safety problems can occur at any stage of the process. Control measures are then identified to prevent, reduce or eliminate these hazards to an appropriate level to avoid adverse human health consequences. While HACCP is still voluntary, many companies are choosing to develop and implement a HACCP program. Implementing such a program shows due diligence in product manufacturing, meets consumer demands and gains access to markets with HACCP requirements.

Currently, the OFFS program and HACCP are voluntary. FSEP is mandatory for federally registered meat and poultry establishments. It is voluntary for the remaining federal establishments but the CFIA is moving towards mandatory implementation for all federally registered facilities.

The Food and Drugs Act applies to all food, drugs and cosmetics sold in Canada and is paramount over all other food-related legislation.

Food Safety Enhancement Program (FSEP)

FSEP is the Canadian Food Inspection Agency's approach to encourage and support the development, implementation and maintenance of HACCP systems in all federally registered establishments of the meat, dairy, honey, maple syrup, processed fruit and vegetable, shell egg, processed egg and poultry hatchery sectors. The core of FSEP is the internationally recognized General Principles of Food Hygiene which consists of prerequisite programs and HACCP.

Federal Legislation

Four pieces of legislation apply to food products:

- *Food and Drugs Act*
- *Canada Agricultural Products Act*
- *Consumer Packaging and Labelling Act*
- *Fish Inspection Act*

Food and Drugs Act

The *Food and Drugs Act* is the primary legislation that applies to all food, drugs and cosmetics sold in Canada (imported or domestic). It is paramount over all other food-related legislation, both federal and provincial. This legislation describes provisions related to product composition, minimum health, safety and facility standards as well as provisions preventing fraud or deception in the labelling, composition, packaging, treatment, processing, sale and advertising of food. The CFIA Food Safety and Fair Label Practices Program enforces the act.

The *Food and Drugs Act* defines the following:

Food – “any article manufactured, sold or represented for use as food or drink for human beings, chewing gum, and any ingredient that may be mixed with food for any purpose whatsoever.”

Label – “any legend, word or mark attached to, included in, belonging to or accompanying any food, drug, cosmetic, device, or package.”

Package – “any thing in which any food, drug, cosmetic or device is wholly or partly contained, placed or packed.”

Sell – “offer for sale, expose for sale, have in possession for sale and distribute, whether or not the distribution is made for consideration.”

Part I of the *Food and Drugs Act* deals specifically with food, drugs, cosmetics and devices. The following are the sections of the *Food and Drugs Act* pertaining to food. Note that these are not the only sections of the act and corresponding regulations that might impact your business.

4. *No person shall sell an article of food that*
 - (a) *has in or on it any poisonous or harmful substance;*
 - (b) *is unfit for human consumption;*
 - (c) *consists in whole or in part of any filthy, putrid, disgusting, rotten, decomposed or diseased animal or vegetable substance;*
 - (d) *is adulterated; or*
 - (e) *was manufactured, prepared, preserved, packaged or stored under unsanitary conditions.*
5. (1) *No person shall label, package, treat, process, sell or advertise any food in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character, value, quantity, composition, merit or safety.*
 - (2) *An article of food that is not labelled or packaged as required by, or is labelled or packaged contrary to, the regulations shall be deemed to be labelled or packaged contrary to subsection (1).*
6. (1) *Where a standard for a food has been prescribed, no person shall*
 - (a) *import into Canada,*
 - (b) *send, convey or receive for conveyance from one province to another; or*
 - (c) *have in possession for the purpose of sending or conveying from one province to another any article that is intended for sale and that is likely to be mistaken for that food unless the article complies with the prescribed standard.*
 - (2) *Paragraphs (1)(b) and (c) do not apply to an operator of a conveyance that is used to carry an article or to a carrier of an article whose sole concern, in respect of the article, is the conveyance of the article unless the operator or carrier could, with reasonable diligence, have ascertained that the conveying or receiving for conveyance of the article or the possession of the article for the purpose of conveyance would be in contravention of subsection (1).*

The Food and Drug Regulations of the Food and Drugs Act ensure the provisions of the act are put into effect.

- (3) *Where a standard for a food has been prescribed, no person shall label, package, sell or advertise any article that*
 - (a) *has been imported into Canada,*
 - (b) *has been sent or conveyed from one province to another;*
or
 - (c) *is intended to be sent or conveyed from one province to another in such a manner that it is likely to be mistaken for that food unless the article complies with the prescribed standard.*

6.1 (1) *The Governor in Council may, by regulation, identify a standard prescribed for a food, or any portion of the standard, as being necessary to prevent injury to the health of the consumer or purchaser of the food.*

- (2) *Where a standard or any portion of a standard prescribed for a food is identified by the Governor in Council pursuant to subsection (1), no person shall label, package, sell or advertise any article in such a manner that it is likely to be mistaken for that food unless the article complies with the standard or portion of a standard so identified.*

7. *No person shall manufacture, prepare, preserve, package or store for sale any food under unsanitary conditions.*

If you are creating or selling cosmetics, you must be in compliance with the Cosmetics sections of the *Food and Drugs Act* and the *Food and Drug Regulations*. The regulations prescribe the standards of composition, strength, potency, purity, quality or other properties pertinent to the referred product.

Canada Agricultural Products Act

The Canada Agricultural Products Act regulates the marketing of agricultural products for import, export and interprovincial trade.

The *Canada Agricultural Products Act* regulates the marketing of agricultural products for import, export and interprovincial trade. It also provides for national standards and grades of agricultural products, their inspection and grading, the registration of establishments and standards governing establishments. This act, along with the *Food and Drugs Act*, defines the standard for selling food outside the province of origin.

If you are selling interprovincially, your food establishment **must** be inspected and approved by the CFIA under the appropriate regulation of the *Canada Agricultural Products Act*:

- Dairy Products Regulations
- Egg Regulations
- Fresh Fruit and Vegetable Regulations
- Honey Regulations
- Licensing and Arbitration Regulations
- Maple Products Regulations
- Processed Egg Regulations
- Livestock and Poultry Carcass Grading Regulations
- Processed Products Regulations



All federal legislation and related regulations can be obtained from the Department of Justice Canada at canada.justice.gc.ca/en/



Determining Appropriate Regulations

Using the above list, write down the regulations that apply to your business.

Review the food safety regulations that apply to you at www.inspection.gc.ca/english/reg/rege.shtml

The Consumer Packaging and Labelling Act and Regulations deal with the packaging, labelling, sale, importation and advertising of food and non-food products.

Honey Regulations

The *Canada Agricultural Products Act* and the Honey Regulations deal with the import, export or interprovincial trade of honey. The CFIA “ensures that any honey or honey products leaving CFIA inspected establishments, or any honey imported into Canada, is safe, meets standards and is appropriately labelled.” Honey must be graded, packaged and labelled according to the regulations, including indication of floral source. For example, when labelled correctly, a honey jar labelled ‘Saskatoon Honey’ is not honey flavored with fruit from saskatoons but honey produced from bees foraging on saskatoon plants.

Consumer Packaging and Labelling Act

The *Consumer Packaging and Labelling Act* and the Consumer Packaging and Labelling Regulations deal with the packaging, labelling, sale, importation and advertising of prepackaged consumer goods. They also specify the net quantity requirement in food labeling. Division 1 of the Food and Drug Regulations under the *Food and Drugs Act* establishes all other labelling requirements.

The Food and Drug Regulations and Consumer Packaging and Labelling Regulations together set standards to inform consumers about the quality, nutritional content, safety and ingredients in a product, as well as net quantity and accuracy in advertising. The CFIA enforces Canada’s packaging and labelling laws, checking labels for honesty and accuracy.

You **must** label all prepackaged products according to federal regulations as laid out in the *Food and Drugs Act* and the *Consumer Packaging and Labelling Act* (see Figure 6.1). The details you provide on the label depend on the type of food and marketing channel. All food labels must include the information below.

The *Consumer Packaging and Labelling Act* defines the following:

Label – “any label, mark, sign, device, imprint, stamp, brand, ticket or tag.”

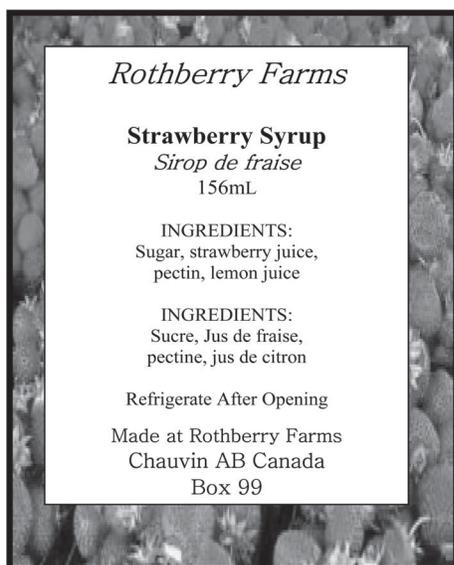
Prepackaged product – “any product that is packaged in a container in such a manner that it is ordinarily sold to or used or purchased by a consumer without being re-packaged.”



Label Information Checklist

Review one of your labels. Use the following checklist to determine if anything is missing. If the label is incomplete, consider changing it.

- Common name of the product
- Net quantity (metric)
- Contact information (business name and address to ensure postal delivery). Supplementary information such as e-mail address, 1-800 number or other contact details is recommended but not required.
- List of ingredients in descending order of amount; include water, artificial flavors, preservatives, etc. Food used as ingredients in other foods must be listed in their component ingredients.
- Durable life date if shelf life is 90 days or less
- Storage instructions (if required)
- “Previously frozen” identification on meat, poultry, fish and their byproducts as specified in the Food and Drug Regulations Division 1 section B.01.080
- Bilingual language, unless specifically exempt
- Nutrition labelling (Exemptions may exist for some small processors until December 12, 2007. If making a health claim, nutrition labelling **must** be included.)



- ❖ Name of responsible party
 - ❖ Common name of product (Bilingual unless exempt)
 - ❖ Net quantity declaration
 - ❖ List of ingredients in descending order of amount
 - ❖ Storage instruction, including a durable life date if shelf life is less than 90 days
 - ❖ Durable life date
 - ❖ Address of responsible party
 - ❖ Nutritional information when required
- Common name, net quantity, name and address have minimum type size requirements of 1.6mm based on the lower case “o”*

No food products, including those sold at Alberta Approved Farmers’ Markets, are exempt from the Food and Drugs Act and the Consumer Packaging and Labelling Act and regulations.

Food label is based on the Consumer Packaging and Labelling Act and the Food and Drugs Act.

Figure 6.1 Example of Food Label



*If you are planning to sell your products in a municipality that is non-adjacent to your home municipality, you must follow the stipulations set out in the **Food and Drugs Act and related regulations including the requirements for bilingual labels.***

Basic labelling information can be found in the 2003 Guide to Food Labelling and Advertising Chapter 2 at www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml

Nutrition labelling is found in the 2003 Guide to Food Labelling and Advertising Chapters 5 through 8 at www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml

Contact either of the CFIA regional offices, Fair Labelling Practices Program for information on food labelling or nutrition labelling. Call (780) 495-3333 (Edmonton) or (403) 292-4650 (Calgary).

Weights and Measures Act

The *Weights and Measures Act*, administered by Industry Canada, requires that you use approved scales, of appropriate size for your operation. Measurement Canada performs the initial inspection of scales and will set up a maintenance and calibration schedule for the scale based upon use of that scale. For example, a scale being used at home will likely have a different maintenance schedule than a scale that is transported to the farmers' market every week. The market scale needs to be calibrated more frequently because transporting it affects the internal mechanisms that impact its accuracy.

UPC Code

The UPC code is an industry standard required by most retail markets, including large on-farm retail stores. Information is available from GS1 Canada (www.gs1ca.org) or the Food and Consumer Products Manufacturers of Canada (www.fcPMC.com).

Fish Inspection Act

The *Fish Inspection Act* and Fish Inspection Regulations deal with the interprovincial marketing and export of fish, fish products and marine plants as well as the import of all fish and fish products into Canada. The act sets criteria for the inspection of fish and marine plants. The regulations lay out the requirements for the inspection of processed fish and processing establishments. Only inspected fish may be sold. Fish and fish products **must** be processed in a registered establishment. The CFIA administers and enforces Canada's fish inspection legislation.

The *Fish Inspection Act* and Regulations are designed to verify that fish and fish products and marine plants are harvested, transported and processed under conditions that meet national and international standards of wholesomeness, composition, packaging and labelling. Fish is defined as any fish, including shellfish, crustaceans, marine animals, and any of their parts, products or byproducts. Processing includes cleaning, filleting, icing, packing, canning, freezing, smoking, salting, cooking, pickling, drying or preparing fish for market in any other manner.



Canada's National Fish and Fish Products Inspection and Control System document provides a summary of the *Fish Inspection Act* and Regulations and can be found at www.inspection.gc.ca/english/anima/fispoi/natcane.shtml#1.2.

The Fish Inspection Act and Regulations deal with the interprovincial marketing, import and export of fish, fish products and marine plants.

The Food and Food Establishments Regulation governs the operation of all food establishments in Alberta. If you are selling processed food products from your farm store, to retail or food service establishments or other venues, you must obtain a food establishment permit. A permit is not required if you are only selling your own fresh produce.

Provincial Legislation

Provincial statutes complement federal legislation and ensure food safety for products under provincial jurisdiction. Federal legislation overrides all provincial legislation.

Four pieces of provincial legislation apply to the safety of food products:

- *Alberta Public Health Act*
- *Livestock and Livestock Products Act*
- *Vegetable Sales (Alberta) Act*
- *Dairy Industry Act*

Alberta Public Health Act

The *Alberta Public Health Act* prevails over all other provincial statutes except the *Alberta Bill of Rights*. All food produced and sold in Alberta falls under the federal *Food and Drugs Act* as well as the *Alberta Public Health Act*. If you sell outside Alberta, you **must** comply with the legislation for that location as well as all applicable federal legislation.

The *Public Health Act* Food and Food Establishments Regulation defines the following:

Food – “any substance, including water and ice, intended for use in whole or in part for human consumption, but does not include a drug, medication or health related product regulated under the *Pharmaceutical Profession Act* or the *Food and Drugs Act* (Canada).”

Food establishment – “premises where food that is intended for consumption by the public is served, offered for sale, displayed, processed, packaged, stored or handled.”

The first step in developing your food business is to check with your local regional health authority for the requirements in opening and operating a food establishment. All food establishments are required to operate in accordance with the Food and Food Establishments Regulation under the *Public Health Act*. In some circumstances in order to operate a food establishment, a food establishment permit is required (Part 1 of the Food and Food Establishments Regulation). Permit fees range from no cost to \$500 per year depending on the operation. Permits must be conspicuously displayed.

Parts 2 and 3 of the Food and Food Establishments Regulation provide information regarding permitted facilities such as how they need to be constructed, operated and maintained. If you sell your food products through any venue other than an Alberta Approved Farmers' Market, you must follow Parts 2 and 3 of the Food and Food Establishments Regulation.

If you are selling processed food products from your farm store, to retail or food service establishments or other venues, you **must** obtain a food establishment permit. A permit is not required if you are only selling your own fresh produce.



For more information on the Food and Food Establishments Regulation, visit

www.qp.gov.ab.ca/documents/Regs/2003_328.cfm?frm_isbn=0779732154&type=htm

There is an important difference between selling at an approved farmers' market and selling at any other venue. Food vendors selling at Alberta Approved Farmers' Markets have unique status under the Food and Food Establishments Regulation. However, food products sold at all other venues, such as public markets, flea markets and farm stores are subject to different rules. Farm direct marketers should contact their regional health authority for specific information.

If a farm direct marketer or Alberta Approved Farmers' Market vendor is selling interprovincially, the food establishment will need to be inspected and approved by the CFIA.

Regional Health Authorities

Under public health provisions, the regional health authorities (RHAs) can take any action to eliminate a health risk. The nine regional health authorities in Alberta enforce the *Public Health Act* and its regulations (see Figure 6.2 Regional Health Authorities).

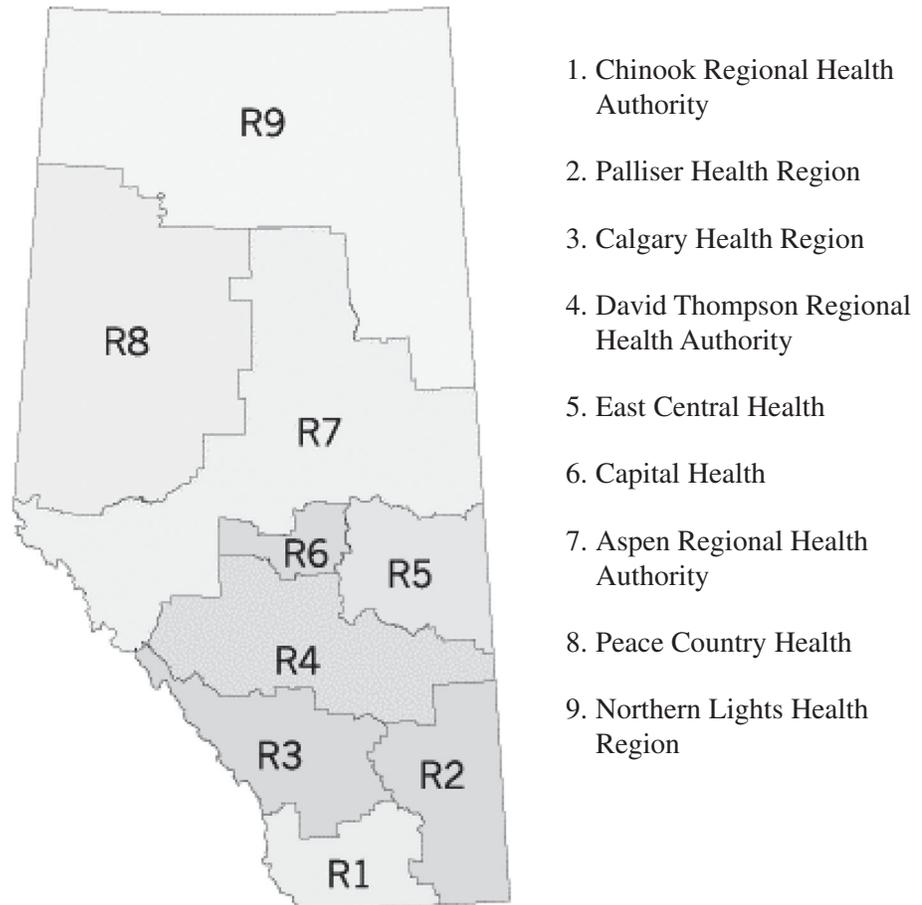


Figure 6.2 **Regional Health Authorities**



For a complete listing of all the towns and contact information in each health region, refer to www.health.gov.ab.ca/regions/map_lookup.htm



Your Regional Health Authority Contacts

Call the regional health authority office listed on the web page for information on how to reach the appropriate public health inspector.

From the map, identify your health region. _____

Go to the website listed above and write down the contact information for your health region. _____

Phone the health region to find the contact information of the public health inspector for your location.

What other health regions do you need to contact? _____

Alberta Approved Farmers' Markets

Alberta Approved Farmers' Markets provide a unique market opportunity to sell homegrown produce, processed food (restrictions do apply) and handcrafted products directly to consumers. Farmers' markets often serve as business incubators or test markets for start-up processors.



Look for the Sunny Girl logo at Alberta Approved Farmers' Markets.

The *Public Health Act* Food and Food Establishments Regulation defines:

Farmers' market – “a food establishment whose proposed operation by a person or group of persons has been approved by the Minister responsible for agriculture as an approved farmers' market program under the administration of that Minister's Department.”

Potentially hazardous food – any food that is capable of supporting the growth of pathogenic microorganisms or the production of toxins, has a pH greater than 4.6 and a water activity (A_w) of 0.85 or more.

No food products, including those sold at Alberta Approved Farmers' Markets, are exempt from the Food and Drugs Act and the Consumer Packaging and Labelling Act and regulations.

Regional health authorities can establish additional standards to those set out in the Public Health Act and Food and Food Establishments Regulation. Contact your local public health inspector for more information.

Regional health authorities have detailed requirements for Alberta Approved Farmers' Markets and food vendors at the markets in their area. If you plan to sell at different farmers' markets, check the requirements for each location and expect to meet requirements for:

- Safe handling and preparation of foods
- Selling potentially hazardous foods
- Home canned foods
- Protection of foods
- Storage and sanitation
- Transportation
- Food handler hygiene
- Food samples

According to the Food and Food Establishments Regulation, vendors at Alberta Approved Farmers' Markets are allowed to produce non-perishable and non-hazardous products such as certain baked goods, jams, jellies and pickles in their home kitchens.

Some regional health authorities require that potentially hazardous foods sold at approved farmers' markets be prepared in a facility permitted by the local health authority. Contact the public health inspector responsible for the specific approved farmers' market for details on the requirements for the preparation of all foods. You do not require a food establishment permit to distribute free individually portioned samples of your food products.

Regional health authorities can establish additional requirements to those set out in the Food and Food Establishments Regulation. A number of regional health authorities now require all food establishments to be permitted, regardless of where the product is being sold. If you are selling at more than one Alberta Approved Farmers' Market, or if the market is located in a different health region than your residence, you will be required to meet the guidelines of the health region with the highest standards. Check with the public health inspector for local standards.

Alberta Approved Farmers' Markets are issued food establishment permits. Since the permit is issued for the market itself, the regulations stipulate certain protocols must be followed for that permit to be retained. As the permit holder, the market accepts all risks and liabilities associated with food safety issues. For this reason, Alberta Approved Farmers' Markets are required to carry liability insurance; many markets require vendors to have individual insurance as well.

A permitted facility, often known as a commercial kitchen, is one that has been constructed according to the regulations set out in Part 2 and operated and maintained in accordance with the regulations set out in Part 3 of the Public Health Act Food and Food Establishments Regulation.

Alberta Approved Farmers' Markets and vendors are exempt from Parts 2 and 3 unless the RHA has established additional standards. Alberta Approved Farmers' Markets are dealt with specifically under Part 4 of the *Public Health Act Food and Food Establishments Regulation*.

Part 4

Farmers' Markets

Interpretation for Part 4

34. *In this Part,*
- a. *“market permit holder” means the holder of a permit issued or renewed under section 4(4);*
 - b. *“stallholder” means a person who rents space at a farmers' market.*

General building requirements

35. *Except where the Alberta Building Code provides otherwise, a market permit holder shall ensure*
- a. *that the farmers' market is supplied with hot and cold running water that is safe for human consumption and available in quantities sufficient to meet the needs of the farmers' market, and*
 - b. *that toilet and handwashing facilities of a design and in a number sufficient to meet the needs of the farmers' market are provided*
 - i. *at the location of the farmers' market, or*
 - ii. *at a nearby location through agreement with another person.*

Regular duties of market permit holders

36. (1) *A market permit holder shall ensure that*
- a. stallholders' spaces are clean and sanitary,*
 - b. counters and display areas in stallholders' spaces are finished in or covered with a material that is easily cleaned,*
 - c. stallholders' spaces are cleaned at the end of each business day,*
 - d. there are sufficient refuse containers to service the customers visiting the farmers' market, and*
 - e. there is sufficient removal of refuse at the end of each business day.*
- (2) *A market permit holder shall ensure that adequate clean-up equipment is provided for the use of stallholders.*

Sale or offer for sale by stallholders

- 37 (1) *A stallholder shall not sell or offer for sale*
- a) uninspected meat,*
 - b) home-canned food other than jam, jelly and pickles,*
 - c) potentially hazardous food, other than whole raw shell poultry eggs, unless it is held at a temperature of not more than 4°C and not less than 60°C, or*
 - d) home prepared food unless it is protected in a manner adequate to prevent customer handling and contamination.*
- (2) *A stallholder shall not offer for sale whole raw shell poultry eggs unless they are stored at a temperature not exceeding 7°C.*
- (3) *The market permit holder shall ensure that stallholders comply with this section.*

Livestock and Livestock Products Act

Under the *Livestock and Livestock Products Act*, there are two regulations that apply to farmers' market vendors:

- Purchase and Sale of Eggs and Processed Egg Regulation (see Chapter 7 for details)
- Honey Grading Regulation

Honey Grading Regulation

This regulation applies to honey produced in Alberta that is to be sold in Alberta.

A beekeeper who sells honey directly to a consumer at the beekeeper's honey house or residence or at a farmers' market shall ensure that the container in which the honey is sold

- a) displays the name and address of the beekeeper, and*
- b) shows the net weight of the contents*

Honey sold directly to the consumer at your honey house or residence or at an Alberta Approved Farmers' Market does not have to be graded. It must be fit for human consumption and free of foreign material.

Vegetable Sales (Alberta) Act

The *Vegetable Sales (Alberta) Act* defines grade standards, packaging requirements and inspection authority for the marketing of fresh vegetables in Alberta.

The *Vegetables Sales (Alberta) Act* Grades, Packages and Fees Regulation states that this regulation does not apply to vegetables sold directly to a consumer at an Alberta Approved Farmers' Market, the producer's farm or another location such as a restaurant. However, if a producer is having vegetables graded or packaged to sell into another outlet where the buyer is not the end consumer, that is, a retail outlet, the regulations must be adhered to.

Dairy Industry Act and Dairy Industry Regulation

It is unlawful to sell or give away unpasteurized milk. Pasteurized milk is considered to be processed. Cheese does not have to be pasteurized as long as it has been manufactured in compliance with the *Food and Drugs Act*.

You must cool milk and farm separated cream to 4°C immediately after pasteurization. In the case of batch pasteurization, you must achieve cooling to 4°C within one hour. You must keep all dairy products requiring refrigeration, including cheeses with a moisture content of 36 percent or higher, at a temperature of not less than 1°C and not more than 4°C.

The Honey Grading Regulation applies to honey produced and sold in Alberta.

Vegetables sold directly to a consumer at an Alberta Approved Farmers' Market, producer's farm or another location such as a restaurant do not have to be graded or packaged according to the Vegetable Sales (Alberta) Act.

It is unlawful to sell or give away unpasteurized milk in Alberta.

All dairy production and processing facilities in Alberta, regardless of volume, must be inspected and licensed. The Regulatory Services Division of Alberta Agriculture, Food and Rural Development administers regulatory functions pertaining to the Dairy Industry Act and the National Dairy Code. Small dairy processors require a food establishment permit.

All dairy production and processing facilities, regardless of volume, are subject to inspection. The Regulatory Services Division of AAFRD administers and enforces the *Dairy Industry Act* and Regulation.

If you produce and sell fluid goat or sheep milk in Alberta, you must obtain a producer's license issued by AAFRD. There is no quota requirement for goat or sheep milk.

If you produce less than 50 litres per day of cow's milk for sale, you require a producer's license from AAFRD. If you produce more than 50 litres per day of cow's milk for sale, you must be licensed with Alberta Milk. Before any license to produce is issued, an inspector from AAFRD is required to complete a pre-license inspection of your dairy production buildings and equipment.

If you process (pasteurize) less than 50 litres per day of cow, sheep or goat milk for sale, you must also contact your public health inspector for an inspection and obtain a food establishment permit. If you process for sale more than 50 litres per day of goat or sheep milk, you must be licensed as a processor by AAFRD.

If you process for sale more than 50 litres per day of cow's milk, you must register with and be licensed by Alberta Milk. You will also need quota from Alberta Milk.

The *Dairy Industry Act* defines the following:

Processor – “any person who processes, for sale, 50 litres or more of milk or dairy product on any day, but does not include a retail establishment that operates or uses a freezing device to freeze a frozen dairy product mix manufactured by a processor licensed under this act or the *Marketing of Agricultural Products Act*.”

Producer – “a person who sells, or supplies for sale or processing, milk or farm-separated cream that has been produced by one or more dairy animals owned or controlled by that person.”

Selling Cheese

The regulatory requirements for developing a cheese production and marketing enterprise are significant. If you market all your product in Alberta, a provincial inspector with the Regulatory Services Division of AAFRD has to inspect the facility and grant a license for goat and sheep cheese. If the cheese is made from cow's milk, the inspector will recommend that Alberta Milk grant a license.

If you market the product outside of the province, the plant must be federally licensed and inspected. This will require:

- Submission of blueprints for the facility
- Business plan with five years of projections
- Inspection by a CFIA inspector

Processors will also have to be licensed by Alberta Milk for their supply of raw milk. The Regulatory Services Division of AAFRD or the CFIA will grant a license upon inspection of the facility.

Selling Fish in Alberta

If you are an Alberta licensed commercial fisherman, you can sell freshwater fish caught in Alberta to individual consumers. You must obtain a commercial fishing license for the lake the fish are from and all sales must include a receipt documenting the sale. Fish can be sold fresh or frozen. Fresh fish must be kept at a temperature of not more than 3.3°C and frozen fish must be maintained at -18°C or less.

As an individual you can purchase fish such as salmon from a licensed establishment in another province for further processing, such as smoking, in Alberta. The fish must originate from a federally registered fish processing establishment that complies with the Quality Management Program and has a mandatory HACCP program. Further processing of the fish for sale in Alberta must comply with the Alberta *Public Health Act* and the Food and Food Establishments Regulation, that is, it must be smoked in a provincially inspected facility. In order to ensure certain bacteria are not allowed to grow in the processed fish, your packaging must follow Division B.21.025 of the federal Food and Drug Regulations.

Cheeses with a moisture content of 36 percent or higher, must be stored at a temperature of not less than 1°C and not more than 4°C.

Fish processors must comply with the Food and Food Establishments Regulation. They must obtain and display a food establishment permit.

Interprovincial Sales

The *Food and Drugs Act*, along with the Food and Drug Regulations and the *Canada Agricultural Products Act* and related regulations both deal with the preparation, processing and sale of food. These acts define the requirements for selling food outside the province of origin. Food products produced in Alberta cannot be sold interprovincially unless they meet the standards set out in these acts. Therefore, meeting the requirements set out in the *Public Health Act* Food and Food Establishment Regulations is not sufficient if you intend to sell the product outside Alberta. If you are an Alberta farm direct marketer selling into British Columbia or Saskatchewan or through farmers' markets in these provinces, you must meet the federal requirements.

Producers and processors must meet federal requirements to sell their products beyond Alberta including farmers' markets outside of the province.

What's Next

The next chapter introduces you to legislation that applies to the safety and sale of meat and poultry products. If you are not a market manager or a vendor of meat, poultry or processed meat products, you may want to skip to Chapter 8 that deals with premises and their impact on food safety.



Resources

Copies of provincial legislation and related regulations can be obtained from Queen's Printer, the official source of Government of Alberta laws and publications www.qp.gov.ab.ca/index.cfm

Copies of federal legislation and related regulations can be obtained from the Canadian Department of Justice at canada.justice.gc.ca/en/ or the Canadian Food Inspection Agency www.inspection.gc.ca/english/reg/rege.shtml

Information regarding nutrition labelling and the regulations can be found at www.hc-sc.gc.ca/hpfb-dgpsa/onpp-bppn/labelling-etiquetage/index_e.html

Alberta Food Retail and Foodservices Code

This document consists of model requirements for safeguarding public health and assuring food safety. It provides practical, user-friendly interpretations and guidance for compliance with legislation.

Available from Alberta Health and Wellness or online at www.health.gov.ab.ca/professionals/foodcode/Food_Code.pdf

Code of Practice for Minimally Processed Ready-to-Eat Vegetables

This Canadian Food Inspection Agency code of practice provides guidance for the safe manufacturing of minimally processed ready-to-eat vegetables, and was developed for manufacturing of raw vegetables that have been peeled, sliced, chopped or shredded. It is available online at

www.inspection.gc.ca/english/plaveg/fresh/read-eat_e.shtml#1-0

Farm Direct Sales: Know the Regulations.

Alberta Agriculture, Food and Rural Development. November 2003. Available online at

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex3485?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex3485?opendocument)



Chapter Review

Review the chapter by answering True or False to the following statements.

1. The *Canada Agricultural Products Act* outlines the labelling requirements of products such as honey. _____
2. Inspectors from the regional health authorities and Alberta Agriculture, Food and Rural Development enforce federal legislation. _____
3. Food products sold at Alberta Approved Farmers' Markets are exempt from the *Food and Drugs Act* and the *Consumer Packaging and Labelling Act* and regulations. _____
4. When you are selling processed food products from your farm store, to retail or restaurants or at a craft show, you must obtain a food establishment permit. _____
5. Each regional health authority can establish requirements over and above those set out in the Food and Food Establishments Regulation. _____
6. It is the responsibility of the farmers' market manager to ensure that the market has its food establishment permit renewed on an annual basis. _____

Answers to Chapter Review

1. **True**
2. **False**, the CFIA enforces federal legislation.
3. **False**, legislation applies to all food sold in Canada.
4. **True**, a permit may not be required if you are selling your processed products at an Alberta Approved Farmers' Markets but is required for all other marketing channels in Alberta.
5. **True**
6. **True**, if the RHA fails to send out a renewal notice it is still the manager's responsibility to obtain the permit.

Chapter 7:

It's the Law II!

Learning Objectives

After completing this chapter, you will be familiar with:

- The legislation that applies to the safety of meat and poultry products
- The different responsibilities of the Canadian Food Inspection Agency (CFIA) and the Regulatory Services Division of Alberta Agriculture, Food and Rural Development (AAFRD) in regards to meat and poultry products
- The legislation/regulations that apply if you are selling meat and poultry products interprovincially

Chapter 7: It's the Law II!



Mike and Elizabeth Learn the Regulations

In order to comply with legislation and regulations, Mike and Elizabeth must plan carefully and make a number of important decisions.

The food safety committee of the urban market at which Mike and Elizabeth sell requires all meat vendors to provide proof of inspected slaughter and processing. Most market days the market manager checks the meat and poultry products for proof of inspection.

Proof of inspection is easy for their poultry because each bird comes from the processor with a colored metal inspection tag attached to the wing or label on the plastic bag. However, Mike and Elizabeth realize that they need some form of proof for their individual pork products because only the carcass is stamped by the inspector. They talk to their processor who refers them to the Alberta Agriculture inspector. The inspector informs them that they can be issued a small inspection stamp for use on the butcher wrapped cuts, but nothing is available for use on the cryovac sausage packages.

In evaluating the opportunities at the farmers' market in British Columbia, Mike and Elizabeth realize that since this market and the urban market both run on Saturdays, they will have to purchase a second vehicle. They will have to increase their on-farm storage as well. They need to talk to their local health inspector to determine if their food establishment permit will cover the second vehicle and to discuss the requirements for the on-farm storage.

Then Mike and Elizabeth learn that to sell their products in British Columbia, the animals have to be slaughtered, and the meat processed and stored in federally registered facilities in Alberta. They find a federal facility for their pork but not for their poultry. One way around this problem is to take their live birds to a provincially registered facility in British Columbia for slaughter and processing. The frozen poultry will need to be stored in a British Columbia permitted facility and sold only in that province.

Mike and Elizabeth are currently evaluating the costs/benefits of all their options.



The Alberta Meat Inspection Act and Meat Inspection Regulation govern the slaughter and processing of meat and poultry products in Alberta. The Canada Meat Inspection Act and Regulations applies to the slaughter and processing of meat and poultry products in federally registered facilities for sale beyond Alberta.

Legislation and Related Regulations

This resource discusses only those regulatory requirements that pertain to food safety, especially those food safety issues specific to farm direct marketing channels. It is up to you to research and follow *all* the regulations that pertain to your farmers' market or farm direct business from production through processing and marketing.

As noted in Chapter 6, the *Food and Drugs Act* is the primary legislation that applies to all food sold in Canada, whether imported or domestic. Producers and processors should be aware there is also federal and provincial legislation specific to the slaughter and processing of meat and poultry products.

Meat Inspection Acts

The Alberta *Meat Inspection Act* and Meat Inspection Regulation apply to the slaughter and processing of meat and poultry products in Alberta. The federal legislation, the Canada *Meat Inspection Act* and Meat Inspection Regulations, applies to the slaughter and processing of meat and poultry products for sale interprovincially and internationally.

Both pieces of legislation govern the registration and licensing of facilities and prescribe requirements for the facilities and equipment to be used. Procedures and standards for registered establishments to ensure the humane treatment and slaughter of animals and hygienic processing and handling of meat products are also outlined.



For more information on the Canada *Meat Inspection Act* and regulations visit the CFIA website at www.inspection.gc.ca/english/reg/rege.shtml

Information on the Alberta *Meat Inspection Act* and regulation can be found on the website for the Alberta Queen's Printer at www.qp.gov.ab.ca/catalogue/catalog_results.cfm?frm_isbn=0779722493&search_by=link

or Ropin' the Web at [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6137](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6137)

The Alberta *Meat Inspection Act* defines the following:

Abattoir – “any premises or facility, including a multi-location abattoir, where animals are slaughtered, or where animals are slaughtered and any or all of the following take place: meat is cut, wrapped, frozen, cured, smoked or aged.”

Multi-location abattoir – “an abattoir that is portable and that may be mounted on a vehicle.”

Section 5 of the Alberta *Meat Inspection Act* reads as follows:

“No person shall sell, offer for sale, transport or deliver meat to any person unless...

- a. The animal from which the meat was obtained was inspected by an Inspector.*
- b. The slaughter of the animal took place at a provincial abattoir or at a federal establishment.*
- c. There was a post-mortem inspection of the carcass of the animal from which the meat was obtained, conducted by an Inspector immediately after the slaughter of the animal.*
- d. The meat is judged by an Inspector to be healthy and fit for human consumption and that the meat is stamped with an inspection legend.”*

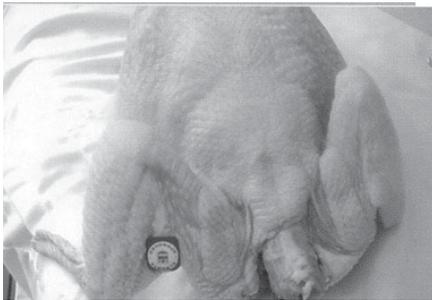


Figure 7.1 **Chicken with Provincial Inspection Tag and Close Up of Inspection Tag**

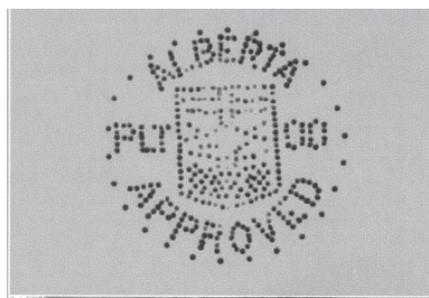


Figure 7.2 **A Side of Beef Being Inspected and a Close Up of the Provincial Inspection Stamp**

The Canada *Meat Inspection Act* guides federal meat inspectors who inspect all packing plants registered under the act. The regulations in the act also outline how animals and meat are to be handled at all stages of processing. All meat shipped outside of Alberta but within Canada or into the USA **must** be slaughtered and processed in federal plants. Food industry and retail meat buyers may also demand federally inspected meat.

If a farm direct marketer or Alberta Approved Farmers' Market vendor is selling meat products interprovincially, the food establishment will need to be inspected and approved by the CFIA.

Meat intended for sale must be slaughtered and processed in an approved facility. Uninspected meat cuts from an approved facility will have the word(s) “uninspected” or “uninspected not for sale” stamped on the wrapping and cannot be sold. Be prepared to provide proof, such as copies of your kill slips or invoices, that the animals were processed at an inspected facility.

With respect to processed meat products, the *Canada Meat Inspection Act* is designed to ensure consumers get safe, non-adulterated and correctly labelled meat products of Canadian and foreign origin. Meat inspectors regularly visit meat processing plants to assess processors for:

- Formulation control
- Preparation methods
- Use of restricted ingredients
- Food safety practices

All processed meat and poultry products must be properly labelled.

Public Health Act

All direct to consumer sales of meat in Alberta are governed by the *Public Health Act* under the Food and Food Establishments Regulation. Develop a good relationship with your public health inspector who can help you interpret the regulations.

Contact the regional health authority in the area where you plan to sell your meat. Inform them of the following:

- Where you want to sell
- Products you are selling
- Your sampling practices
- How far you live from the market
- How you plan to ensure the safety of the meat during transportation and while at the market

The regional health authority or market manager may ask you to provide proof, such as copies of your kill slips or invoices, that the animals were processed at an inspected facility.

Processed meat products – products where there has been a substantial change in the appearance or nature of a meat cut by deboning, slicing, fragmenting, thermally processing, preserving, dehydrating, fermenting or adding an approved ingredient. It does not include dressing, trimming, refrigerating, freezing or defrosting.

Adulterated food – food that has been contaminated to the point that it is considered unfit and not safe for human consumption.

Food Establishment Permit

If you sell any meat direct to consumers in Alberta, whether from the farm gate, at a farmers' market or to a restaurant, you need a food establishment permit from the regional health authority. The food establishment permit ensures that the market venue, vehicle used to transport the food and the on-farm food storage facility meet the requirements of the Food and Food Establishments Regulation.

You **must** store frozen meat in a separate freezer licensed by the regional health authority under the food establishment permit. You cannot store the meat with your family's food. Keep the freezer in an area that is clean and free of rodents, pets, gas and oil, paint and any other potential food safety hazard. Store frozen meat products at a temperature that is maintained at or below -18°C and transport them frozen.

Levels of Meat Inspection

Any meat, such as beef, pork, lamb, bison, poultry and farmed deer and elk being offered for sale in Alberta **must** be government inspected and approved fit for human consumption. Beef, pork, lamb, bison or poultry for personal consumption only does not have to be processed in an inspected facility.

The appropriate governing body **must** approve blueprints for an inspected facility prior to construction. The Regulatory Services Division, AAFRD approves provincial facilities while the CFIA approves federally registered facilities.

There are three types of meat inspection based on where the meat will be marketed. If you sell your meat:

- Within Alberta, you **must** use facilities that are provincially inspected, federally inspected or European Union approved and permitted to slaughter meat for resale
- In other provinces or the USA, you **must** use either a federally inspected facility or a European Union approved facility
- Into the European Union, you **must** have your animal slaughtered and your meat processed in a European Union approved facility

Inspection Requirements

- *Provincial inspection for meat sales within Alberta*
- *Federal inspection for meat sales interprovincially or into the USA*
- *European Union approved facility for meat sales into the European Union*

Meat from animals slaughtered by a mobile butcher can only be used for personal consumption and can't be sold unless inspected prior to slaughter and again as a post mortem inspection at an approved facility.

Regardless of where you intend to market your meat, the inspector **must** be on site to inspect the slaughter of the animal and conduct a post mortem inspection of the carcass after slaughter. Each carcass **must** be stamped to indicate it has passed inspection and is fit for human consumption.

Penalties are very severe if inappropriately inspected meat is transported across a provincial or federal border. Failure to comply with the meat inspection requirements can result in serious fines and imprisonment.

You should choose a facility based on the market requirement of the meat being slaughtered. Thus, if your prime cuts will be sold into the European Union but the lesser cuts sold direct in Alberta, the animal **must** be slaughtered and processed in a European Union approved facility.

Mobile Butchers

Provincially licensed mobile butchers are allowed to slaughter animals intended for sale on your farm *only* if the animal is inspected before and after the slaughter. This emergency situation exists for an animal that is unfit for transport, such as an animal with a broken leg. In this case, special arrangements are made to have an inspector examine the animal while it is still alive. This is done at the producer's expense. A mobile butcher can then slaughter the animal on the farm, and the carcass is taken to an approved facility for the rest of the slaughter and post mortem inspection.

Livestock Industry Diversification Act

According to the *Livestock Industry Diversification Act*, all game production animals, such as deer and elk from licensed farms, **must** be slaughtered in an approved facility. The onus is on the animal owner to ensure that all regulations and associated policies are adhered to when meat from game production animals is meant for human consumption. Selling meat from game production animals outside the province of origin may require additional permits from the province you are selling into. Check with local authorities.

Post mortem inspection – examination of the carcass, blood or parts of the carcass of a food animal by an official veterinarian or by an inspector under the supervision of an official veterinarian.

Livestock and Livestock Products Act

The Purchase and Sale of Eggs and Processed Egg Regulation falls under the *Livestock and Livestock Products Act*. This regulation came into effect in the spring of 2004 and affects the sale of eggs directly to consumers.

According to the new regulation, uninspected eggs can be sold, from the farm gate or at an Alberta Approved Farmers' Market, directly to consumers for their own personal use provided that the eggs are:

- Produced on the producer's own farm
- Clean, have no visible cracks and are not leaking
- Kept at an ambient temperature of 7°C or less until sold
- Packed under sanitary conditions in clean containers that are conspicuously labelled with the word "UNINSPECTED" in letters that are at least 2 cm in size



Figure 7.3 Properly Labelled Used Egg Carton

Egg containers can be recycled provided they are clean and free of contaminants. If uninspected eggs are sold in recycled cartons, any information relating to the grade or a grading station **must** be covered up.

Since the eggs **must** be kept at an ambient temperature of 7°C or less, all of your eggs should not be sitting out on the sales table because the ambient air temperature is too warm. Hold eggs for sale in a cooler or refrigeration unit that can maintain the cool temperatures.

Uninspected eggs can be sold at Alberta Approved Farmers' Markets as long as certain requirements are adhered to.

Eggs must be clearly labelled as UNINSPECTED.

Eggs must be held at temperatures at or below 7°C.



For more information on the sale of uninspected eggs, visit Ropin' the Web at [www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts9204?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts9204?opendocument)

Transportation

It is your responsibility to ensure that vehicles used for transporting meat and poultry products are sealed, designed for the purpose, appropriately inspected and can maintain the proper temperatures for potentially hazardous products. This applies to meat that has already been processed (cut and wrapped) as well as meat that is being taken to another facility for further processing.

In Alberta, the vehicle used to transport provincially inspected meat to market requires a food establishment permit. All vehicles should be thoroughly cleaned prior to loading for each market. Never allow pets in the vehicle while transporting food products.



For more information on transporting meat and other food products see Chapter 11: Transportation.

Labelling

All meat products, including those sold at a farmers' market, **must** be appropriately labelled according to the regulations under the federal *Food and Drugs Act* and the *Consumer Packaging and Labelling Act*. The detail that **must** be included on the label depends on the type of food and marketing channel used.

Labelling Requirements

- Common name of the product
- Net quantity (metric)
- Contact information including name and address to ensure postal delivery. Including supplementary information such as e-mail address, 1-800 number or other contact details is recommended but not required.
- List of ingredients in descending order of amount; include water, artificial flavors, preservatives, etc. Food used as ingredients in other foods must be listed in their component ingredients.
- Durable life date, if shelf life is 90 days or less
- Storage instructions (if required)
- “Previously frozen” identification on meat, poultry, fish and their byproducts as specified in section (see Food and Drug Regulations Division 1 section B.01.080)
- Bilingual, unless specifically exempt
- Nutrition information (Exemptions may exist for some small processors until December 12, 2007. If making a health claim, nutrition labelling **must** be included.)

All meat and poultry products must adhere to the labelling requirements outlined in the Food and Drugs Act and the Consumer Packaging and Labelling Act.



Basic labelling information can be found in the 2003 Guide to Food Labelling and Advertising Chapter 2.

Check it out at

www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml

Nutrition labelling is found in the 2003 Guide to Food Labelling and Advertising Chapters 5 through 8 at

www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml

Contact either of the CFIA Regional Offices, Fair Labelling Practices Program for information on food labelling or nutrition labelling. Call (780) 495-3333 (Edmonton) or (403) 292-4650 (Calgary)

Staff Training

Train key staff on the legislation that applies to your particular business. As a market manager or a farm direct marketer, you and your staff need to know:

- The federal legislation and applicable regulations that apply to your business
- The provincial legislation and applicable regulations that apply to your business. Remember, legislation varies among provinces – each province has its own requirements.
- Legislative requirements change with the marketing channel being used (i.e., farmers' market, farm gate, restaurant, etc.) even though your product has not changed
- The provincial Food and Food Establishments Regulation sets the minimum standards. Each regional health authority can establish additional requirements



Food Safety Plan – Meat and Poultry Legislation

Legislation serves to protect the public. Keeping food safe is not only your legal obligation, it's good for business. It is your responsibility as a food producer and marketer to adhere to the various federal and provincial acts and regulations that impact your business.

Take the time to continue developing your food safety plan. In the Legislation section of your binder, make a list of all the meat and poultry regulations that apply to your business. Update this list annually. Use this list as a checklist when training staff.

Summary

Selling meat and poultry products directly to consumers can be very rewarding. It is critical that you know *all* the federal and provincial legislation that applies to your farm direct marketing or farmers' market operation.

Market Manager Responsibilities

As an Alberta Approved Farmers' Market manager, your responsibility is to:

- Know the federal and provincial legislation that applies to all meat and poultry products sold in your market
- Develop operational guidelines that incorporate the regulations associated with the different pieces of legislation. Ensure all vendors know the guidelines
- Inspect vendors' tables to ensure compliance
- Work closely with your inspectors to ensure that the regulatory requirements are being met regarding the sale of meat and poultry products
- Ensure all animals are slaughtered and meat is processed at appropriately inspected facilities

What's Next

What is a premise? Did you know that there is a list of materials approved for use within the interiors of a food establishment? The next chapter introduces you to the term "premises" and describes how premises impact food safety and how you can avoid some food safety hazards.



Resources

Copies of provincial legislation and related regulations can be obtained from Queen's Printer, the official source of Government of Alberta laws and publications www.qp.gov.ab.ca/index.cfm

Copies of federal legislation and related regulations can be obtained from the Canadian Department of Justice canada.justice.gc.ca/en/

Meat Facility Standards

This manual is available on line at
[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs7147](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs7147)

Meat Hygiene Manual of Procedures

This manual of procedures is intended as a reference source for inspection personnel. It is intended to be used in conjunction with relevant legislation, textbooks and other appropriate source materials to provide an extensive information base to assist inspection personnel in the performance of their duties. It is available online at
www.inspection.gc.ca/english/anima/meavia/mmopmmhv/mane.shtml

Meat Processing Facilities in Alberta: Regulations, Technology and Design

This is the manual of standard practice for Alberta meat processors. It is designed to provide an orderly approach to regulations and technology required for the development of safe, efficient abattoirs and meat processing facilities. This priced publication can be obtained from

Alberta Food Processors' Association
Meat Industry Committee
(403) 556-8283 or (403) 556-4792

Alberta's Agricultural Processing Industry Directory

This directory contains a list of provincially and federally inspected meat plants. It can be obtained from

Alberta Agriculture, Food and Rural Development
(780) 422-2535 (for toll free calling, dial 310-0000 first)
It is available online at
www.agric.gov.ab.ca/food/process/fdprdir/

For more information contact:

Canadian Food Inspection Agency

Calgary

Floor 1, Room 102
110 Country Hills Landing NW
Calgary, Alberta, T3K 5P3
Phone: (403) 292-4650

Edmonton

7000 – 113 Street, Room 205
Edmonton, Alberta, T6H 5T6
Phone: (780) 495-3333

Regulatory Services Division, Alberta Agriculture, Food & Rural
Development

Airdrie Office

Airdrie Agriculture Centre
909 Irricana Road NE
Airdrie, Alberta, T4A 2G6
Phone: (403) 948-8515

Edmonton Office

6909 - 116 Street, Room 925
Edmonton, Alberta, T6H 4P2
Phone: (780) 427-7011

Grande Prairie Office

Provincial Building
10320 - 99 Street,
Grande Prairie, Alberta, T8V 6J4
Phone: (780) 538-6208

Lethbridge Office

3115 - 5 Avenue N, Main Floor
Lethbridge, Alberta, T1J 4C7
Phone: (780) 382-4261

Vermilion Office

Box 24
4701 - 52 Street,
Vermilion, Alberta, T9X 1J9
Phone: (780) 853-8113



Chapter Review

Review the chapter by answering True or False to the following statements.

1. You need a food establishment permit from the regional health authority to sell any meat or meat product direct to consumers in Alberta, whether from the farm gate, at a farmers' market or to a restaurant. _____
2. Uninspected eggs sold at a farmers' market should be appropriately labelled according to the regulations under the federal *Food and Drugs Act* and the *Consumer Packaging and Labelling Act*. _____
3. A farmers' market manager has the authority to confirm that poultry sold at the market has been inspected. _____
4. The public health inspector enforces the Alberta *Meat Inspection Act*. _____
5. Meat and poultry products processed in a provincially registered facility in Alberta can be sold in Yellowknife, NWT. _____
6. Chickens slaughtered on the farm cannot be sold at a farmers' market. _____

Answers to Chapter Review

1. **True**
2. **False**, egg sales fall under the Purchase and Sale of Eggs and Processed Egg Regulation of the *Livestock and Livestock Products Act* (Alberta).
3. **True**, as a manager you can ask a vendor for proof of inspection
4. **False**, inspectors from AAFRD enforce the *Meat Inspection Act*
5. **False**, any meat or poultry product that crosses provincial boundaries must be processed at a federally registered facility
6. **True**, all animals intended for sale must be slaughtered and processed in inspected facilities.

Chapter 8:

Premises

Learning Objectives

After completing this chapter, you will be able to:

- Describe the potential food safety risks associated with the location of a farm direct marketing business, including an Alberta Approved Farmers' Market
- Explain how the design, construction and maintenance of a facility can impact food safety
- Describe the factors that contribute to unsanitary premises
- Develop a food safety plan for your premises including standard operating procedures and record templates

Chapter 8: Premises



Liane and Pam Improve Their Stall at the Market

Liane and Pam weren't happy with their booth. They were concerned that the tables supplied at one of the outdoor markets were in poor repair with considerable chipping and rough edges. At this market, their stall is located in the outside row bordering an unkempt empty lot. Pam and Liane are concerned about the pests and garbage that come in from the lot.

Liane and Pam decided to upgrade their stall by investing in tables and weather protection that provides shade and protection from rain and wind. They decided that since their site can be windy, they needed to protect their products from the dust. They decided on a waterproof canopy with sidewalls and weights that secure the structure.

While their dad could have easily made some tables from plywood, these would be difficult to clean and sanitize. They needed to find tables that were light weight, durable and easy to clean, disinfect and maintain. In the end they chose tables with plastic tops because the material is smooth and non-absorbent.

Now that the market has opened, Pam and Liane are pleased with their new structure and its layout. Everything goes smoothly until the wind starts to blow and the garbage begins to collect around the base of the sidewalls. Pam talks to the market manager about the lack of garbage cans. She also suggests that the cans need to have lids.



Hazards

Your food establishment **must** be of sound construction and maintained in good repair to minimize the presence of any chemical, biological or physical hazard. Contamination can occur directly by chemical residues or microorganisms, or indirectly through the contamination of air or water.

Food can become contaminated by pathogenic microorganisms from a number of sources such as:

- Hands, particularly where handwashing facilities are inadequate
- Floors, walls, ceilings and fixtures because they aren't cleaned or can't be cleaned effectively because of their design or construction
- Standing water, usually because of poor drainage or poor floor slope
- Improper handling, storage or disposal of garbage and other wastes

Food is also subject to chemical hazards if:

- Building materials used to construct the premises, sales tables, etc. are inappropriate for food
- Storage facilities for cleaning and janitorial supplies are poorly designed and constructed

Food can become contaminated by physical hazards such as:

- Broken glass from the wrong type of light fixtures used within the building
- Paint flakes or rust if the food establishment is not maintained

Pathogen or pathogenic microorganism – any bacteria, virus, mould or other form of life too small to be seen by the naked eye and capable of causing disease, illness or injury. Pathogens require moisture, temperature, proper pH and food source to grow.

Premises Design and Construction

Marketing of safe, wholesome food products at any food establishment requires clean and uncontaminated premises. When you are looking for hazards, remember that you need to inspect all elements in the building and surrounding property including the driveway, parking lot, sanitary facilities, drainage, building design and construction.

Location

Potential sources of contamination need to be considered when deciding where to locate your food establishment. Do not locate near:

- Areas prone to infestations of pests
- Environmentally polluted areas and industrial activities that could pose a threat
- Areas subject to flooding unless sufficient safeguards are provided

Standing or pooling water attracts insects and other pests to your location. Airborne dust is a potential source of contamination because microorganisms can be transported on small particles of dust or aerosols. If sites aren't paved, reduce dust by spreading dust control compounds over the site. Remove standing water by pumping or improving the drainage in the area.

Unnecessary movement of food or personnel within a food establishment increases the likelihood of contamination. A properly designed facility will minimize the risks.

Facilities and their surroundings should not contaminate food. Conditions that lead to contamination include excessive dust, foul odors, smoke, pest infestations, airborne microbial and chemical contaminants and other similar conditions.

Food establishment – a place, premises or vehicle where food intended for public consumption is sold, offered for sale, supplied, distributed, displayed, manufactured, prepared, preserved, processed, packaged, served, stored, transported or handled.

Premises – the interior and exterior of buildings and the surrounding property

Dust control compounds – chemical compounds, usually in liquid spray or powdered form, that when used properly help to minimize the amount of dust particles that become airborne during cleaning. Some examples of products available are Dustloc and Soiltac.

Locate an outdoor venue in a protected area on a well drained, hard surface. Food handling areas should have overhead covering and side walls.

Outdoor Farm Direct Markets

Select the site for outdoor farm direct marketing activities carefully. Choose a site that:

- Is free of debris and not close to any pollution source
- Is sloped to prevent the collection of water
- Has roadways that are properly graded, compacted, dust proofed and free from potholes to prevent pooling water

Whenever food handling is involved, locate outdoor farm direct marketing activities and farmers' markets in areas that are protected from wind and on a paved surface or grass that is properly maintained. This will provide some protection against blowing dust and dirt, and pests that collect in long grass.

Ensure outdoor market stalls have a suitable roof or overhead covering that is in good repair. Clear sidewalls or light colored screening will aid visibility and provide some protection. All food contact surfaces **must** be constructed of smooth, impervious and easily washable materials.

“Frequently, first time vendors purchase less expensive canopies for use in the market. They work fine on sunny days. However, the roof starts to drip with the first heavy rain. In my opinion, it’s worth the extra money to buy a canopy that has a water repellant roof.”

Shirley Alton, farm direct marketer

Locate all outdoor food stalls at least 30 meters (100 feet) from portable restroom facilities. Within indoor markets, locate food stalls away from washrooms.



Figure 8.1 **Outdoor Sunshade Structure**

Building Exteriors

Buildings are the first line of defense against contaminants. The exterior of the building should be designed, constructed and maintained to prevent entry of contaminants (pests, dust, smoke, dirt). Screen all vents and air intakes against insects. You need to keep the walls, roofs and foundations in good repair to prevent water leakage and pest entry.

You **must** maintain surrounding areas to control sources of contamination. Steps to consider include:

- Eliminate refuse and debris that attract insects and rodents
- Mow long grass and trim shrubs around the exterior walls of a facility
- Avoid storing materials that can serve as a refuge for rodents, birds and other pests

Use a sunshade structure that protects your products from the elements including windborne dust.

Keep the area surrounding buildings free of debris and avoid storing materials against buildings.

If pests are allowed to live directly outside the facility, they have a greater chance of getting inside and contaminating the premises. Routinely inspect the building exterior for holes where insects, birds or rodents might enter. Mice can enter a building through a hole the size of a dime. Repair immediately to keep pests out.



For more information on controlling pests, see Chapter 15: Pest Control.

Farm direct premises should be clean and well maintained. Avoid having plants against buildings.



Figure 8.2 Well Maintained Farm Direct Premises

Building Interiors

Design your food establishment building to provide suitable environmental conditions, permit adequate cleaning and sanitation and prevent access by pests. The premises must provide adequate space for the farm direct marketing activities and for the fixtures and equipment used for these activities. The intended activities include everything related to the handling and preparing of food: displaying, sampling, storage and sale; storage of cleaning supplies; access for deliveries and garbage pickups.

The interior of buildings must be constructed of smooth, durable materials that are easily cleaned. Properly finished walls and ceilings are easier to clean and will likely then be kept clean. Doors, windows and vents should be screened.

Floors, walls and ceilings **must** be constructed of materials that are durable, smooth and cleanable and with no toxic effect upon food. Materials used must be able to withstand wear and tear and cleaning chemicals. Sound cleanable walls, ceilings and floors make sanitation possible while poorly constructed surfaces can be very difficult to properly clean and sanitize. Flaking paint or rust directly over food preparation, storage or sales areas may result in contamination.

Table 8.1 **Building Interior Requirements**

Fixture	Requirements
Floors	<ul style="list-style-type: none"> • The floor surface must be washable and unable to absorb grease, food particles and water. • Floors should be smooth and free of cracks and crevices, and floor coverings need to be firmly attached to the surface beneath. They should be sloped sufficiently to permit liquids to drain to trapped outlets.
Windows, Doors	<ul style="list-style-type: none"> • Windows and doors should be close fitting, in good repair, appropriately screened to keep insects out and easily cleaned. • Doors should have smooth, non-absorbent surfaces.
Lighting	<ul style="list-style-type: none"> • Food premises must have adequate lighting. Good lighting ensures that your staff can easily check that areas and equipment are clean and spot any signs of pest infestation or problems with equipment. • Light fixtures should be designed to prevent accumulation of dirt and be easily cleaned. • Light bulbs and fixtures located in areas where there is exposed food or packaging materials should be covered to protect food from contamination in case of breakage.
Ventilation	<ul style="list-style-type: none"> • The air within a food establishment must not contaminate equipment or food. Unclean air, excessive dust, odors or buildup of condensation are all potential sources of contamination. • Ventilation should be adequate to prevent buildup of heat, condensation and dust. • Ventilation openings should be equipped with screens. Good ventilation decreases the risk of cross contamination by pathogens.
Working Surfaces	<ul style="list-style-type: none"> • Working surfaces that come in direct contact with food, such as vendor tables at farmers' markets, should be in sound condition, durable and easy to clean, maintain and sanitize. • They should be constructed of smooth, non-absorbent materials.

Adequate lighting helps to identify unclean areas. Shielding of lights prevents contamination in the event of breakage.

Food contact surfaces such as market tables and countertops must be in good repair and easy to clean.



For information on approved construction materials and food contact surfaces visit the Canadian Food Inspection Agency (CFIA) website for the *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products* at www.inspection.gc.ca/english/ppc/reference/cone.shtml

Install all your equipment in the establishment so it is accessible for cleaning and allows the surrounding areas to be easily cleaned. Ensure the food establishment is free of unnecessary clutter because these areas become difficult to clean. Proper cleaning of the premises and equipment is essential for food safety.



For more information on cleaning and sanitizing of premises and equipment see Chapter 9: Sanitation.

Contamination of food, utensils and equipment can occur when improper storage facilities are used. Store cleaning supplies, chemicals and signs in separate, designated areas away from food handling areas.

Provide an adequate number of washrooms that are supplied with hot and cold potable water, soap, drying devices and waste containers. Properly located and equipped toilet facilities are necessary to protect food and equipment.

Storage Areas

Food and equipment can become contaminated when improper storage facilities are used. You **must** store janitorial supplies (mops, brooms, buckets, etc.) and cleaning agents in separate areas away from food storage or sales areas. Make sure that you dispose of dirty water from wet floor cleaning into a service or mop sink or curbed cleaning facility with a drain that is conveniently located close to the janitorial supplies.

Store your tables in a separate area and off the floor. Store other items such as pesticides and marketing materials (signs, posters, etc.) in designated areas. Keep all your storage areas dry and pest free.

Sanitary Facilities

Sanitary facilities include washrooms and hand washing stations. You **must** provide an adequate number of properly designed sanitary facilities for customers, staff and vendors.

Ensure that your washrooms are provided with a supply of hot and cold running potable water, soap dispenser, liquid soap, single use hand towels or drying devices and clean waste containers. Keep your toilet facilities clean, stocked and in good repair at all times by inspecting them throughout the business day.

For outdoor markets, provide at least one washroom for the use of the food handlers during operating hours and an adequate number of washrooms for customers.

Hand Washing Stations

Your customers and staff must be able to wash their hands to reduce the risk of contamination. You can encourage this by:

- Locating hand washing facilities where vendors and customers can easily access them at all times
- Providing an adequate number that are large enough for effective handwashing
- Supplying hot and cold water or pre-mixed warm water
- Stocking soap in suitable dispensers and single use hand drying devices
- Supplying appropriate waste containers for water and garbage
- Posting hand washing notices in appropriate areas
- Ensuring facilities for cleaning of equipment and utensils are separate from hand washing



Figure 8.3 **Portable Hand Washing Station**

A portable hand washing station requires a source of warm water (coffee percolator), container for waste water, liquid soap, paper towels and a garbage container.

Provide an adequate number of covered, leakproof garbage containers. Dispose of garbage when container is full and at the end of the day. The proper disposal of waste is critical for preventing the spread of pathogens and reducing problems with pests.

Conveniently locate a garbage container for customers to dispose of any containers used for food sampling.

Garbage and Waste Water Disposal

The disposal of waste is critical in preventing the spread of pathogens. All garbage **must** be kept in leakproof, covered containers. Using plastic bags in your containers makes them easier to empty and keep clean. Dispose of garbage when the container is full and at the end of the day. This prevents garbage from spilling over and contaminating the area. There should be an adequate number of garbage cans to meet the needs of your establishment.

Garbage containers must be kept in good repair. Replace your containers when they crack, begin to rust through or you lose the lid.

If you are offering food samples, place a waste container within the immediate area for the disposal of single use items such as portion cups.



Figure 8.4 **Conveniently Located Garbage Container**

For outdoor venues, there should be a receptacle for waste water from customers and vendors washing their hands and equipment. If nothing is provided, vendors should have a proper container to hold their own waste water. Waste water must be drained into a sanitary sewer and not onto the street or ground. A storm sewer is not a sanitary sewer.



Evaluating Your Premises

Think about the premises where you sell your products. Identify any problems in each of the following areas and suggest possible remedies.

	Problem Area	Solution
Location		
Building Exteriors		
Building Interiors		
Storage Areas		
Sanitary Facilities		
Garbage/Waste Water Disposal		

Maintenance of Facilities

Regular maintenance ensures there is little risk of contamination of food products. Although many farmers' markets are held in community facilities, as a market manager you have the responsibility to ensure that the premises are safe and regularly monitor the condition of the facilities. Any problems that you detect should be reported to the facility owner or management company. Follow up to ensure that the problem is corrected.

If you are a farm direct marketer with your own facility, have a maintenance program in place. Regularly monitor the interior and exterior of all buildings and correct any problems as soon as possible.

Food establishments must have access to an adequate supply of potable water.

Ice must be made from potable water. Protect ice from contamination.

Water Requirements

Water can be a source of biological and chemical contamination. It can also serve as a pathway for spreading pathogens from a contaminated source to the food products which could cause foodborne illness.

Ensure all food establishments, including temporary ones, have access to potable water and have an adequate supply and pressure for the activities conducted on site. The facility **must** be supplied with hot and cold running water. Prevent cross connections between potable and non-potable water supplies.

Use water from an approved source such as a public water system or a private water system that is approved by the regional health authority (RHA) and tested as often as required by the RHA. Keep your water test results in your files for five years.

If you provide water from a holding tank, check with your RHA about requirements (minimum quantity, tank specifications, etc.). Sanitize all holding tanks and water lines from the tank with an approved sanitizing solution.



Contact your public health inspector for more information on sanitizing and approved sanitizers.

Ice used as an ingredient or in contact with food **must** be made from potable water. Protect the ice from contamination as you handle and store it.

Potable water – water that is safe for human consumption. It meets provincial water quality standards.

No Animals on Site

Dogs, cats and other pets or animals are not allowed on the premises of any food establishment according to the Alberta Food and Food Establishments Regulation. Talk to your public health inspector about any special events you may be planning that would require allowing animals into the premises. You will be asked to meet the necessary requirements prior to the event.

Guide animals used by any person who is mentally or physically handicapped are allowed on food establishment premises.



Figure 8.5 No Pets Sign

In multi-use facilities, the animal living areas must be physically and operationally separated from food handling areas.

No animals, except for guide animals, are allowed in any permitted food establishment.

Pets are not allowed within a food establishment. Post signs throughout the premises to remind customers to leave their animals at home.

Keeping Records

Although keeping food safe is a must, doing so consistently can be a challenge. Monitoring and keeping a written record of food safety activities is one way to ensure that activities are being done on a regular and consistent basis. Record keeping is also a good communication tool between you and your staff.

Records can protect you in the event that a problem occurs. They can help prove that you as a food producer have taken all reasonable precautions to ensure the food is safe.

The forms are easily developed on a computer. If you are not comfortable using a computer or one is not available, create the forms by hand and photocopy them. Be clear as to whose responsibility it is to monitor and keep the records.



Examples of record templates can be found in Appendix F: Record Templates.

Record keeping can be the most challenging part of an effective food safety program. Your records don't need to be very complicated, but they need to track what, who, when, where and how. You also need to record deviations and corrective actions.

Farm direct marketers should have a program in place to monitor the conditions of the facility's exterior and interior. These regular inspections should be recorded. Any problems and the actions taken to correct these problems should also be recorded.

Deviation – failure of a standard operating procedure (SOP); a problem.

Corrective action – procedures or activities to be taken when a deviation occurs and to prevent the problem from occurring again.

Monitoring – a planned sequence of observations or measurements to determine if SOPs are being followed.

Standard operating procedure (SOP) – a written description of a particular task undertaken to ensure safe food handling; a set of instructions describing the activities necessary to complete a task that reduces the risk of foodborne illness.

Your records should include:

- Inspections of the site (parking lot, driveway, etc.) and corrective actions taken to fix the problems
- Inspections of the exterior of buildings and corrective actions taken
- Inspections of the building interior and corrective actions taken
- Water sources and test results
- Facility maintenance schedules
- Waste disposal schedule
- Building blueprints, if available

Staff Training

Food safety training is the key to food safety. It is an essential component of your food safety program. The responsibility for training lies with you, the owner or manager, of the farm direct marketing operation. All staff whether they are full-time, part-time or casual should be trained in the appropriate areas.

Your employees need to understand their role in ensuring food safety and the importance of following your policies and procedures. To make sure your employees understand what is required, they should be able to explain when an activity is to be done, and demonstrate how the tasks should be done. They should also be able to describe what corrective actions are to be taken if a deviation occurs.

Keep simple records documenting when training was conducted, who attended and the time spent reviewing specific safe handling practices.

Training can improve the efficiency of your operation and reduce wastage which results in cost savings. An investment in staff training also results in higher morale and reduced turnover because your employees feel like they are part of your team.

Premises training should focus on areas such as:

- Maintenance activities
- Garbage collection and disposal
- Cleaning and restocking of restrooms and hand washing stations
- Proper setup of market stall

Record keeping is part of your due diligence. Document what needs to be done and then how it was done, when and by whom.

Write what you do (develop a written program).

Do what you write (implement it).

Prove it (records).



Food Safety Plan – Premises

In your food safety plan, document the practices and procedures you implement to safeguard your food. These practices and procedures are known as standard operating procedures (SOPs).

A food safety plan consists of the practices and procedures undertaken by your business or market to protect food products from becoming contaminated and controlling microbial growth. These practices and procedures should be explained in a written document and are referred to as standard operating procedures (SOPs). They are specific to your operation. SOPs need to be readable and to the point so that staff can understand and easily implement them.

An SOP should address the following:

- Purpose and frequency of doing the task
- Who will do the task
- A description of the procedure to be performed that includes all the steps involved
- How it will be monitored and, if required, where the activities are to be recorded
- Corrective actions to be taken if the task is performed incorrectly

A plan for the premises should include areas such as:

- Required maintenance activities
- Monitoring facilities for problems
- Collection and disposal of garbage and waste water
- Inspection and restocking of restrooms
- Water usage from approved sources
- Proper storage of water if required
- Proper use of storage area
- Use of appropriate materials for food contact surfaces
- Where and when to record the activities
- Staff training



Take the time to continue developing your food safety plan. Create a section in your binder for Premises. Use the above points to build the premises component of your food safety plan.

Summary

The facilities, be it a farmers' market or farm store, should not be a source of contamination. Buildings and surroundings **must** be designed, constructed and maintained to prevent conditions that could result in a foodborne illness.

Food premises **must**:

- Have enough space for the equipment and the activities that occur
- Have adequate drainage on site
- Have adequate lighting and ventilation
- Be protected from pests and other contaminants such as dust, weeds and debris
- Be kept clean and maintained in good repair
- Have enough potable water available with sufficient pressure and temperature
- Have access to a sufficient number of toilet facilities and handwashing stations
- Have a disposal system for garbage, sewage and waste water
- Have covered garbage cans located in appropriate areas to prevent cross contamination
- Provide adequate storage facilities for items that are likely to be a source of contamination
- Use approved materials for food contact surfaces

A food premises that is well designed and properly constructed reduces the risk of food contamination and makes the task of cleaning and maintenance easier.

A well designed and properly constructed food establishment reduces the risk of food contamination and makes the task of cleaning and maintenance easier.

Market Manager Responsibilities

As a manager of an Alberta Approved Farmers' Market you need to ensure that the market is operating within a safe environment. The premises must be kept clean and maintained in good order. If you detect problems with the facility, you need to bring these to the attention of the building owners or property management company.

You need to ensure that the market has a sufficient number of covered garbage cans that are emptied when full and at the end of the market day. Garbage should never be allowed to overflow the container.

Restrooms should be regularly checked throughout the market day and restocked. Hand washing signs should be posted in appropriate areas. Hand washing signs are available from your regional health authority.

Signs informing customers and vendors that pets are not allowed in the market should be posted at all entrances. You **must** enforce the no pet policy.

Market managers have a responsibility to ensure that tables used by vendors are in good repair and constructed of appropriate materials. Table coverings should not be a source of contamination.



Food Safety Checklists

Review the Weekly Food Safety Checklist for Market Managers in Appendix M. Add any points on premises that are missing for your market. Remember you and your vendors should be using the checklists every market day.

What's Next

Is a clean surface a sanitized one? Is old bleach still good? When is your cleaning cloth no longer clean? To learn the answers read the next chapter on sanitation and discover why an effective cleaning program is so important to your business.



Resources

If you need more information about premises or have food safety questions about this chapter contact:

Safe Food Systems
 Agri-Food Systems Branch, Food Safety Division
 Alberta Agriculture, Food and Rural Development
 Phone: (780) 427-4054 Dial 310-0000 first for toll free access.



Chapter Review

1. What quality of water is required to operate a food establishment? _____

2. What should never be allowed into a farmers' market except under special circumstances? _____

3. In a food establishment what two areas of the facility should be monitored throughout the business day?

4. Why is dust a food safety concern? _____

5. Food and cleaning supplies may be stored in the same area?
 True or False
6. List the four essential items that must be provided in washrooms or hand washing stations _____

Answers to Chapter Review

1. **Potable quality.** Water must be safe to drink. If you are not using an inspected municipal water supply, have a water sample analyzed by the RHA at least annually.
2. **Pets or animals with the exception of guide animals.**
3. **Washrooms and garbage.** Washrooms should be well stocked throughout the day. Garbage cans need to be emptied.
4. **Dust particles carry germs, pathogens or harmful microorganisms that can lead to foodborne illness.**
5. **False.** Food must be stored separately to prevent risk of contamination.
6. **Warm potable water, liquid soap, waste container, single use hand towels.**

Chapter 9:

Sanitation

Learning Objectives

After completing this chapter, you will be able to:

- Understand the importance of a sanitation program for the prevention of foodborne illness
- Differentiate among cleaning, sanitizing and sterilizing
- Describe proper procedures for cleaning and sanitizing equipment, utensils and food contact surfaces
- Develop a food safety plan for your sanitation practices including standard operating procedures and record templates

Chapter 9: Sanitation



Heidi Throws Out the Trays

The farmers' market manager tries his best to ensure that the market operates properly. However, because the market is held in a building that is used for a number of different purposes, including livestock shows, occasionally the premises aren't as clean as they should be. The manager knows where the janitorial supplies are stored because he often has to sweep the floor before the tables are set up.

Heidi was surprised at how dirty some of the tables were after a horticulture bench show. She realized that she needed to pay more attention to the cleanliness of her market stall. Now Heidi includes market set up in her sanitation program.

Prior to every market Heidi cleans and sanitizes her market tables before laying down her table covers. She brings freshly laundered wiping cloths to every market and puts one into a sanitizing solution for cleaning her sampling area throughout the day. She also cleans and sanitizes her demonstration equipment, utensils and portable coolers before going to the market. She transports the equipment and utensils to market in a covered container. Heidi is careful to store her cleaning and sanitizing products in an enclosed tote away from her baking and sampling supplies.

For two years Heidi recycled styrofoam trays under her cookies. She thought it was a safe practice because she cleaned them. When her customers began bringing in their trays from home, she was concerned that some might be meat trays. She learned from her public health inspector that styrofoam trays, like portion cups, plastic forks, etc. are designed to be used once and discarded.



Cleaning, sanitizing and sterilizing are different processes. Cleaning is the removal of foreign material visible to the eye. Sanitizing reduces the level of pathogens to an acceptable level by using heat or chemical treatments. Sterilization is the complete elimination of microorganisms.

Hazards

Proper cleaning and sanitizing procedures reduce the risk of contamination from the following hazards:

- Biological hazards from contamination with microorganisms from improperly cleaned equipment or surfaces, soiled wiping cloths and dirty utensils
- Chemical hazards from contamination with cleaning and sanitizing chemicals that are not properly rinsed from equipment and surfaces
- Physical hazards from soil or food particles on equipment, utensils, work surfaces or other foreign material that can contaminate food. You and your staff can also introduce physical hazards if cleaning isn't done properly.

Reasons for Cleaning and Sanitizing

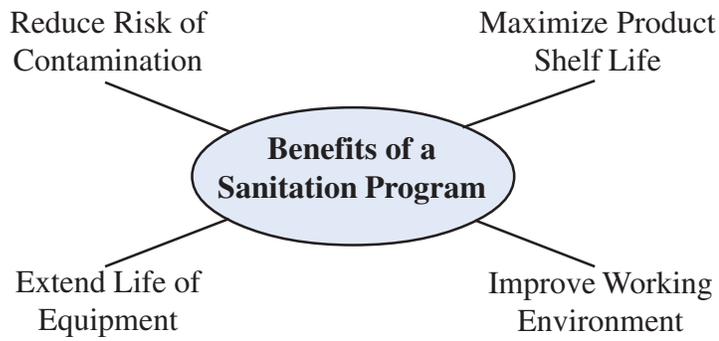
Dirty hands and equipment are the most common carriers of foodborne illness causing microorganisms. These microorganisms are easily controlled through proper cleaning, sanitation and temperature control. The goal of an effective sanitation program is to provide a clean, sanitary environment to market food safely.

Cleaning, sanitizing and sterilizing are different concepts:

- Cleaning removes food residues and other foreign material usually visible to the eye
- Sanitizing is a process using heat or chemical treatments to reduce the level of pathogenic microorganisms to a safe level. Sanitizing is not a substitute for cleaning
- Sterilization is the complete elimination of microorganisms

Sanitary – clean and free of harmful microorganisms and other contaminants.

Disinfection – reduction of microorganisms to a safe level.



As a farm direct marketer you must follow proper cleaning and sanitizing practices at your production site and at the market. You need to develop, implement and monitor written procedures to ensure that your facility is being cleaned and sanitized properly.

Under the Food and Food Establishments Regulation, you **must** have a written sanitation program for your food establishment. Your written procedures must include the cleaning and sanitizing requirements for all your equipment and utensils that are not washed in a dishwasher. You must also include a list of all cleaning and sanitizing agents used, including their concentration and where used.

Ask your regional health authority to review your written sanitation program. If you are a farmers' market manager review the sanitation practices for your market premises with the public health inspector.

A sanitation program has two components – cleaning and sanitizing practices.

Under the Food and Food Establishments Regulation, a written sanitation program is required for permitted food establishments. The program must include cleaning and sanitizing requirements and a listing of cleaners and sanitizers used.

Sanitation program – written procedures outlining cleaning and sanitizing steps and methods.

Maintaining a Clean Workplace

Ensuring that food establishments are clean and safe is an essential component in providing safe food. Dirty premises allow bacteria to multiply, provide food for insects and rodents and discourage customers from returning.

Keep your food establishments clean and in good working order. This makes it easier to clean the facility and helps prevent food becoming contaminated from flaking plaster or paint, debris or chemicals.

Outdoor markets must also be kept clean and well maintained. Garbage collection and disposal, dust control and cleanliness of washroom facilities are especially important for outdoor markets. Holding tanks for waste water from hand wash basins may need to be provided for vendors.

Housekeeping

Housekeeping practices form an integral part of your sanitation program. This includes activities such as janitorial services, garbage collection and disposal, and temporary storage of equipment.

Clean your physical facilities as often as necessary. This will depend on how often the area is used and if it's an area where food is being handled. For example, floors should be cleaned at the end of each business day or throughout the day depending on the nature of your operation. Spills or other accidents must be cleaned up immediately. Storage shelving may require cleaning on a weekly or monthly basis in order to minimize dust, condensation or other contaminants.

Cleaning should be done during periods when the least amount of food is exposed. Use dustless methods of cleaning such as vacuuming, mopping with treated dust mops or sweeping using dust control compounds.

Cleaning of tables is especially important if they are stored "eating side" up because they are more exposed to contaminants. Tables used at a farmers' market should be cleaned and sanitized at the beginning of each market day.

Good housekeeping means keeping a clean, tidy workplace. Keep the premises free of all unnecessary litter. Cleaning activities must not contaminate food.

Dust control compounds – chemical compounds, usually in liquid spray or powdered form, that when used properly help to minimize the amount of dust particles that become airborne during cleaning. Some examples of products available are Dustloc and Soiltac.

On a regular basis, you must clean walls, ceilings, windows and screens. Change the filters on the ventilation system as recommended by the manufacturer so they aren't a source of contamination by dust, dirt and other materials.



Start a Sanitation Plan

All premises need a sanitation plan to ensure that they are thoroughly cleaned. Walk through your premises and list everything that requires cleaning on a daily, weekly and monthly basis. Include the following information:

- Items and areas to be cleaned (tables, walls, floors, light fixtures, storage areas, etc.)
- Cleaning method and directions for use
- Products used, including concentrations
- Frequency and person responsible
- Monitoring records of the plan

Many indoor Alberta Approved Farmers' Markets do not own the market buildings. As a vendor, if you notice any cleaning or sanitizing problems with the facility, notify the market manager who should bring it to the attention of the building owners or property management company.

A clean farmers' market requires commitment from the manager, staff and vendors.

Premises – all elements (interior and exterior) in the building and surrounding property including driveway, parking lot, drainage, building design and construction, sanitary facilities and waste management.

Sanitation and Cleaning of Equipment and Materials

All equipment, utensils and materials including reusable packaging containers *must* be effectively cleaned to remove food residue, debris, soil and bacteria to prevent the contamination of food that may contact them. Cleaning can either be completed manually or mechanically.



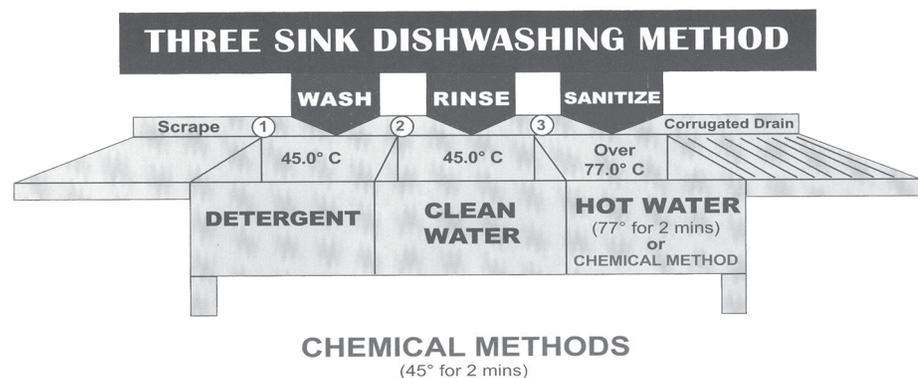
Mechanical cleaning commonly occurs in a processing facility and is not covered in this manual. If you are using a commercial dishwasher refer to the Alberta Food Retail and Foodservices Code, sections 4.2.6 and 4.2.7 and discuss procedures with your public health inspector.

Alberta Food Retail and Foodservices Code is on the web at www.health.gov.ab.ca/professionals/ (click on the first bullet, *Alberta Food and Foodservices Code*).

Cleaning of Equipment and Utensils

To manually clean equipment and utensils, you require at least a double compartment sink of non-corrodible metal. A triple compartment sink is preferred and may be required by your regional health authority. The sinks **must** be large enough to allow complete immersion of the items being cleaned or sanitized. Drain boards **must** be made from non-corrodible and non-absorbent material.

Triple sink dishwashing method is an effective way of cleaning and sanitizing food handling utensils and small equipment.



Chlorine Soution = 100 ppm
 Dilution of 5% Bleach (Chlorine) approximately
 one tbsp. per gallon of water
 1/2 ounce per gallon of water
 1/2 tsp. per litre of water
 2 mL per litre of water

Quaternary Ammonium Solution
 (Quats) = 200 ppm
 Dilution of Quats
 Follow manufacturer's instructions

Figure 9.1 Triple Sink Washing Method

Double or triple sinks may not be available at outdoor Alberta Approved Farmers' Markets. Talk to your regional health authority about acceptable alternatives and work with the public health inspector to develop a proper sanitation plan for your outdoor market.

Steps for Effective Cleaning

- Step 1** Scrape and/or rinse food particles and debris from surfaces
- Step 2** Wash with a detergent solution to loosen soil, bacterial film and grease. For manual washing, maintain the detergent solution at a minimum temperature of 45°C. Grease is difficult to remove if water is less than 45°C. Avoid perfumed detergents because their odor may taint food products.
- Step 3** Rinse with clean, hot, potable water to remove loosened soil and detergent residue. For manual rinsing, maintain the rinse water at a temperature of 45°C or hotter.
- Step 4** Air dry. Towel drying, or storing on a dirty surface or where splashing may occur, can lead to re-contamination of the cleaned surface.

The steps to the cleaning process include rinsing, washing with soap or detergent, rinsing to remove soap residues and air drying. Potable water must be used for cleaning.

You should clean utensils and small food demonstration equipment at your preparation site before going to the market. Clean these items again after the market. In most cases, you must clean market equipment such as refrigerated coolers, tables and freezers at the market prior to opening and again at the end of the day.

The highest levels of contamination are found in areas that are damp such as sink drains, dishcloths, sponges and faucet handles. Pay extra attention to these areas in your sanitation program.

Disposable wiping cloths should be used to wipe floor spills. Wet cleaning cloths used to wipe spills from food contact surfaces should be stored in a sanitizing solution that is made up each market day.

A sanitizing plan outlines the agent and procedures used to sanitize equipment, utensils, materials, etc. It does not include cleaning steps and methods.

Cleaning of Cloths

Do not use wiping cloths, dishcloths or sponges for dishwashing as they harbour bacteria. Use clean, plastic scouring pads or brushes to remove dried residues.

Use wiping cloths for wiping food spills and change them every four hours and when the market closes. Use a new cloth to wipe meat spills and non-food contact surfaces such as floors and walls and dispose of immediately. Single-use paper towels are useful for wiping spills.

If you use dishcloths, use clean ones for every market day. At the market, keep the cloths in separate sanitizing solutions between each use. The sanitizing solutions must be made fresh at the start of each market day. An effective solution is one ml bleach per litre of water (one teaspoon per gallon). Change sanitizing solutions as required. Do not add soap to a sanitizing solution.

You must keep your wiping cloths free of food debris and visible soil. They must not be used for any other purpose.

Sanitizing of Equipment and Utensils

Cleaning does not, by itself, consistently reduce contamination to safe levels. Sanitizing is required to significantly reduce the level of disease causing organisms.

Cleaning **must** precede sanitizing. While not all equipment (for example, vehicles) needs to be sanitized, any utensil or equipment that comes in direct contact with food must be sanitized. Usually utensils and small food demonstration equipment are sanitized at the preparation site before going to the market. Tables and freezers are cleaned and sanitized at the market prior to opening and cleaned again at the end of the day.

Sanitizing can be done by temperature or chemical disinfectants. Apply the approved sanitizer at the proper temperature and concentration and for the appropriate length of time to achieve the necessary reduction in bacteria levels.

Thermal sanitation – sanitation method using hot water or steam for a specified temperature and contact time.

Chemical sanitation – sanitation method using an approved chemical sanitizer at a specified concentration and contact time.

Manual Methods of Sanitizing Equipment and Utensils

There are two steps in the manual method of sanitizing equipment and utensils:

- Step 1** Completely immerse equipment in one of the following solutions for at least 2 minutes:
- Water at a temperature of at least 77°C. Note: if you use a commercial dishwasher to sanitize, the rinse water temperature must be 74°C or hotter, depending on the type of machine
 - Chlorine solution of 100 – 200 mg/L available chlorine at a temperature of not less than 45°C
 - Solution containing a quaternary ammonium compound (quats) having a strength of not higher than 200 mg/L consistent with efficacy at a temperature of not less than 45°C
 - Solution containing not higher than 25 mg/L iodine at a temperature of not less than 45°C

Step 2 Remove equipment and air dry.

Use potable water in all cleaning and sanitizing processes. If you use well or spring water, submit a sample annually to an approved laboratory for testing.

The correct order for cleaning/sanitizing food contact surfaces is:

- 1. Rinse*
- 2. Clean*
- 3. Rinse*
- 4. Sanitize*
- 5. Air Dry*

Available chlorine – amount of chlorine that is free to chemically react with organic matter in order to sanitize a surface.

Check with your regional health authority for specific requirements or alternatives for sanitizing equipment and utensils.

After cleaning tables, freezers and other stationary market equipment, sanitize these items by applying a bleach solution (dilution of 5% chlorine bleach = 100 ppm chlorine solution) from a spray bottle and air dry.

Recipe for Bleach Sanitizing Solution

- 1 tablespoon (1/2 ounce) per gallon of potable water
- 1/2 teaspoon (2 ml) per litre of potable water



For more information on how to calculate dilution rates to achieve specific concentrations or ppm, see Appendix O: Technical Background Information.

Store cleaned and sanitized utensils and equipment well above floor level and in an area that protects them from contamination from splashes, spills, dust, etc. Sanitize items again if they have been stored for more than a day or exposed to contaminants. Wash hands thoroughly before handling any sanitized items.



For more information on proper hand washing procedures see Chapter 13: Personal Hygiene.

Parts per million (ppm) and milligrams per litre (mg/L) – ways of expressing very dilute concentrations of substances. Just as per cent means out of a hundred, so parts per million or ppm means one out of a million. One ppm is equivalent to one milligram of something per liter of water (mg/L).

Sanitizers

Use only approved sanitizers with food and food preparation equipment. Use according to the manufacturer's directions. Do not use scented or color safe bleach. Keep the number of cleaning products to a minimum to avoid confusion and potential mistakes.



For approved products, see *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products* found on the Canadian Food Inspection Agency (CFIA) website at www.inspection.gc.ca/english/ppc/reference/cone.shtml

Sanitizing solutions lose their effectiveness with time and temperature. You need to check sanitizer concentrations frequently because they can break down quickly. For example, bleach is only effective if surfaces are free from dirt, food particles and detergent residues. Sanitizers may lose their effectiveness in dirty solutions or when exposed to sunlight. Sanitizing solutions should be made and checked at least daily.

To act as a sanitizer, chlorine must be available to react with organic matter thus killing bacteria and other microorganisms in the process. When a bleach solution becomes soiled, less chlorine is available and the solution loses its effectiveness as a sanitizer. For example, if you have a 200 ppm bleach solution and add soiled cleaning cloths to the solution, the chlorine in the solution will react with the soil in the cloths. Some of the chlorine will no longer be available to chemically react the next time a dirty cloth is placed in the same solution. This is why a sanitizing solution needs to be replaced every day or more depending on how often the solution is used.

The best way to check whether a solution is effective is to use a test strip. Chlorine test papers are available from a chemical supplier. Test papers are extremely sensitive to light and should be replaced every 6 months.

Chlorine test strips are used to test chlorine concentrations.

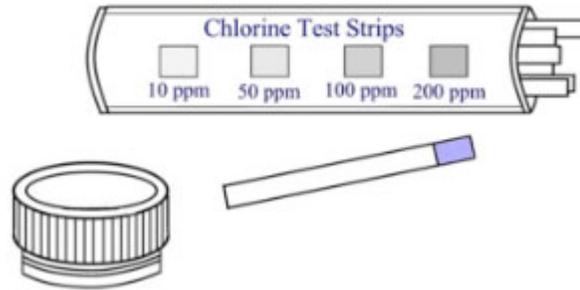


Figure 9.2 Chlorine Test Strips

Using Chlorine Test Strips

- Make sure the test strip is appropriate for the type of sanitizer
- Prepare the sanitizing solution
- Dip a strip into the solution for at least 10 seconds
- Compare the changed color of the strip with the guide on the outside of the package to determine the solution strength

Do not use sanitizers at concentrations above or below the recommended levels. Too high a concentration may be harmful to people and too low a concentration may not sanitize properly. Testing equipment to determine the strength of the sanitizer **must** be available and used with each batch.

Using Quats

Follow label instructions carefully for quats. Using too much can leave a residue that can cause illness. Quats are relatively non-corrosive but tend to foam excessively in a dishwasher and may cause serious rinsing problems. Quats are quite effective when used at 200 mg/L. They are difficult to test and **must** be used according to the manufacturer's label.

Although effective, iodine solutions are rarely used because of the potential for discoloration of cutting boards, utensils and white sinks. An iodine solution will be khaki brown at 12.5 mg/L. Test kits and tablets are available for testing iodine concentration. Fresh chemical should be obtained every four to six months.

Apply the approved sanitizing method or chemical agent at the proper concentration, temperature and for the appropriate length of time to achieve the necessary reduction in bacterial levels. Monitor temperatures and sanitizer concentrations regularly. Sanitizer effectiveness decreases with time and temperature.



Refer to the Alberta Food Retail and Foodservices Code (section 4) for specific cleaning and sanitation requirements www.health.gov.ab.ca/professionals/ (click on the first bullet, *Alberta Food and Foodservices Code*).



Sanitation Word Match

Match the following words with the correct definition

- | | |
|--------------|------------------|
| A. Sanitizer | E. Potable |
| B. Detergent | F. Hand Washing |
| C. Clean | G. Sterilization |
| D. Sanitary | H. Disinfection |

- ___ 1. The complete elimination of microorganisms
- ___ 2. A chemical compound specifically formulated to remove soil, food debris and grease
- ___ 3. The most critical aspect of personal cleanliness; it involves plenty of hot water and soap
- ___ 4. A term that is often used in place of sanitize
- ___ 5. Water fit for human consumption
- ___ 6. Free from dirt, food particles and other visible foreign material
- ___ 7. Free of harmful levels of disease causing microorganisms and other harmful contaminants
- ___ 8. A chemical compound specifically formulated to reduce the numbers of microorganisms on food contact surfaces

You will find the answers at the end of this chapter.

Frequency of Sanitizing

Regularly clean and sanitize utensils and food contact surfaces. Clean and sanitize equipment that is used continuously at room temperature for handling potentially hazardous foods:

- Before market start-up
- Every 4 hours
- Between food types
- After finishing a job

This includes food processors, knives, utensils, metal stem thermometers and all food sampling equipment and utensils. Clean and sanitize cooking equipment such as griddles and electric frying pans between each production and sample batch. If these items are not washed and sanitized, new food will be contaminated by the old food left on the equipment.

Non-food contact surfaces, such as shelves, must be cleaned as often as necessary to keep them clean. Regular monitoring will help you determine the cleaning frequency.

Get into the habit of “clean as you go”. Keep market tables and sales areas clean and tidy throughout the market day. Clean up spills immediately. Monitor the cleanliness of the market equipment throughout the day.

Accepted Chemical Products

All chemicals used, including detergents, cleaning agents and sanitizers, **must** be listed on the Canadian Food Inspection Agency (CFIA) *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products*. This document lists all the materials and non-food chemicals that are acceptable for use in food applications.



The *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products* can be found on the Canadian Food Inspection Agency (CFIA) website at www.inspection.gc.ca/english/ppc/reference/cone.shtml

Chemical Storage

All chemicals, including cleaning and sanitizing agents, must be stored well away from food, food contact surfaces and food use materials. Further separation should occur within the chemical storage area. Store all cleaning and sanitizing products in a separate area from pest control chemicals to help ensure that pesticides are not accidentally applied to food contact surfaces. Lock your chemical storage area and allow access only to those authorized.

Use inventory control measures to help you track and trace the use of each chemical product. Record the amount of chemical used each market day, the name of the user and the monthly inventory. Inventory records also help you keep track of when chemicals such as sanitizers should be replaced. If stored too long, some sanitizers such as bleach lose their sanitizing properties; the bleaching capacity remains but the disinfecting capabilities are lost.

Preventing Contamination

Contamination of food equipment is one of the leading causes of foodborne illness. Proper cleaning and sanitizing practices control the growth of bacteria and disease causing microorganisms. Food left on work surfaces, equipment and utensils helps microorganisms grow and multiply. When the equipment or utensils are used without being thoroughly washed and sanitized, microorganisms are transferred to the food.

Only cleaned and sanitized surfaces of equipment and utensils must contact raw or cooked ready-to-eat food. Wash and sanitize the food preparation sink before each use.

Replace any chipped, cracked or rusted utensils or equipment immediately. A tiny chip or crack allows a buildup of grease, grime and microorganisms that cannot be easily removed by cleaning and sanitizing.

Use single service items including styrofoam containers, plastic utensils and disposable cleaning cloths only once and then throw out. The definition in the Alberta Food Code for single service is “designed to be used only once and then discarded”. When the styrofoam item is first produced, it is considered clean and sanitary. Once it is used, it cannot be properly cleaned and sanitized for re-use.

Keeping Records

Keep records of your sanitation program. They should document what procedures are monitored, verify their effectiveness and confirm corrective actions. Keep records of:

- Staff training
- Cleaning and sanitizing checklists (what, how, who)
- Cleaning and sanitizing schedules (when, how often)
- Monitoring, oversights and corrective actions
- Sanitation program inspection and verification (was it done)

Keep sanitation records for one year.



Examples of sanitation record forms can be found in Appendix F: Record Templates.

Staff Training

Train all your staff so that they understand the basics of your sanitation program. It is essential that they are aware of how the sanitation program works and their specific duties.

Your staff should know the proper cleaning and sanitizing procedures and why they are essential to maintain the safety of food products. Provide clear instructions to staff that specify:

- Premise areas, equipment, containers and utensils to be cleaned
- The person responsible for the cleaning and sanitizing
- The chemicals or cleaning products, including concentrations and process to be used
- The procedures to be used
- Frequency of cleaning

Provide additional training when there are changes to equipment or processes.

Remember, no matter how good the cleaning product, effort and energy from you and your staff are still required to achieve good results.



Food Safety Plan – Sanitation

As a permitted food establishment, you **must** have written sanitation procedures for your production and market facilities. Discuss your sanitation program with your public health inspector.

In many small facilities, such as farmers' markets, the cleaning and sanitation program may consist of only a few simple steps. Remember to include waste containers and garbage disposal procedures.

Your written sanitation program should identify:

- What is to be cleaned and sanitized including all equipment, utensils and materials (from truck to tables)
- What chemicals and concentrations are to be used for cleaning and sanitizing, include mixing instructions
- What tools are to be used
- How cleaning and sanitizing is to be done. Ensure staff are able to implement your written sanitation program
- Who is responsible for cleaning
- What safety precautions need to be taken
- Who is responsible for checking that the cleaning has been done
- When and how often the activities need to be completed (hourly, daily, weekly, monthly, annually)
- What records need to be kept
- What must be done in the event that procedures are not followed as written (deviation and corrective actions)
- What must be done if food becomes contaminated (corrective actions)



Take the time to continue developing your food safety plan. Create a section in your binder for Sanitation. Use the information in this chapter to build this component of your plan.

Deviation – failure of a standard operating procedure; a problem.

Corrective action – procedures/activities to be taken when a deviation occurs and to prevent the problem from occurring again.

Summary

Food may become contaminated unless effective control measures are taken to properly clean and sanitize equipment, utensils and other food contact surfaces. A sanitation program provides assurance that the food establishment is being cleaned effectively and consistently.

As a farm direct marketing vendor, take measures to protect food from contamination:

- Follow a written sanitation plan for vehicles, crates and totes, tables, equipment, utensils, etc. (who, what, when and how)
- Keep accurate records of cleaning and sanitizing activities in your sanitation log
- Always properly clean, rinse, sanitize and air dry any food contact surface or equipment before using and between using it for raw and cooked foods or between different foods
- Store cleaning supplies in an area separate from food products

As a farmers' market vendor, market manager or farm direct marketer, it is your responsibility to ensure that food sold is safe.

Market Manager Responsibilities

Alberta Approved Farmers' Market managers are responsible for the safety of the market venue.

- Is there a written sanitation program in place for the market, including washrooms, that clearly defines who is responsible, what needs to be done and when it should be done?
- Is there an adequate supply of cleaning products and equipment for the market?
- Do you have a system in place to record cleaning and sanitizing activities at the market? Are these activities recorded each market day?
- If someone else is responsible for cleaning, are you verifying that the activities are being done according to the sanitation program?

Managers need to monitor vendors' cleaning and sanitation activities at the market to ensure food is handled safely.

- Are vendors cleaning and sanitizing tables, equipment and utensils frequently throughout the market day?
- Do vehicles appear clean?
- Are the tables cleaned and sanitized prior to the market opening each market day?
- Are the stalls and tables kept clean and tidy throughout the day?

What's Next

Do you know what FIFO is? Hint: It's not a dog's name; it's an inventory practice. Read the next chapter to learn about FIFO, conditions required for safe storage and more.



Chapter Review

Take a few moments to review the chapter and answer True or False to the following questions.

1. Cleaning and sanitizing are the two components of a sanitation program. _____
2. Towel drying of utensils is a good sanitation practice. _____
3. Food establishments require a written sanitation program. _____
4. It is the farmers' market manager's responsibility to ensure that the market, including washrooms, is kept clean and tidy throughout the market day. _____
5. Sanitizing agents are fairly stable and are good to use repeatedly without changing. _____
6. Dry sweeping is an acceptable method of cleaning. _____

Answers to Chapter Review

- 1) True
- 2) False, towel drying can re-contaminate surfaces. All food contact surfaces must be air dried.
- 3) True
- 4) True
- 5) False, sanitizing agents break down over time and with exposure to dirt and sunlight. Sanitizing solutions must be replaced daily or more depending on the use.
- 6) False, sweeping is acceptable if done with a treated dust mop or with dust control compounds.

Answers to Word Exercise

- | | |
|------|------|
| 1) G | 5) E |
| 2) B | 6) C |
| 3) F | 7) D |
| 4) H | 8) A |

Chapter 10:

Storage

Learning Objectives

After completing this chapter, you will be able to:

- Outline appropriate conditions required for the safe storage, both long and short term, for different food types
- Define and practice recommended stock rotation procedures (first in, first out)
- Describe the conditions required for safe storage of non-food items
- Develop a food safety plan for storage including standard operating procedures and record templates

Chapter 10: Storage



Totes Are Great But Storage Needs Work

Pam and Liane carry the pickling cucumbers, peas and beans in bulk totes to the market and sell these products by the pound. Their potatoes and carrots are bagged and sold in two sizes: 2 pound and 5 pound plastic bags. Squash, tomatoes and peppers are marketed by the piece, strawberries by the basket.

Pam and Liane checked the CFIA website for suppliers of food grade plastic totes to use for their bulk produce. They talked to a number of tote suppliers while visiting the Prairie West Trade Show at the Alberta Horticultural Congress. Food grade packaging, including totes and cardboard boxes, must be used when food comes in direct contact with the packaging.

However, their careful preparation in one area did not prevent a disaster in another. After returning from their Thursday market, Pam and Liane's crew unloaded the truck and placed the boxes of unsold vegetables back into the upright cooler. On Saturday when loading the vegetables for market, they notice a strong bleach smell when they open the cooler door. They find that one box on the top shelf that they thought contained vegetables actually held cleaning supplies. The bleach bottle had tipped over and leaked onto the vegetables below. They dispose of all the boxed vegetables in the cooler and scramble to harvest more for market. Pam realizes that the cleaning box should be labelled and properly stored. She also realizes she needs to review procedures with her staff to prevent contamination from occurring again.





R_x For Cold



Mike and Elizabeth need on-farm freezer storage because of the increased demand for their products at the urban market. After consulting with their public health inspector, they learned that meat products intended for sale cannot be stored in their large home freezer. They could store them in a separate chest freezer located in an area that is approved by the health inspector.

Mike and Elizabeth consider building a walk-in freezer that will accommodate future expansion to the business. Before deciding, they discuss this with their public health inspector. They discover the plans for this storage area will need to be approved by the regional health authority before they can begin construction or estimate costs for specific requirements. For instance, the freezer must have an accurate built-in thermometer or other temperature recording device so they can monitor the temperature of their frozen meat products.

Hazards

Food products stored at farm direct market outlets including Alberta Approved Farmers' Markets are subject to all three types of hazards. Food can become contaminated by:

- Chemical hazards such as residues or spillage of cleaning supplies used to clean equipment, demonstration and sale tables and storage areas
- Biological hazards from pathogens present in water, dirt, spills, unclean storage containers, pests or other contaminants due to unsanitary handling. Microbial growth can occur because of time/temperature abuse or poor storage conditions
- Physical hazards such as broken glass (e.g., light bulbs), metal shards, screws, etc. because of poor storage conditions

Safe Storage Practices

Farm direct marketers need to consider three primary food safety storage issues:

- Maintaining proper temperatures during storage
- Protecting food from contamination through the use of appropriate packaging
- Following recommended procedures for storing non-food items

All farm direct marketers, including farmers' market vendors and those supplying products directly to restaurants, **must** follow safe storage practices at their production site and at the market.

Temperature control is critical to keep your foods safe and extend their shelf life. Problems with food spoilage and foodborne illness can result if satisfactory conditions of cleanliness, temperature, humidity and stock rotation aren't provided during storage. Any of your employees with poor personal hygiene or improper food handling practices can also contaminate food during storage.

“One food safety change we made is to implement daily checks on our walk-in freezer to make sure temperature and humidity are controlled at all times.” Greg Sawchuck, Muriel Creek Cattle Company

It is important to clean incoming stock before storing. Store all your food, utensils and single service items a minimum of 15 cm (6 in.) off the floor. This also applies to your equipment except, for those pieces designed to sit directly on the floor. Covering these items will protect them from contamination. Under good storage conditions, you can maintain the temperature control and air flow needed to reduce the risk of damage and contamination.

Primary food safety storage concerns are:

- *Maintaining proper temperatures*
- *Using appropriate packaging*
- *Avoiding cross contamination*
- *Inventory management*

Correct storage helps prevent spoilage, contamination and wastage. It is essential in the safe and hygienic operation of any food business, including selling food at Alberta Approved Farmers' Markets.

Single service – according to the Alberta Food Retail and Foodservices Code **single service** means a utensil designed to be used only once and then discarded.

Clean, cold temperature storage facility with product off the floor, packaged and separated by type is essential.

Store canned goods such as jams and pickles and some baked goods in cool, dry, well ventilated areas.

Provide refrigerated storage of 0- 4°C for short-term storage for perishable and potentially hazardous foods. Eggs are the one exception and can be stored at 7°C or less.

Storage temperatures of -18°C or colder are required for frozen food. Frozen storage does not destroy microorganisms; it simply suspends growth.

Avoid storing food and food handling products with hazardous materials or under pipes carrying liquid waste. Keeping your food well away from non-food items significantly reduces the risk of contamination.



Figure 10.1 **Proper Storage Facility**

Food Types and Storage Conditions

You **must** store food safely at all times and promptly clean up any spills. Depending on the type of food, you can store it in one of three ways:

1. Use cool, dry, well ventilated storage for shelf stable, non-perishable non-hazardous items such as jams, jellies and pickles.
2. Refrigerate (4°C or less) for short-term storage of fresh, perishable items and potentially hazardous foods. The only exception is eggs which may be stored at 7°C or less.
3. Freeze (-18°C or colder) for long-term storage (6 to 12 months) of perishable and potentially hazardous foods. Freezing simply extends the shelf life and quality of potentially hazardous foods. Frozen storage doesn't destroy microorganisms; it simply suspends growth. Once thawed, the pathogens will continue to grow and food can readily spoil. Long-term freezer storage is a quality and not a food safety concern.



For more information on the recommended storage life of specific foods refer to Appendix G: Food Storage Chart. For more information on defrosting food safely see Chapter 14: Food Handling.

Your food storage areas should be clean, well ventilated, pest proof, tidy and separate from non-food products. Different food types require specific storage conditions to keep them safe as shown in Table 10.1.

Table 10.1 **Storage Conditions for Various Food Types**

Food Type	Examples	Storage Conditions	Comments
Perishable and Potentially Hazardous	Fresh meat, fish, poultry, milk and dairy products, eggs, hazardous baking such as meat, cream, lemon meringue and pumpkin pies, cheese cakes, perogies, raw seed sprouts, garlic and oil mixtures, prepared entrees with meat, vegetables or cooked cereals, cider and vegetable juices, home canned and low acid foods such as antipasto and salsas, cooked vegetables and cereals, etc.	Fresh: between 0°C and 4°C Eggs at 7°C or less (only exception)	Sell that market day Foods with eggs as an ingredient must be stored at 4°C or less Prevent cross contaminating other foods
		Frozen: at -18°C or colder	Meats, fish, poultry and dairy product may be frozen for extended storage
Perishable and Non-hazardous	Fresh produce, breads, muffins, fruit pies, etc.	Clean, cool, well ventilated area Produce: between 0° and 4°C and appropriate humidity levels Frozen baked goods: at -18°C or colder	Keep produce clean and inspect frequently as spoilage organisms spread very quickly Cover or protect from contamination by pests and other contaminants
Non-perishable and Non-hazardous	Jams, jellies, pickles, high acid bottled and canned goods, dried, sweet and salt-preserved foods	Store canned goods in a clean, cool, dry location	Non-perishable foods have a shelf life greater than 90 days at room temperature

Safe refrigerator temperatures are between 0–4°C. Freezer temperature is –18°C or less.

Use precooled insulated coolers for short-term storage only. These coolers cannot freeze or cool foods – they only help to maintain cool temperatures.

Temperature Control

Refrigerated storage slows the growth of bacteria that may be present in your perishable or potentially hazardous foods. You can maintain cold temperature storage by using mechanical refrigeration units or insulated coolers. Portable coolers **must** be used for short-term storage only. You should pre-cool all cold storage units to the recommended temperatures before storing your products.

Insulated Portable Coolers

If you're using portable coolers, make sure that you have enough packaged ice or frozen gel packs to maintain proper temperatures, especially for potentially hazardous foods. Make your packaged ice from potable water and bag it to prevent melt water from contaminating food during storage. Drain off the melt water as needed.

It is your responsibility to ensure that food is maintained at the required storage temperatures. Frozen foods stored in portable coolers at the market **must** be solidly frozen before being loaded into the coolers. An insulated portable cooler will prevent foods from thawing during the day but is not capable of freezing or cooling foods.

Remember, the temperature of potentially hazardous foods packed in a portable cooler with ice will rise during the market day, exposing the food to danger zone temperatures. If you are using a portable cooler that plugs into the electrical outlet in your vehicle, make sure it can maintain temperatures of 4°C or less.

Perishable – any food product or ingredient that is susceptible to deterioration or loss of quality when subjected to temperature abuse. They have a shelf life of less than 90 days at room temperature.

Potentially hazardous food – any food that is capable of supporting rapid and progressive growth of pathogenic microorganisms or the production of toxins; has a pH greater than 4.6 and a water activity (A_w) of 0.85 or more.

Non-hazardous food – food such as dry goods, cereals, most baked goods and unconstituted dehydrated foods. These foods do not normally support the growth of disease causing bacteria and do not usually need to be refrigerated (e.g., cookies, breads, cakes, potato chips, popcorn and nuts).

pH – scale by which the acidity and/or alkalinity of food is measured. The lower the pH number, the more acid is the product. pH values range from 0 to 14. The value for pure distilled water is 7, which is considered neutral. Potentially hazardous foods have a pH greater than 4.6 which favors growth of food poisoning organisms.

Water activity – the amount of free water in the food that is available to pathogens; denoted by the symbol A_w . Pure water has a water activity of 1.0.



Figure 10.2 Portable Cooler for Temporary Storage

Mechanical Cold Storage Units

Refrigeration units **must** operate between 0° and 4°C. Freezers **must** be maintained at -18°C or colder. Cold air should circulate easily around the food products in the unit. You should use a calibrated thermometer to check the unit and product temperatures at the beginning of the market day.

Each refrigerator and freezer **must** have an accurate thermometer that is calibrated as required. If the thermometer is not built in, place a refrigerator/freezer thermometer in the warmest areas of the unit which are usually near the door.



For information on using and calibrating a hand held thermometer, see Chapter 12: Equipment.

Remember that refrigerators and coolers are designed to hold cold foods, not cool large quantities of hot food. Overloading a refrigerator with hot food increases the temperature of the unit which encourages condensation thereby increasing the risk of contamination. You should avoid putting a large quantity of hot food into a refrigeration unit. Instead, first separate your hot food into small, shallow stainless steel containers, immerse the containers in an ice slurry and stir until cool. Or, you can place these small containers into a freezer for about 30 minutes. Once cool, refrigerate immediately.

Ice slurry – mixture containing equal parts of crushed ice and water.

Portable coolers can be used for temporary storage as long as temperatures are being maintained. Monitor the temperatures throughout the day to ensure that food is kept out of the danger zone.

Monitor the temperatures of refrigeration and freezer units using calibrated thermometers. Record the temperatures in a temperature log book.

Harmful bacteria can be transferred from food to people, people onto food, and from one food to another. This spread of bacteria or cross contamination is a prime cause of foodborne illness. It's critical that food be handled and packaged correctly to prevent cross contamination during storage.

Preventing Contamination

To keep food from becoming contaminated during storage, you need to:

- Prevent cross contamination
- Package food correctly
- Rotate stock and practice inventory control

Cross Contamination

Cross-contamination occurs when disease causing microorganisms are transferred from one food or surface (utensils, hands, gloves, cloth towels or equipment) to another. This can happen very easily in storage.

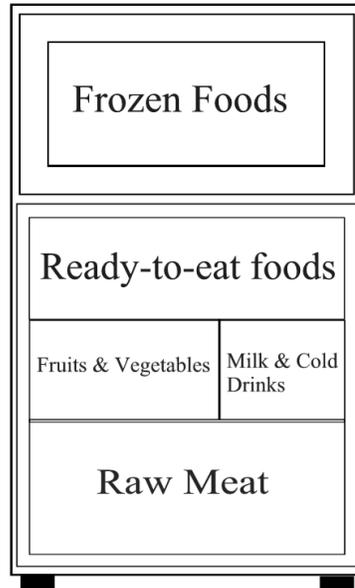
You can control cross contamination by separating raw foods from ready-to-eat products within the refrigeration unit. Some examples of when cross contamination can occur are:

- Raw food touching or dripping onto cooked or ready-to-eat foods
- Utensils that touch raw food are not cleaned and sanitized before handling ready-to-eat foods

Store your ingredients or raw materials separately from finished product to avoid cross contamination. Store unwashed or raw foods below clean, cooked or ready-to-eat foods.

Raw animal based foods such as meat, fish, poultry or their juices **must** not contaminate produce or ready-to-eat food. Store raw meat, poultry and fish separately from prepared and ready-to-eat food. If you can't store your raw products separately, limit the risk of contamination from drips and spills by storing them on the bottom shelves of the refrigerator or cooler.

Ready-to-eat foods – foods that do not require any further preparation before consumption.



Store raw meat, poultry and fish separately from prepared and ready-to-eat food. If they can't be stored separately, store them below prepared foods and fresh produce.

Figure 10.3 **Proper Refrigerator Storage**

You should never store fresh produce below fresh or frozen meat that is thawing. Store raw meat, poultry and fish in the refrigerator in the following top to bottom order: whole fish, whole cuts of beef and pork, ground meats and fish, whole and ground poultry. This way the meats requiring the highest cooking temperatures are stored on the lowest shelves.

Store food in designated storage areas. To prevent possible contamination, keep your food away from warewashing areas, restrooms and furnace rooms. Never store your food near chemicals or cleaning supplies and keep it out from under stairways and pipes.

Warewashing – the cleaning and sanitizing of equipment and utensils.

Packaging and Storage Containers

It is your responsibility as a farm direct marketer to package all food in a way that prevents contamination and damage during storage.

Follow the maximum stack height recommendation for your packaging materials. Overstacking may result in the weight of the stacked products damaging the bottom container. This increases the risk of contamination of the food in the bottom container.

Packaging materials and storage containers that are in direct contact with food **must** be constructed of food grade materials. This means that materials must be non-toxic and easy to maintain, clean and sanitize. Some examples of food grade materials include stainless steel, styrofoam and food grade plastic wrap or containers. Do not reuse packaging that is intended for single use such as styrofoam containers or plastic wrap. Never use reusable containers such as portable coolers or stainless steel mixing bowls to mix or store non-food items such as veterinary medicines, chemicals, etc.

Only food grade quality packaging can be used for your food products. A food grade container is one that will not transfer noxious or toxic substances into food and has been approved by the CFIA.

Food Grade

“Food grade” applies to packaging materials in direct contact with foods. The Food and Drug Regulations state that no person shall sell any food in a package that may be injurious to the health of a consumer. Injury may result through the transmission of a contaminant from the packaging to the food.

All your storage containers and storage units should be durable, clean, in good condition and able to withstand regular sanitizing.

Inspect all your products, packaging and storage units frequently for:

- Dirty, damaged or leaking containers and packaging
- Mould and decay
- Insect or vermin infestation and other signs of contamination



For information on acceptable packaging materials, see the document *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products* which is on the Canadian Food Inspection Agency (CFIA) website at

www.inspection.gc.ca/english/ppc/reference/cone.shtml



Evaluate Your Packaging

List all the types of packaging and containers you use. Check the CFIA website to see if they are food grade quality.

Stock Rotation and Inventory Control

The risk of contamination increases the longer food is stored, even when it's stored under proper conditions. Stock rotation prevents deterioration that could present a food safety hazard.

The First In, First Out (FIFO) rule is a standard practice for safe food storage. It states that food received, harvested or processed first should be sold first. Label your packaged, prepared and processed foods with a date of manufacture or production to help you manage your inventory.

Always store and display your new stock behind or underneath older stock. This leaves the older stock accessible so it will be sold first. Ensuring that your older food products are sold and used first is essential to avoiding spoilage. This applies to all types of food. Selling older products first also maintains the quality of the food product.

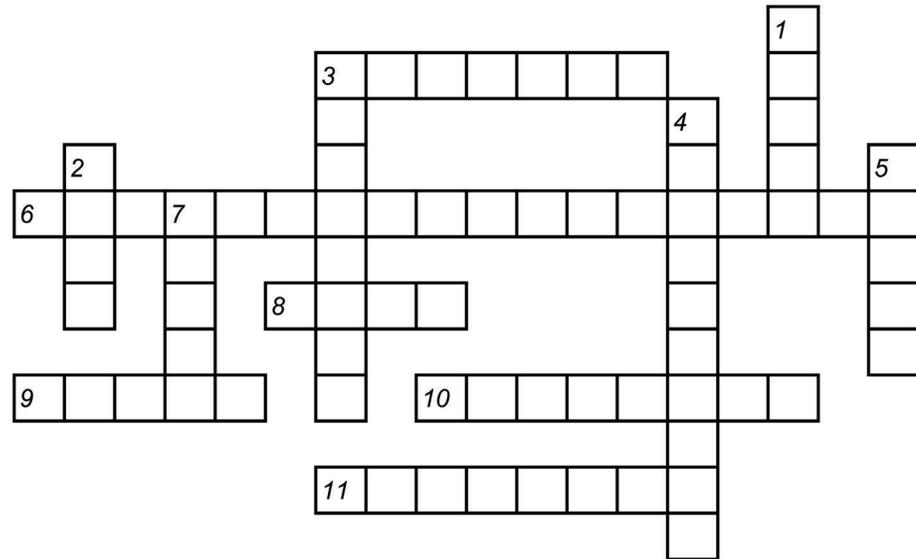
First In, First Out. If in doubt, throw it out!

Date and label all food products and store newer ones behind older items on the shelf or below older items in the freezer. Sell older products first.



Storage Crossword Puzzle

Complete the crossword puzzle below to help you review the principles in this chapter. You will find the answers at the end of this chapter.



ACROSS

- 3 To help prevent contamination, food in storage must be _____.
- 6 Is an essential part of safe food storage.
- 8 Acronym that stands for first in first out.
- 9 When storing food safely you must prevent cross _____.
- 10 It is important for storage areas to be _____.
- 11 In order to store food safely you must _____ potentially hazardous foods from cooked and ready-to-eat foods.

DOWN

- 1 Food must be stored off the _____ at least 15 cm (6 in.).
- 2 _____ is considered a potentially hazardous food and must be stored refrigerated or frozen.
- 3 Store all _____ supplies separately and away from food and food packaging materials.
- 4 Storage areas should be well _____ to help minimize condensation and cross contamination.
- 5 Storage areas must be kept _____.
- 7 Ensure that various types of _____ cannot gain entry into your storage areas.

Storing Non-Food Items

Store all your chemicals, cleaning supplies, garbage containers, toxic materials and non-food or personal items separately and away from food, packaging materials and food contact surfaces. Never store chemicals or cleaning supplies on a shelf above food, near food related supplies or any area where you prepare, display or sell food.

Keep all your chemicals and cleaning supplies, including detergents, soaps and sanitizers in their original containers. Make sure they are clearly and accurately labelled. Store in cabinets used solely for this purpose. They should be well away from food preparation and food storage areas.

Legislation requires that you lock all your chemical storage areas and deny access to anyone without proper training and authorization. Proper training reduces the risk of accidental contamination. Easy access to cleaning, sanitizing and pest control chemicals presents an opportunity for product tampering.



Figure 10.4 **Danger Sign**

Store food products in separate areas away from non-food items. Storage areas should be designated with signage.

Post appropriate signs on all chemical storage units.

Keeping Records

Records are critical for you to monitor your storage conditions and show due diligence. Your record keeping system should include:

- Temperature logs where you record temperatures of foods checked in storage and throughout the market day. Temperature logs also should indicate what corrective actions were taken, if necessary and when
- Freezer/refrigeration unit temperatures
- Cleaning and sanitizing records for storage units and reusable containers
- Inventory records include ingredients, food use supplies and finished products, etc.
- Staff training



Examples of inventory records and temperature logs can be found in Appendix F: Record Templates.

Staff Training

Train all your staff so that they understand the importance of the various storage conditions for each type of food product you produce. They should know how to:

- Properly store food to prevent contamination
- Maintain proper temperature control and temperature logs
- Maintain inventory control
- Store non-food items
- Take action in the event that appropriate storage conditions are not maintained and contamination occurs



Food Safety Plan – Storage

The goal of a storage plan is to ensure that all your food products and packaging materials are stored and handled in a sanitary manner that will prevent contact with contaminants.

Your written plan should document:

- How to receive product into storage, including returned product
- Proper storage conditions and handling practices for all food types
- How and when to monitor temperatures during storage and where to record this information
- How product should be rotated in storage
- Proper handling and storage of non-food items including packaging materials
- What packaging materials must be used for all food products
- What must be done in the event that food becomes contaminated (deviation and corrective actions)
- Staff training



Take the time to continue developing your food safety plan. Create a section in your binder for Storage. Use the information above to build the storage component of your food safety plan.

Summary

Your food products may become contaminated or may not reach the market in a suitable condition unless effective control measures are taken during storage. Measures **must** be taken to:

- Provide an environment that effectively controls the growth of microorganisms by controlling storage temperatures
- Protect food from potential contamination by using the correct packaging and storage containers
- Monitor temperatures of food and storage units
- Store food and food handling materials in designated areas away from non-food items and chemicals
- Prevent contamination of stored packaging materials
- Control inventory through First In, First Out (FIFO) stock rotation

As a farm direct marketer, farmers' market vendor or regional cuisine supplier, it is your responsibility to ensure that food reaches the market safely and your staff has been instructed on how to properly store food at the market and in inventory.

Market Manager Responsibilities

Managers of Alberta Approved Farmers' Markets need to monitor storage conditions at the market to ensure that food is handled safely.

Food needs to be held at the proper temperatures. Check to see that refrigerator and freezer units are operating at the proper temperatures.

Food products need to be stored off the ground in clean containers. Non-food items including personal belongings need to be stored away from food products.

Food grade packaging materials and storage containers must be used. Single use containers such as styrofoam trays or paperboard containers must not be reused.

If you see a problem, inform the vendor and suggest corrective actions.



Food Safety Checklists

Review the Weekly Food Safety Checklist for Market Managers in Appendix M. Add any storage points that are missing for your market. Remember you and your vendors should be using the checklists every market day.

What's Next

Why is it important to have a clean, well maintained market vehicle? What do farm supplies and pets have in common? To learn the answers to these questions and find out why it's so important for your food safety plan to include a transportation component, read Chapter 11: Transportation.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054 Dial 310-0000 first for toll free access.



Chapter Review

1. What temperature range should refrigeration units be kept at?

2. A farmers' market manager needs to check that food is packaged in what type of packaging material? _____
3. What food products should never be stored on the top shelves of a refrigerator? _____ and _____
4. What is a standard practice for inventory control?

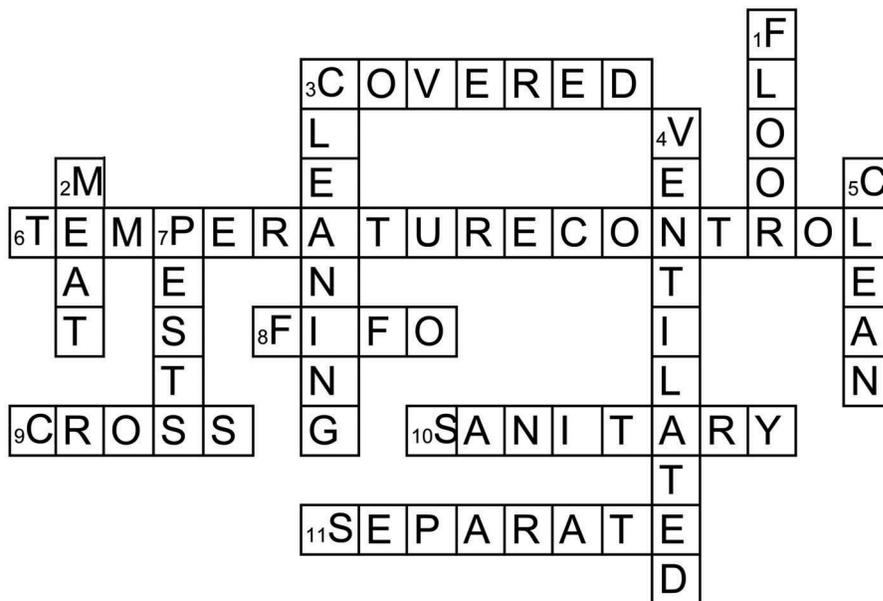
5. What type of food product must be stored at 4°C or less?

6. What two storage records must be kept by a farm direct marketer? _____ and _____

Answers to Chapter Review

- 1) 0° - 4°C
- 2) food grade packaging
- 3) raw meat and poultry records
- 4) FIFO-First In, First Out
- 5) potentially hazardous foods
- 6) temperature logs and inventory

Answers to Crossword Puzzle



Chapter 11:

Transportation

Learning Objectives

After completing this chapter, you will be able to:

- Identify the potential risks to food products while in transit to market
- Protect products from potential contamination during transport
- Develop a transportation plan including written standard operating procedures and record templates

Chapter 11: Transportation



Liane and Pam Clean Up!

Liane and Pam load harvested produce, along with the soil, pests, stones, etc., directly into their trucks in the field. They also use the vehicles to carry farm supplies including pesticides, fertilizers and lubricants back from town. Sometimes they let their new puppy ride along but only in a crate in the box.

Liane and Pam always vacuum and wash their truck and canopy before loading the clean produce for transport to market. Their puppy stays home. They know that it's important to keep the truck clean to minimize the risk of contamination from non-food products.



Elizabeth and Mike Keep Cool

Currently, Elizabeth and Mike transport the frozen poultry and pork to the local market on Thursdays. They use a pickup truck with a freezer on the back that is powered by a generator. The same truck is used to transport their poultry to the Saturday market in the city in central Alberta. With the addition of pork to their product line at the urban market, Mike and Elizabeth realize they have to increase the freezer capacity of their vehicle.

With the potential growth of their business and their son's growing interest in the family enterprise, they decide to purchase a large cube van with a refrigeration unit rather than a second freezing unit for their pickup. This vehicle will be used to transport product to the large urban market.

Mike and Elizabeth research the requirements and investigate the costs of using a federally registered facility for their pork. They learn that a federally inspected product has to remain in the federal system. So, if they store their federally inspected pork in a provincially registered facility in Alberta, they cannot legally sell their products in British Columbia.



Selling their meat and poultry products at the British Columbia farmers' market means that Mike and Elizabeth will have to transport from two different facilities. Their pork products will come from the federally registered facility in Alberta. They will then travel to B.C. to load the chicken from the provincially registered storage facility and continue on to the market.

Their other option is to haul all their animals, birds and pigs to British Columbia and have them slaughtered, processed and stored there. Mike and Elizabeth decide to investigate this second option. They need to find the appropriate facilities and evaluate the costs for each option. The search is on...

Hazards

Transportation of most food products to market presents primarily three types of hazards. Food can become contaminated by chemical hazards such as:

- Residues from cleaning products used to clean the vehicle or container
- Non-food materials transported unprotected with food in the same load
- Residues from previous loads of farm supplies transported in the market vehicle

Food is subject to biological contamination by microorganisms in numerous ways, such as when:

- Food products are transported with pets or other animals
- Staff has poor hygienic practices
- Temperature control is inadequate

For example, the growth of *Salmonella* on fresh chicken if transported to market unrefrigerated is a biological hazard.

During transport, food can also be contaminated by physical hazards including:

- Pieces of metal or glass contaminating bulk goods
- Wood slivers from pallets

Bulk goods are more susceptible to physical hazards during transit than packaged products.

Transportation Practices

All your efforts to safely produce your food products can be undone if they are not transported safely to market. Your raw materials, ingredients, packaging and final products should be handled and transported in a sanitary manner to prevent contamination.

When transporting food, you need to consider two food safety issues:

- Keeping food at the proper temperatures, especially potentially hazardous foods
- Protecting food from contamination

Temperature Control

When transporting potentially hazardous foods, they **must** be kept out of the danger zone. Cold foods **must** be kept at or below 4°C and hot foods at 60°C or hotter. In most cases it is best if you transport your food at cold temperatures and reheat at the market, if required. Frozen food **must** be transported at temperatures that do not permit thawing. Transport perishable food that may be damaged by freezing, such as fresh fruits and vegetables, at temperatures between 0-4°C.

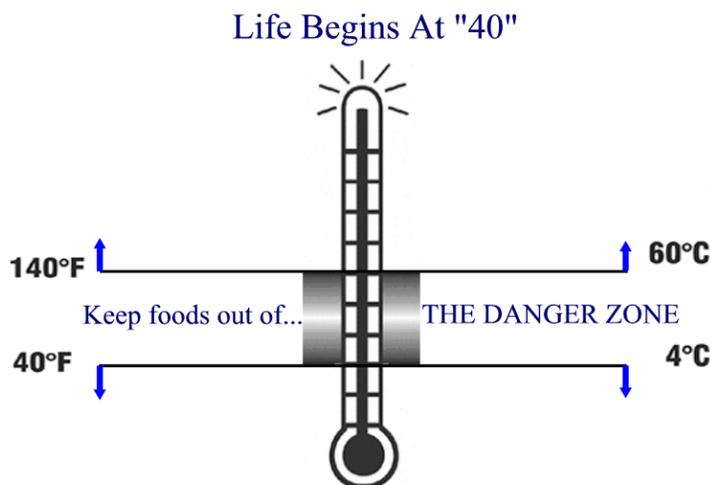


Figure 11.1 **Danger Zone Temperatures**

Perishable – any food product or ingredient that is susceptible to deterioration or loss of quality when subjected to temperature abuse.

Potentially hazardous food – any food that is capable of supporting the growth of pathogenic microorganisms or the production of toxins, has a pH greater than 4.6 and a water activity (A_w) of 0.85 or more.

pH – scale by which the acidity and/or alkalinity of a food is measured. The lower the pH number, the more acid is in the product. pH values range from 0 to 14. The value for pure distilled water is 7, which is considered neutral.

Water activity – the amount of free water in the food that is available to pathogens; denoted by the symbol A_w . Pure water has a water activity of 1.0.

Potentially hazardous foods must be transported at proper temperatures. Maintaining the proper temperatures while transporting perishable products will also maintain the shelf life of these products.

During transit keep your food out of the danger zone. Transport potentially hazardous foods at 4°C or less.

Keep cold foods cold and hot foods hot.

Pre-cool food products before transporting to market. Use portable coolers if refrigerated vehicle is not available.

Load and unload the vehicle as quickly as possible to maintain desired temperatures.

If the journey to the market is short, you can use insulated coolers to keep the food cold. If the trip is long or if outdoor temperatures are high, you may need to add frozen commercial gel packs or ice packs to the coolers. Ice **must** be made with potable water and should be bagged to prevent melt water from contaminating food.

Food products **must** be cooled to 4°C prior to transporting. To help maintain temperatures, place only pre-cooled food into the insulated containers. Do not count on the cooler to bring down the temperature of your food products. Fill the insulated containers as quickly as possible and close as soon as they are filled. Keep your containers closed until the food products need to be removed at the market.

Insulated containers **must** be:

- Clean and in good condition
- Used only for food
- Stored in areas where they can't become contaminated (kept away from chemicals, raw ingredients, pet food, animals, fuel, etc.)

Upon arrival at the farmers' market, unload your vehicle as quickly as possible. Place your potentially hazardous products into temperature controlled equipment. If refrigerators or freezers aren't available, keep your products in the coolers.

Preventing Contamination

To prevent contamination, cover your food products during transit. Use food grade containers with lids or apply plastic film over the containers. Materials used to cover food should be suitable for food contact (food grade) to ensure that they don't contain any chemicals that could leach into the food.

Food Grade

“Food grade” applies to packaging materials in direct contact with foods. The Food and Drug Regulations state that no person shall sell any food in a package that may be injurious to the health of a consumer. Injury may result through the transmission of a contaminant from the packaging to the food. This could include fragrances, wood chips, paint or chemical components of plastics.

Potable water - water that is safe for human consumption. It meets provincial water quality standards.



For more information on storage and suitable packaging materials see Chapter 10: Storage.

Before loading your packaged foods into containers, inspect each container to ensure that it is clean and free of contaminants. If you are using reusable containers to transport your products, they should be durable, clean and able to withstand sanitizing. Packaged products don't need additional covering but they should be transported in such a way to protect the packaging from damage or contamination.

All of your equipment, utensils and food sampling materials to be used at the market **must** be transported in covered containers to prevent contamination.

Keep the vehicles you use for transporting food clean and in good repair. The vehicle body or trailer should have no holes that might allow heat, dust, mice or other contaminants into the cargo area.

Inspect the vehicle for cleanliness, odours, obvious dirt and debris before loading. If the vehicle was recently used to transport pesticides, fertilizers, chemicals, trash or pets, it **must** be cleaned thoroughly. Cleaning methods will depend on the unit, containers, food product and the nature of the contaminant. Write down the cleaning plan for each vehicle.



For more information on cleaning and sanitizing see Chapter 9: Sanitation.

All food, equipment and utensils must be transported in covered containers to prevent contamination.

Keep vehicles in good repair. Prior to loading, inspect the vehicle for cleanliness, odours, obvious dirt and debris. Food products must be transported to market in a clean vehicle.

Food grade container – one that will not transfer noxious or toxic substances into the food and has been approved by the CFIA.

Sanitize – a process of heat or chemical treatments to reduce the level of microorganisms to a safe level.

Prevent damage and contamination of food and packaging as you load and unload your vehicle. Separate food and non-food items during transit. DO NOT transport chemicals or pets with food.

Contaminated food must be discarded. Revisit your procedures to determine what went wrong and how it can be prevented.

Load, arrange and unload your products in a manner that prevents damage and contamination of food and packaging materials. Keep loading times as short as possible to prevent temperature changes. Deliver directly to the market and unload. Other errands can be done after the market but only if you no longer are transporting potentially hazardous or perishable food items.

Place the filled containers in the coolest part of your vehicle. If the vehicle is air conditioned, it may be better to transport food in the vehicle rather than in the trunk or the back of the truck. If you use a refrigerated cargo vehicle to transport perishable foods, pre-cool the vehicle before loading.

Load perishable products like produce off the floor of the vehicle to reduce the risk of physical damage and contamination. This will also ensure good air movement and better temperature control.

If food and non-food items are transported together, you **must** establish procedures to prevent contamination of the food. Restrict the types of non-food items that you transport. Do not transport chemicals and pets with food products.

If food becomes contaminated during transit:

- Discard contaminated product in a way that prevents it from being consumed
- Keep a record of the contaminated products and method of disposal

Keeping Records

Records enable you to monitor your activities. Your records should include:

- Temperature logs (temperature records before and after delivery)
- Cleaning records for vehicles and reusable containers
- Staff training



Records List

Make a list of the records you need to keep for each food type and vehicle.



Examples of record templates can be found in Appendix F: Record Templates.

Staff Training

Train your staff in hygienic handling of food during transit. Make sure they understand why safe handling is important to prevent foodborne illness. They should know how to:

- Properly load and unload the vehicle
- Protect the food products from contamination during transit
- Maintain proper temperature control
- Properly clean and sanitize the vehicle
- Dispose of food that has become contaminated
- Complete the required records at the appropriate time



Train to Transport

What are the various ways you can use to train your staff on how to transport your food safely?

Are your records up-to-date?



Food Safety Plan – Transportation

The goal of a transportation plan is to ensure that all products arrive safely at the farmers' market or other farm direct venue in a sanitary manner that prevents direct and indirect contact with contaminants. The cleanliness of your transportation vehicles is important.

Your written transportation plan should include:

- How to inspect vehicles prior to loading
- What vehicles are to be cleaned, and frequency and method of cleaning
- Who is responsible for cleaning and sanitizing
- Procedures for loading vehicles
- Acceptable transportation practices
 - How to transport non-food materials and food products
 - Identify what materials are not to be transported with food
- How temperature control is to be maintained
- Vehicle maintenance schedule including who is responsible
- What information is to be recorded and where
- What is to be done in the event that a problem occurs
- Staff training



Take the time to continue developing your food safety plan. Create a section in your binder for Transportation. Use the above points to build the transportation component of your food safety plan.

Summary

Your food may become contaminated or may not reach the farmers' market in a suitable condition unless effective control measures are taken during transport. It is your responsibility to:

- Protect food from damage and potential contamination
- Provide an environment that effectively controls the growth of microorganisms. Proper temperature control is crucial. Potentially hazardous foods must be transported at safe holding temperatures of 4°C or below
- Keep vehicles clean and free of contaminants. Vehicles and reusable containers should be inspected prior to each use
- Dispose of food properly in the event of contamination

Market Manager Responsibilities

As a manager of an Alberta Approved Farmers' Market, it is your responsibility to maintain an accurate vendor listing for each market day in the event of a food safety complaint or product recall. You need to monitor the following activities at the market to ensure that food is transported safely:

- Vendor vehicles are clean and free of contaminants
- No pets were transported in the vehicle with food products
- Food products are transported in clean, food grade containers
- Vendor products are transported under adequate temperature control
- Vendors maintained adequate separation between food and non-food items during transit



Food Safety Checklists

Use the Weekly Food Safety Checklist for Market Managers in Appendix M to help you monitor your market. Add any transportation issues that are missing for your market. Remember you and your vendors should be using the checklists every market day.

What's Next

Do thermometers need to be calibrated? Do you know what makes a good food contact surface? Can you use a crock pot at the market? Read on to find the answers to these questions and more in Chapter 12: Equipment.



Resources

If you need more information about transportation or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054 Dial 310-0000 first for toll free access.



Chapter Review

Please answer True or False to the following statements.

1. Insulated portable coolers are suitable for short-term storage of food. _____
2. Potentially hazardous foods must be transported at safe holding temperatures of 8°C or less. _____
3. Reusable totes are suitable for transporting fruits and vegetables to market. _____
4. The farmers' market manager only needs to be concerned about how food products are handled at the market. _____
5. A food grade container refers to food packaging that is edible. _____
6. A food safety plan needs to identify who is responsible for inspecting a vehicle before it is loaded for market. _____

Answers to Chapter Review

- 1) **True**
- 2) **False**, transport temperatures for potentially hazardous foods are 4°C or less
- 3) **True**, provided that the totes are cleaned and sanitized before reuse
- 4) **False**, a manager needs to be concerned about how the food is produced and transported to market
- 5) **False**, food grade containers are non-toxic, easy to clean and approved by CFIA
- 6) **True**

Chapter 12:

Equipment

Learning Objectives

After completing this chapter, you will be able to:

- Identify ways to protect food from contamination through proper equipment use
- Link the importance of regular maintenance and repair of equipment to food safety
- Understand the importance of accurate thermometer use and calibration
- Understand the importance of maintaining an equipment repair and maintenance log
- Develop a food safety plan for your equipment including standard operating procedures and record templates

Chapter 12: Equipment



Inspection Reveals Broken Thermometer

Each Tuesday Mike inspects all their market equipment and completes any necessary repairs. He tries to review their equipment repair and maintenance schedule regularly and implements any required actions.

Before loading the truck, Mike takes a few minutes to check the calibration of the metal stem thermometers he and his family use to record the temperature of their meat products for sale at the market. He discovers that one thermometer registers colder than the actual temperature. As the thermometer does not have a calibration nut, he throws it out and takes a replacement one from his inventory. He checks that it's calibrated accurately and records the thermometer temperatures in his records.

Mike gets the small freezer unit in the back of their pickup truck running before filling it up. When the freezer temperature reaches -18°C , he fills it with his frozen meat products. An hour later he rechecks that the freezer temperature is still -18°C and records that in the temperature log before transferring the freezer to battery power for the trip to the market. When Mike arrives at the market, he connects the freezer to generator power, rechecks the freezer temperature and notes it in the temperature log.

After setting up for the market, Mike washes the metal stemmed thermometers in hot soapy water and sanitizes them in a bleach solution. As he distributes the thermometers to each of his sales team, he reminds everyone to clean and sanitize them between each use.



Food can become contaminated from improperly handled or poorly maintained equipment.

Hazards

Equipment used at any farm direct marketing venue including Alberta Approved Farmers' Markets can be contaminated by:

- Chemical hazards from residues of lubricants, refrigerants or toxic chemicals if inappropriate metals such as cadmium or nickel are used to manufacture equipment
- Biological hazards from microbial contamination if equipment is not cleaned and sanitized properly between each use or is difficult to clean
- Physical hazards such as metal washers and nuts that may fall off equipment during cleaning or food preparation, pieces of metal from broken cutting blades or metal fragments from poorly maintained equipment

Equipment Practices

Improperly handled or maintained equipment can contaminate your food products. You need to ensure that you and your staff have the necessary skills and training to operate and maintain the equipment. In addition, you need to implement an equipment repair and maintenance schedule and sanitation program to keep food safe.

The food safety issues linked to equipment that you need to consider are:

- Proper design and installation
- Appropriate maintenance and repair of market equipment, including tables, sampling utensils, display shelving, food storage containers, etc.
- Proper cleaning and sanitizing of equipment

Equipment Design and Installation

Your equipment must be able to do the job and meet the necessary requirements. Using the wrong equipment, especially with potentially hazardous foods, may lead to time/temperature abuse and increase the risk of foodborne illness.

Equipment used to cook, heat, cool or freeze food must be designed to achieve the required temperatures as rapidly as possible and then maintain the desired temperatures. For example, cooking frozen meatballs in a crock pot at the market for sampling may result in contamination from pathogenic microorganisms. This is because the crock pot cannot adequately heat the product within the allowable timeframe. Crock pots may only be used to keep hot foods hot. Check with your regional health authority to make sure they are permitted in your market.

Choose equipment that is easy to clean and sanitize. Your equipment should also be easily accessible for maintenance and inspection. The design should prevent contamination by lubricants from motors, bearings, etc. All welded equipment **must** have smooth continuous joints.

Select equipment and utensils that are designed for food production and constructed of appropriate materials. Nickel and cadmium must not be used in food equipment since they are heavy metals that can leach into your food and cause foodborne illness.

Install your equipment in a manner that prevents contamination of food. Provide enough space around the equipment so that you have easy access for cleaning and maintenance. Ensure you have enough room so that adjacent floors, walls, ceilings and other surfaces can also be easily and effectively cleaned. Install your equipment at least 50 cm (20 in.) away from the wall and off the floor. For both sanitary and safety reasons, do not string electrical cords across the floor or work site.

Equipment used to cook, heat, cool or freeze food must be designed to achieve the required temperatures as rapidly as possible and maintain them.

Equipment should be installed so that there is easy access for cleaning and maintenance of the equipment and the surrounding area.



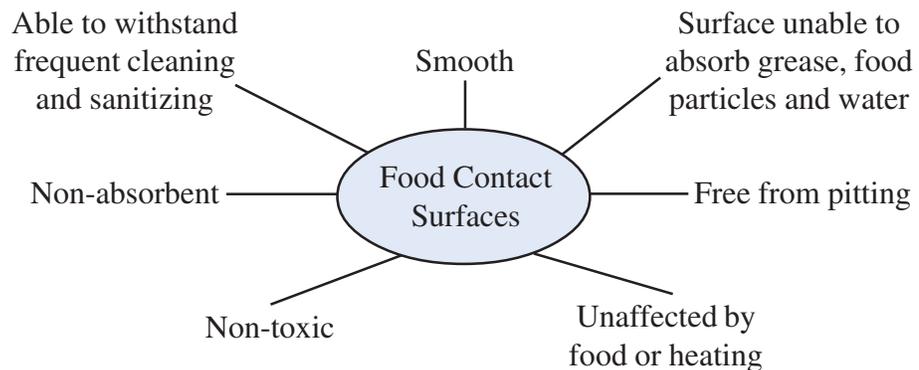
Equipment Design Checklist

Check each piece of your equipment to determine if it meets the following conditions. Develop a plan to replace equipment that fails to meet the guidelines.

- Easy to clean and sanitize
- Constructed of approved materials
- Easily accessible for maintenance
- Meets requirements for cooking, heating, cooling or freezing food
- Installed to prevent potential contamination

Food Contact Surface Considerations

Surfaces that contact food **must** meet the following conditions:



Food contact surfaces must be smooth, non-absorbent, non-toxic and able to withstand frequent cleaning and sanitizing.

Do not use copper, cast iron, lead glazed utensils, galvanized metal and preserved wood as the heavy metals or preservatives may move into the food. Wood is not generally acceptable as a food contact surface except for close-grained hardwoods in cutting boards, rolling pins or wooden paddles.

Single service items should be used once and then discarded.

Use single service items such as styrofoam containers, plastic utensils and portion cups once and properly dispose of them. When produced, styrofoam is considered clean and sanitary and safe to use. However, once used it cannot be properly cleaned and sanitized for re-use because the surface of styrofoam is not smooth and non-absorbent. This type of material definitely must not be reused.

Single service – utensil designed to be used only once and then discarded.

Coating materials used on food contact surfaces must be non-toxic, resistant to chipping and cracking, and easy to clean. Approved food grade chemicals, lubricants, coatings and paints **must** be used on equipment in contact with food.



A complete list of approved materials can be found in *Reference Listing of Accepted Construction Materials, Packaging Materials and Non-Food Chemical Products* published on the CFIA website at www.inspection.gc.ca/english/ppc/reference/cone.shtml

Preventive Maintenance

Maintain your equipment in good repair so that it functions as it should and prevents contamination of the food. Do not repair using string, wire, cardboard or other temporary materials. Replace damaged equipment and utensils. Keep metal surfaces free from rust, flaking paint or other loose surface coverings.

According to the Alberta Food Retail and Foodservices Code, all food contact surfaces *must* be maintained in a clean and sanitary manner. Your cutting boards and butcher blocks are subject to scratching and scoring. Resurface them when they no longer can be cleaned and sanitized effectively or discard if they cannot be resurfaced. Do not use wood or scored synthetic cutting boards with meat, fish, poultry or other potentially hazardous foods. You **must** clean and sanitize work surfaces, thermometers, utensils and equipment between each use.



The Alberta Food Retail and Foodservices Code can be found at www.health.gov.ab.ca/professionals/ (Click on the first bullet, *Alberta Food and Foodservices Code*).

Splinters on tables, chipped cutting boards, cracked linings in insulated coolers, torn table cloths, loose nuts on equipment, etc. all increase the risk of contamination. It's very difficult to thoroughly clean and sanitize under tears, splinters, nuts and screws or in cracks, breaks and chips so these areas harbour disease causing microorganisms. Inspect your table, market supplies and equipment prior to the start of each market day. Repair or replace as required. Use only food grade materials in the repair and maintenance of all equipment and market supplies.

All food contact surfaces and equipment must be maintained in a clean and sanitary manner.

Replace or resurface cutting boards and butcher blocks when they become scratched or scored and cannot be cleaned and sanitized effectively.

Monitoring devices such as temperature gauges and scales should be calibrated according to the manufacturer's instructions. Scales used to weigh products sold by weight at the market *must* be calibrated and inspected.



For more information on scales and their inspection under the *Weights and Measures Act*, see Chapter 6: It's the Law.

Your equipment must be maintained in a clean and sanitary manner. Developing and following a written preventative maintenance program for your equipment will help ensure that this is an ongoing activity.

Develop and implement a written preventative maintenance program.

Written Preventive Maintenance Program

A written program should include:

- List of all the equipment used
- Preventive maintenance schedule for each item
- Detailed maintenance activities for each item
- Person responsible for maintaining equipment
- Method of monitoring
- Verification activities
- Records to be kept
- Frequency and method of calibrating equipment

Dirty or improperly cleaned equipment is one of the most common carriers of foodborne illness microorganisms.

Keep It Clean

Equipment (cutting boards, fry pans, meat slicers, insulated coolers, refrigeration units, etc.), materials (table top, table cloth, shelving, etc.), and utensils (knives, spatulas, serving dishes, etc.) that contact foods, especially potentially hazardous foods such as raw fish, meat, poultry and dairy, are considered to be contaminated by microorganisms. If the equipment then contacts another food product before it has been cleaned and sanitized, cross contamination may result. For this reason, you must thoroughly clean and sanitize all equipment including tables and freezers each day before market start up. In addition, clean utensils and equipment used during the market between each use.



For information on proper cleaning and sanitizing methods see Chapter 9: Sanitation.

Preventing Cross Contamination Through Equipment

To prevent contamination of food, cover and keep garbage cans away from food preparation and storage areas. Equipment and utensils used to handle inedible material must not be used to handle food. Protect small equipment from contamination by keeping it inverted or covered in storage. Allow sufficient space to clean around and under equipment.

Locate equipment on your market table away from any source of contamination. Clean and sanitize food contact surfaces of equipment to be used throughout the market day. For example, a meat slicer or a butcher block table top used to prepare food samples should be cleaned and sanitized at the beginning of each market day and between each sample batch or a minimum of every four hours. Clean equipment surfaces that do not contact food often enough to prevent them from accumulating dust, food residues or other debris.

Equipment **must** be durable. It should be able to be disassembled for maintenance, cleaning and sanitizing. Disassembling the equipment regularly allows you to monitor and inspect for pests and other contaminants. Inspect all equipment for damage prior to each use. Repair equipment as recommended.

Temperature Control Equipment

Microorganisms grow most rapidly between 4°C and 60°C, temperatures in the danger zone. Ensure that the equipment you use to heat or cool foods can do so quickly and maintain the required temperatures.

“Our walk-in freezer simplified the process of handling and storage as well as inventory control. We implement daily checks on our walk-in freezer to make sure the temperature and humidity are controlled at all times. Educating our customers about how we operate created great loyalty.” Greg Sawchuk, Muriel Creek Cattle Company

Freezers **must** be able to maintain a temperature of –18°C or less while refrigerators **must** operate between 0°C and 4°C. Overloading your appliances prevents adequate air circulation and causes temperatures to fluctuate. To ensure the unit is operating effectively, monitor the temperatures in several areas within each of your units to identify warm spots. Although the warmest area is usually near the door, you need to monitor the temperature throughout the entire unit.

Cooling and heating equipment such as freezers, refrigerator units, electric frying pans, griddles, toaster ovens, etc. **must** operate properly and be equipped with an accurate thermometer to ensure correct product temperature. Use and calibrate thermometers as recommended by the manufacturer. Use a hand held thermometer to verify that each small appliance you use achieves the temperature indicated. Keep calibration and temperature records for each piece of equipment.

Using a Thermometer

Keeping food products, especially potentially hazardous products, at proper temperatures is crucial to preventing foodborne illness. You and your employees **must** closely monitor food temperatures and holding times. You cannot judge temperature by feel or sight!

Use a hand held, metal stemmed thermometer to monitor the temperature of food frequently throughout the market day. Do not use thermometers with a glass sensor or stem unless they are encased in a shatterproof sleeve that protects food from contamination should the thermometer break.

Monitor operating temperatures of all equipment.



Figure 12.1 **Types of Thermometers**
 (1. Digital Instant-Read, 2. Thermocouple thermometer,
 3. Dial Instant-Read bimetal coil thermometer)

To achieve an accurate reading, place the thermometer between two items in the freezer or refrigeration unit or lay it on top of products in a portable cooler. Avoid puncturing the food packaging or damaging the product with the thermometer. If the food item is not in a sealed container or wrapping, insert the stem of the thermometer into the thickest part of the food product to evaluate product temperature.

Clean and sanitize your thermometer before each use to prevent cross contamination. Verify the accuracy of the thermometer regularly. Calibrate the thermometer at least once every two weeks and whenever it has been dropped, bumped or jarred. Replace frequently if it cannot be calibrated.

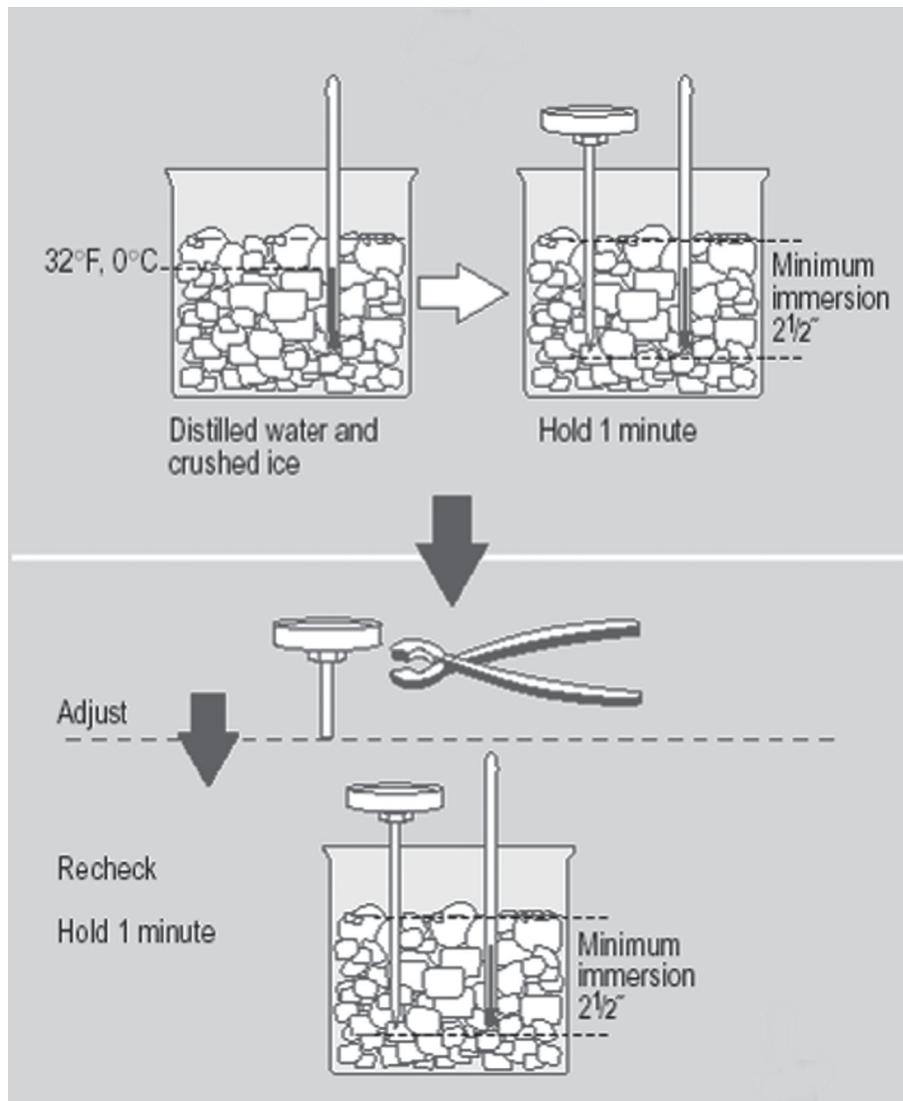
Different types of thermometers can be used for monitoring temperatures of equipment or food.

A thermometer that can be calibrated should provide years of use and only be replaced when it can no longer be cleaned or calibrated.

Calibrating a Thermometer

Use this simple method to test the accuracy of a hand held thermometer.

- Step 1** Use a clean container that is as deep as the probe portion of the thermometer.
- Step 2** Pack the container with ice. Crushed or shaved ice is best as it minimizes the spaces between the ice chunks and provides more accurate results.
- Step 3** Fill the container with cold water to form a thick slurry. This mixture will maintain a temperature of 0°C as long as it is mostly ice with some water.
- Step 4** Insert the sensing tip of the thermometer to a depth of at least 6 cm (2.5 in.) into the ice/water mixture and allow the thermometer to rest for two to three minutes. Wait until the reading has stabilized (indicating arm should not be moving).
- Step 5** The temperature should read 0°C ($\pm 0.5^\circ\text{C}$).
- Step 6** If the thermometer has a calibration nut near the dial, and the dial doesn't read 0°C, turn the nut until the needle is on 0. Less expensive thermometers do not have a calibration nut. If the dial reading is out by two degrees C or more, replace the thermometer.



Source: Kansas State University publication “Thermometer Calibration Guide”

Figure 12.2 **Thermometer Calibration Method for Cold Process**
(for use on bimetal coil thermometers)



Calibrating Thermometers

Now that you know how to calibrate a thermometer, this is a good time to check the accuracy of all your thermometers. Replace as required. Remember to record the readings and your activities in your logs.

Keeping Records

Records enable you to monitor your activities. Your written records should include the following:

- Equipment inspection and maintenance records
- Equipment temperature records
- Thermometer calibration records; include corrective action steps if required
- Staff training



Examples of temperature logs can be found in Appendix F: Record Templates.

Staff Training

Train your staff in the proper use of all equipment and the reasons why correct operation is important. They should know:

- What equipment to use for specific tasks
- How to operate the equipment correctly
- How to properly clean and sanitize equipment and utensils
- How to monitor temperatures to ensure that equipment is operating properly
- How and when to calibrate equipment
- How and when to perform required maintenance of equipment
- What to do in the case of equipment malfunction
- Record keeping requirements



Food Safety Plan – Equipment

This section of your food safety plan should focus on how to properly use equipment and utensils, and what needs to be done to keep them in good condition and repair.

Your written program should include:

- Instructions on how to properly use the equipment and utensils
- How to inspect equipment to ensure that it is operating properly and temperature control is being maintained
- A list of all the equipment requiring regular maintenance, as well as when and what is to be done, why it must be done and by whom
- Instructions on how and when to inspect equipment for damage and buildup of food or other materials that could contaminate the food
- A list of equipment needing to be calibrated including when and how it is to be done and by whom
- What is to be done in the event that a problem occurs at any time with the equipment
- What information is to be recorded, when, where and by whom



Take the time to continue developing your food safety plan. Create a section in your binder for Equipment. Use the information in this chapter to build this component of your plan.

Summary

Food may become contaminated or may not reach the market in a suitable condition unless effective control measures are taken when using equipment, utensils and materials. You can protect food from contamination by:

- Ensuring that equipment is designed and used for its intended purpose
- Ensuring all temperature control equipment operates properly and potentially hazardous foods in particular are not exposed to temperatures in the danger zone (between 4°C and 60°C)
- Calibrating and using accurate thermometers to monitor product temperatures
- Keeping equipment clean and in good repair

It is your responsibility as a farm direct marketer to ensure that food reaches the market safely and is not contaminated by improperly cleaned and sanitized equipment, inappropriately maintained equipment or uninformed staff.

Market Manager Responsibilities

As an Alberta Approved Farmers' Market manager, you need to monitor market and vendor equipment at the market to ensure that food is handled safely.

- Are tables in good repair?
- Are tables cleaned and sanitized prior to market setup?
- Do vendors have a written maintenance program for their equipment?
- Does all equipment look clean and in good repair?
- Are equipment thermometers easy to read and accurate?
- Are vendors using thermometers to track correct product temperature?



Food Safety Checklists

Use the Market Startup and Weekly Food Safety Checklists for Market Managers in Appendix M to help you monitor your market. Add any equipment issues that are missing for your market. Remember you and your vendors should be using the checklists every market day.

What's Next

What role does the Happy Birthday song play in proper handwashing? Why should staff not eat, chew gum, smoke or spit at the market stall? Are gloves worn to protect hands from contamination? Should staff work the market when they have a cold or flu? Read Chapter 13: Personal Hygiene to discover the answers to these questions as well as how the personnel component of your food safety plan can protect your business.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.



Chapter Review

Take a few minutes to review the chapter. Using the words below, fill in the appropriate blank.

Motors Temperatures Equipment Dry Clean Pasteurized
Use Dirty Activate Calibrate Durable Tables Applicators
Oiled Multiple Single Light Bulbs Sanitary

1. To check the accuracy of an instrument is to _____.
2. _____ items must be discarded after use.
3. A farmers' market manager must ensure that _____ are in clean and in good repair. Vendors may use cloths to prevent contamination from those that are slightly damaged.
4. You will be certain that a refrigerator is functioning if the _____ are monitored.
5. All equipment must be maintained in a _____ and _____ manner.
6. _____ is one of the most common carriers of microorganisms.

Answers to Chapter Review

- 1) Calibrate
- 2) Single use
- 3) Tables
- 4) Temperatures
- 5) Clean, sanitary
- 6) Dirty equipment

Chapter 13:

Personal Hygiene

Learning Objectives

After completing this chapter, you will be able to:

- Link the importance of good personal hygiene including cleanliness to food safety
- Appreciate the value of training personnel in good hygiene practices
- Develop a plan that includes standard operating procedures and record templates for your employees regarding hygiene issues

Chapter 13: Personal Hygiene



No Coughs or Sneezes Please!

Liane and Pam hire their niece, Jane, and nephews, Jason and Kevin, to help at the markets during the busy summer months. A week before the first market they hold a staff training day on sales techniques, production practices, food safety, personal hygiene, record keeping and special ordering. Everyone knows not to chew gum, wear jewelry, smoke and eat while at the market booth. They are taught proper handwashing and are frequently seen at the urban market scrubbing their hands to the tune of Happy Birthday. Food safety is also a component of the training for their field and greenhouse staff.

After working at the outdoor markets during a heavy July downpour, Jane comes down with a bad cold. She arrives at the market next week feeling poorly. By the time setup is completed, Jane is sneezing and coughing. Concerned that Jane's sneezing will contaminate the produce, Liane sends her home and works the market with Jason.



Good personal hygiene is essential for preventing foodborne illness; it also makes good business sense.

Hazards

Proper personnel procedures and training for food safety reduce the risk of contamination from hazards. Some sources of these hazards are:

- Biological hazards from contamination with microorganisms from improperly washed hands, soiled clothing and poor personal hygiene
- Chemical hazards from contamination with cleaners and sanitizers that are not properly rinsed from hands or gloves before handling food
- Physical hazards from foreign objects such as pens, pencils, false fingernails or jewelry that fall into food

Personal Hygiene

People are the most important link in preventing foodborne illness. The personal cleanliness of all food handlers is extremely important in the operation of all food establishments. Good personal hygiene is not only essential to preventing foodborne illness, it also makes good business sense. Customers like to deal with personnel who take hygiene seriously and practice safe food handling.

Hygiene – conditions and practices followed to maintain health, including sanitation and personal cleanliness.

Cleanliness and Conduct

As a farm direct marketer you must do all you practically can to make sure that people in your establishment do not contaminate food. This includes you and your staff but also others who come on site such as trades people, visitors and customers. Everyone within a food establishment must maintain an appropriate degree of personal cleanliness and take precautions to prevent food contamination.

Operators of a food business, including a farmers' market, should:

- Take steps to prevent smoking or spitting on site. Consider posting 'No Smoking' signs at all entrances.
- Require hand washing after eating, smoking and using the washroom.
- Ensure you and your staff always wear clean clothing. Consider providing your food handlers with clean aprons which serve as a barrier between their clothing and the food they handle. Clothing should be free of loose fastenings such as buttons that may fall into the food. Avoid having pens or pencils in breast pockets as they could easily fall out and drop into the food. Footwear should be as clean as possible.
- Encourage your staff to keep their hands away from their mouth, nose and hair, and never cough or sneeze near food. Cover coughs and sneezes with a tissue and thoroughly wash hands immediately afterwards.
- Limit jewelry to plain band rings. Necklaces, bracelets, earrings and other jewelry (excluding medical alert jewelry) should not be worn, especially if handling unpackaged food.
- Control hair by wearing hair restraints such as hairnets, hats or scarves. Hair clips or bobby pins should not be used by you and your staff because they can fall into food.
- Store personal effects, clothing and lunches in a separate area away from food.
- Take coffee breaks and meals in designated areas away from food handling areas.

Farmers' market managers should encourage vendors not to eat, drink, smoke or chew gum or tobacco while in their market stall.

Take the appropriate steps to ensure that food isn't contaminated by the people within your food establishment.

In food handling areas there is NO:

- *Smoking*
- *Spitting*
- *Gum chewing*
- *Drinking*
- *Eating*

Hand washing is the single most effective means of preventing the spread of pathogens.

Alcohol based hand sanitizers can be used when facilities are lacking and hands aren't dirty.

Hand Washing

Hand washing is the single most effective means of preventing the spread of pathogens that can cause infections and foodborne illness. Proper hand washing is essential for everyone handling food.

Although correct hand washing might seem like common sense, most people do not wash their hands thoroughly enough. Extra care needs to be taken to properly and frequently wash hands when handling potentially hazardous foods.

Ensure that the facility where you sell your food has proper hand washing facilities and that hand washing stations are not used for utensil or general cleaning purposes. Hand washing notices **must** be posted in each washroom and at each hand washing station.



For more information on proper hand washing facilities see Chapter 8: Premises.

Alcohol based hand sanitizers are adequate when hand washing facilities are lacking and hands are not soiled with dirt. There is no advantage to using anti-bacterial soap. Soap allows soil and other contaminants to be removed more easily, but it is the process of scrubbing the hands that effectively reduces the hazard, not the soap.

Proper Hand Washing Technique

- Wet hands with clean, warm potable water.
- Apply soap and work into a lather. Use liquid soap; bar soap is not recommended because it may be contaminated with foreign objects.
- Rub hands together for at least 20 seconds (sing the Happy Birthday song or Twinkle Twinkle Little Star to yourself – that takes about 20 seconds). Wash all surfaces thoroughly including wrists, palms, back of hands, finger tips, between fingers and under fingernails. Ideally, you should use a nailbrush to clean under your nails; however, the brush must be kept clean and sanitary.
- Rinse under clean, running water.
- Dry hands with a single use towel.
- Turn off the tap with the paper towel.
- Dispose of paper towel in a waste container.

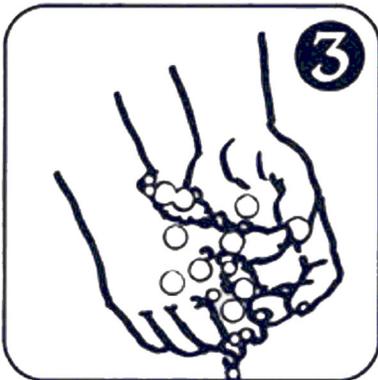
Keeping fingernails trimmed makes them easier to clean. Food handlers should not wear false or acrylic nails or nail polish.



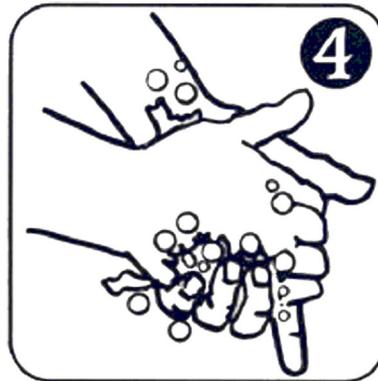
Wet hands with warm water.



Apply soap and make a lather.



Scrub palms, back of hands and between fingers.



Rub and scrub thoroughly for 20 seconds.



Rinse well.



Dry completely with paper towel.

Figure 13.1 Proper Hand Washing Procedures

Wash Your Hands

- Before handling food
- Before starting work
- After using the washroom
- Before and after handling potentially hazardous foods
- After handling the garbage or trash
- After every break
- After smoking, eating, drinking, or chewing gum or tobacco
- After sneezing, coughing or using a tissue
- After handling animals
- After any other activity where hands become soiled

Wearing disposable gloves is not a substitute for appropriate, effective and frequent hand washing.

Using Gloves

Many operators feel that wearing gloves prevents the transmission of pathogens; however, wearing gloves is not a substitute for appropriate, effective and frequent hand washing.

Gloves can create microenvironments that increase the bacterial load on your hands. Your hands can get very sweaty when you wear gloves for long periods of time; the warm temperatures and high moisture level create an ideal environment for bacteria to grow. Using gloves properly requires training.

Proper Use of Gloves

- Gloves must fit properly; treat them as a second skin.
- Wash hands thoroughly with soap and warm water before and after gloves are worn.
- Discard gloves that are torn or damaged.
- Change gloves whenever you change an activity or handle anything that is not sanitary, for example, after you accept money from a customer and before you handle food again.
- Replace your gloves after sneezing, coughing, touching the face or hair, picking up an item from the floor, handling money and after handling cleaning and sanitizing chemicals.
- Change gloves if you have worn them for more than two hours, even if you're still doing the same activity.

Hygiene and Health

Some illnesses can be passed onto others through food. Establish preventative measures to minimize the risks of contaminating food by staff with communicable diseases or infections. Employees suffering from a fever, persistent cough, sore throats, vomiting or diarrhea **must** notify you. Ideally, ill workers should be sent home, especially if they are vomiting or have diarrhea. At the very least, assign them duties that minimize their contact with food and food handling equipment.

Cuts and abrasions are common during food handling. Ensure that all employees know what to do if they get hurt. Have a first aid kit on site and written procedures on handling injuries.



For more information on what should be in a well stocked first aid kit visit the website of the St. John Ambulance at www.stjohn.ab.ca/. Click on “First Aid Kits and Supplies” and then on “Workplace Kits.”

Treat any cuts, wounds or open sores on the hands and arms and cover with clean, waterproof bandages. If the wound is on the hands, wear disposable gloves overtop the bandaged hand. You need to reassign people with visible injuries, such as cuts on their hands, to non-food handling duties whenever possible.



First Aid Kits

Check out your first aid kits.

- Are they conveniently located?
- Are they properly stocked?
- Do staff know where they are located?

Keeping Records

Maintaining accurate records is essential for farm direct marketers. Keep training records for each staff member documenting date of training and subject matter. Monitor the effectiveness of your training by observing staff in action.

Staff sick with a communicable disease or infection should be sent home or reassigned to non-food handling duties.

Treat cuts, wounds or open sores on the arms and hands with clean waterproof bandages.

Staff Training

An important way to prevent contamination of food is to maintain high standards of personal hygiene and cleanliness. As a farm direct marketer it is your responsibility to ensure that you and your staff have the knowledge and skills required to handle food safely. Train all employees, from the person standing behind the counter selling your product to the person who cleans the establishment in the evening.

It is your responsibility to establish and enforce a code of sanitary practices for workers. Develop a written program, with periodic updates, that provides appropriate training in personal hygiene and hygienic handling of food. The training should include requirements of personal hygiene and the reasons why they are important. Set a good example for staff and always abide by these hygiene requirements.

“Food safety training is important to our staff. It ensures that they know the regulations and the concerns that come with the products we are selling at the farmers’ markets. They aren’t intimidated when a health inspector comes around. They know what they are supposed to be doing and how to do it. We know our customers are getting a food safe product.” Leona Staples, Innisfail Growers/The Jungle U-Pick Farm

Encourage staff to:

- Wear clean clothes and aprons
- Properly restrain the hair
- Avoid wearing jewelry while handling food
- Regularly wash hands, especially after handling raw or potentially hazardous foods and using the washroom
- Wherever possible avoid directly handling or touching the food – use tongs or other utensils
- Not eat, smoke or chew gum while preparing or handling food or the equipment and supplies used in food preparation
- Never sneeze or cough over food, utensils or food handling equipment
- Cover cuts or sores on the arms and hands with waterproof dressings
- Avoid touching the face, beard or hair while handling food
- Stay home if they are suffering from a skin infection, upset stomach or diarrhea

Staff should:

- *Wear clean clothes*
- *Restrain their hair*
- *Regularly wash their hands*



Food Safety Plan – Personnel

A written food safety plan for personnel should emphasize the hygiene requirements and the skills employees must be able to demonstrate.

Focus on the following:

- Condition and suitability of personal attire
- Hand washing standards
- Personal hygiene standards
- Unacceptable behaviours in food handling areas
- Personal health and reporting requirements
- Procedures to be followed if you have an ill food handler
- Procedures for corrective action when mistakes happen
- Who is responsible for monitoring

It is your responsibility to ensure that employees are provided with adequate facilities and properly trained on personal hygiene practices.

Remember it is your responsibility to ensure that employees are properly trained on personal hygiene practices and provided with adequate facilities, including a place where they can eat and change clothes. Locate facilities for staff in convenient areas to encourage their use.



Take the time to continue developing your food safety plan. Create a section in your binder for Personal Hygiene. Use the information in this chapter to build this component of your plan.

Summary

Your farm direct marketing venue should not be a source of contamination. Personnel training is a very important component of food safety and the prevention of foodborne illness. An essential element of training **must** be proper hand washing techniques and when it must be done.

The role of food handlers is paramount to the prevention of food poisoning. All staff must have a good understanding of personal cleanliness and hygiene and what is expected of them.

“We’ve made a number of changes recently because of food safety. All our employees are required to wear gloves as they harvest and package vegetables. They are to wear hairnets or hats. Our employees are required to tell us if they are ill and they are asked to stay home until they are well enough.” Helen Doef, Doef’s Greenhouses Ltd.

Market Manager Responsibilities

As a manager of an Alberta Approved Farmers’ Market you **must** make certain that the market is a safe place for food to be sold. Good hygiene practices by employees, vendors and customers will help guarantee that your venue does not contribute to the contamination of food with microbial, chemical or physical hazards.

As you walk through the farmers’ market, make visual checks to ensure that all vendors are doing their part to ensure the safety of the food being sold. If you observe any vendors not meeting their responsibilities bring this to their attention.

Monitor vendors and market staff to ensure that they are:

- Wearing clean and appropriate clothing
- Wearing minimal jewelry and no nail polish
- Changing gloves, if worn, frequently
- Restraining hair under a cap, scarf or net
- Washing their hands frequently
- Refraining from eating, smoking, chewing gum or tobacco at their tables

You also have the responsibility to ensure that:

- A well stocked first aid kit is available
- Vendors know where it is located
- Washrooms are always clean and well stocked



Food Safety Checklists

Use the Market Startup and Weekly Food Safety Checklist for Market Managers in Appendix M to help you monitor your market. Add any personal hygiene issues that are missing for your market. Remember you and your vendors should be using the checklists every market day.

What's Next

Do you know how to sample your food products safely? At the market, should the strawberry tarts be sitting right next to the baskets of fresh strawberries? How do proper food handling practices reduce the risk of foodborne illness? Learn more about proper food handling practices and why they are so important in Chapter 14: Food Handling.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
 Agri-Food Systems Branch, Food Safety Division
 Alberta Agriculture, Food & Rural Development
 Phone: (780) 427-4054. Dial 310-0000 first for toll free access.



Chapter Review

Take a moment to review the chapter by answering True or False to the following statements.

1. Hand washing is the most effective means of preventing the spread of pathogens that can cause infections and foodborne illness. _____
2. Wearing disposable gloves is a good substitute for washing your hands, especially in a busy market. _____
3. When washing hands, after applying the soap rub your hands together for 10 seconds. _____
4. It is the responsibility of the farmers' market manager to post "No Smoking" signs throughout the market. _____
5. An employee that becomes ill may wash vegetables for sale at a market with little risk of contamination. _____
6. A farm direct marketer selling prepackaged bagels should wear disposable gloves when handling money. _____

Answers to Chapter Review

- 1) True
- 2) False, gloves become contaminated in the same way as hands and need to be washed, replaced or removed before handling hazardous materials
- 3) False, hands should be rubbed together for at least 20 seconds
- 4) True
- 5) False, a sick employee would contaminate the vegetables while handling them. Have sick staff work with non-food related activities.
- 6) False, although the exchange of money will contaminate hands, prepackaged goods are protected from such cross contamination

Chapter 14:

Food Handling

Learning Objectives

After completing this chapter, you will be able to:

- Explain proper food handling practices and their importance in the prevention of foodborne illness
- Describe the proper methods for displaying and sampling foods safely
- Identify specific temperatures for freezing, thawing, cooling, cooking, hot holding and reheating food safely
- Develop a food safety plan for food handling and sampling including standard operating procedures and record templates

Chapter 14: Food Handling



Rules of Thumb Don't Cut It

Heidi takes great pleasure in watching people's enjoyment as they sample her baking. After taking the Food Safe course through her regional health authority, she realizes that she must be careful with her food handling practices. She decides to develop guidelines for safe sampling of her products.

She writes up some rules about:

- *Using single use items, for example, plastic forks, portion cups, napkins, styrofoam plates, etc.*
- *Cleaning equipment (knife, utensils) after each use*
- *Displaying and serving the samples to prevent contamination by customers*
- *Length of time the samples sit out on the table*
- *Storage of samples*



Hazards

Food products at farm direct market outlets, including Alberta Approved Farmers' Markets, are subject to three types of hazards:

- Biological hazards from contamination by microorganisms if temperature control is inadequate, cross contamination from water, dirt, spills or other contaminants, and unsafe food handling practices
- Chemical hazards from residues or spillage of supplies used to clean or maintain equipment, demonstration or sale tables
- Physical hazards from loose jewelry, false finger nails and metal fragments that fall into the food

Safe Food Handling Practices

Handling food safely prevents contamination, eliminates the transmission of disease through food and maintains the wholesomeness of the food from production until it is consumed.

Safe handling and understanding the major causes of foodborne illness can reduce the risk of a food contamination incident. Remember, one case of food poisoning can close down a market or business. The four leading causes of foodborne illness include:

- Cross contamination
- Improper temperature control
- Poor personal hygiene
- Inadequate sanitation program

Cross Contamination

Cross contamination occurs when harmful microorganisms, allergens, chemical contaminants or foreign substances are transferred between food, food preparation surfaces and/or equipment. A common cause of cross contamination is incorporating contaminated ingredients into ready-to-eat foods or mixing batches of product. At the market, this may occur when the few last samples of a potentially hazardous food such as cooked sausage or cheese cubes are added to a new sample batch. However, cross contamination may also occur when raw foods contact cooked foods, employees mishandle foods or utensils, and equipment and materials are improperly cleaned and sanitized.

Cross contamination occurs when raw food contacts cooked food, employees mishandle foods or utensils, and equipment and materials are improperly cleaned and sanitized.

To minimize the risk of cross contamination you **must**:

- Use different preparation areas and equipment for potentially hazardous foods and ready-to-eat foods
- Clean and sanitize utensils, equipment and preparation areas between tasks and food types
- Use only food grade containers to prepare, hold, transport, store and serve foods; never reuse boxes that contained raw food
- Wrap or cover all food items, including individually served items; food grade plastic film shows off your food while keeping it safe
- Use tongs, toothpicks or other serving devices when handling unwrapped food

If you are selling different food types such as fruit pies and fresh vegetables, display the vegetables on a table separate from the bakery items to reduce the risk of cross contamination. Thorough washing does not completely remove all the pathogenic microorganisms that may be present on the vegetables.



For more information on cross contamination see Chapter 5: Danger Zone Ahead, Chapter 10: Storage and Chapter 12: Equipment.

Contaminated Ingredients

Cracked eggs and unwashed produce are common sources of contamination. Egg whites contaminated by pathogens such as *Salmonella* that enter through hairline cracks in the shell create problems when used for meringues. Produce, such as lettuce, green onions, spinach, etc. washed with untreated water can contaminate salads.

Temperature Control

Failing to cook potentially hazardous foods thoroughly, cool them quickly, reheat them adequately or freeze them completely can cause foodborne illness. Potentially hazardous foods must be kept out of the danger zone (4–60°C). The longer potentially hazardous food is held in the danger zone, the greater the chance it will become a food safety hazard.

To avoid contaminating ingredients, do not mix raw potentially hazardous foods with ready-to-eat items.

Keep potentially hazardous foods out of the danger zone between 4°C and 60°C.



Further information on practices you can use to ensure proper temperature control can be found in Chapter 5: Danger Zone Ahead, Chapter 10: Storage and Chapter 12: Equipment.

Heating Potentially Hazardous Foods

Do not use a crock pot to heat foods; only use it to keep hot foods hot. Operate it at the highest temperature setting and check the temperature of the food frequently to make sure it remains above 60°C.

Crock pots are designed to maintain the temperature of hot food that has been heated to the correct hot holding temperature in another appliance that can quickly heat the food, like an electric fry pan. If you use a crock pot to heat food, the food may be in danger zone temperatures for too long.

Never cook frozen meat in a crock pot. Before serving from a crock pot check the internal temperature of the food in three spots to be sure it is thoroughly cooked.

Before using a crock pot, check with your regional health authority to make sure they are can be used in your food establishment for the purposes you would like.

Bacteria multiply rapidly at temperatures between 4°C and 60°C. Keep food out of the danger zone.

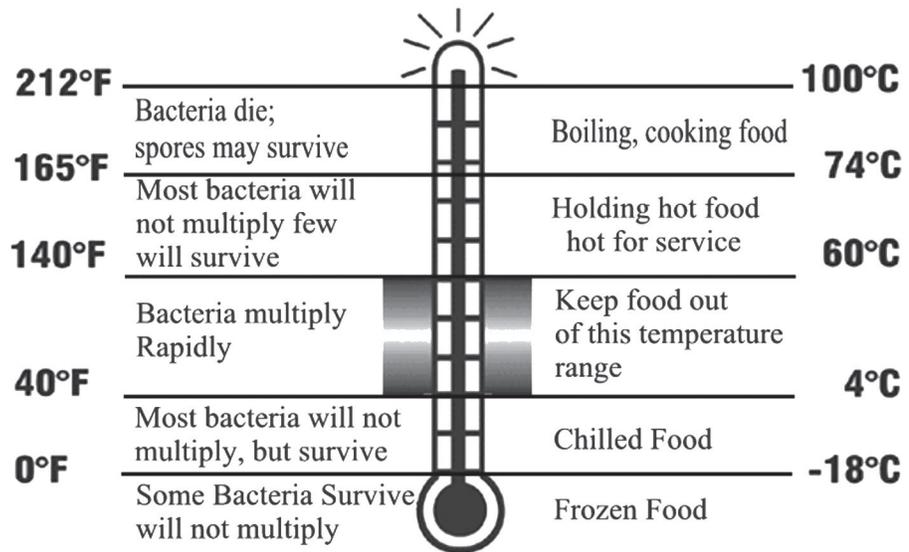


Figure 14.1 Danger Zone Temperatures

Thawing Potentially Hazardous Foods

Freezing suspends microbial growth in foods but does not destroy most microorganisms. Bacteria continue to grow when the food is thawed in refrigerated storage conditions. If food is refrozen, you have likely broken the time/temperature rule of no more than a total of two hours at the danger zone temperatures.

Temperature abuse frequently occurs during thawing. It is critical to thaw food at temperatures outside of the danger zone. Improper thawing allows bacteria to grow to harmful numbers and/or produce toxins. Defrost potentially hazardous food at refrigeration temperatures of 4°C or less.

Never thaw food on the counter. Food defrosts from the outside in. If defrosted at room temperatures, the outside of potentially hazardous foods may be at room temperature while the centre is still frozen. This creates ideal conditions for bacterial growth in the thawed sections.

Cooling Cooked Foods

Improper cooling is one of the most common reasons for foodborne illness. The longer it takes to cool the food, the greater the possibility for any bacteria present to grow and multiply resulting in a greater risk of food poisoning.

Potentially hazardous foods left at room temperatures for more than two hours provide the ideal conditions for pathogens to multiply rapidly. Placing hot food in large containers in the refrigerator also increases the risk of a food safety problem.

Once cooked, food **must** be cooled rapidly. Proper cooling involves removing heat from food fast enough to prevent pathogen growth. Potentially hazardous foods must be cooled from 60°C to 20°C or less within two hours and then from 20°C to 4°C or less within four hours.

To hasten cooling, pre-chill small batches of hot food in a freezer for about 30 minutes or place the containers in an ice water bath before refrigerating. In the refrigerator, separate food items so air can flow easily around them. Do not stack your containers.

Measure the temperature of the food periodically during cooling. Remember to clean and sanitize the thermometer between each temperature test.

Potentially hazardous foods must not be thawed at room temperature. Thaw food under refrigeration temperatures of 4°C or less – never on the counter. Thawing food outside of a refrigeration unit allows the outside of the food to thaw before the middle and provides prime conditions for pathogens to multiply.

Commercial refrigeration equipment is designed to hold cold food temperatures, not cool large masses of food. Cooked potentially hazardous food should be cooled quickly in a refrigeration unit in shallow pans or small portions and stirred frequently.



More information on safe temperature control of potentially hazardous food can be found in the Food Retail and Foodservices Code. Check it out at www.health.gov.ab.ca/professionals/ (Click on the first bullet, *Alberta Food and Foodservices Code*.)

The cumulative amount of time that potentially hazardous foods spend in the danger zone should never exceed two hours.

High Risk Situations

Many foods are at risk during preparation and service. As foods are thawed, cooked, held, served, cooled and reheated, they pass through the danger zone (4°C - 60°C) many times. The time spent in the danger zone is cumulative. The risk of foodborne illness increases especially after more than two hours in the zone.

The potential for growth of pathogenic bacteria is greater in reheated foods than raw foods. This is because the spoilage bacteria on raw products that inhibit the growth of pathogens through competition are killed during cooking. Subsequent recontamination allows pathogens to easily grow if temperature abuse occurs.

One of the most hazardous points in the food preparation process is cold food preparation because it:

- Usually takes place at room temperature, a temperature well into the danger zone
- Is one of the most common points of contamination and cross contamination.

Table 14.1 **Temperatures for Handling Potentially Hazardous Foods Safely**

Action	Internal Temperature of Food	Conditions
Freezing	0°C or less	-18°C or less is required to maintain food quality
Thawing	4°C or less 3.3°C or less, seafood	The time spent above 4°C including thawing, preparation, cooking and cooling must not exceed 4 hours
Refrigerated storage	4°C or less 3.3°C or less, seafood	
Cooking	71°C is the standard for cooking meat	Depending on the food type, required internal temperature ranges between 63°C and 74°C
Hot holding	60°C or hotter	Foods that have been prepared and cooked are to be served hot. Internal temperature should be at least 60°C



Specific internal temperatures and time for meat, poultry and fish to be properly cooked can be found in Appendix B (Time Temperature Control Raw Animal Foods) of the Food Retail and Foodservices Code. Check it out at www.health.gov.ab.ca/professionals/ (Click on the first bullet, *Alberta Food and Foodservices Code*).

The amount of time that potentially hazardous foods are in the danger zone will impact the shelf life of the product.

After potentially hazardous food is prepared, it **must** be stored:

- At the proper temperature
- In a clean, covered, food grade container
- In an area separate from raw foods
- Labelled with the date of manufacture



For more information on food storage see Chapter 10: Storage.

Personal Hygiene Practices

Wearing dirty clothing or aprons, failing to properly secure hair in a hat or hairnet and neglecting to thoroughly wash your hands after throwing out the trash are all examples of poor personal hygiene.

The best way you can control foodborne illnesses is to thoroughly wash your hands. You and your staff should properly wash hands or change gloves before handling food and after eating, smoking, coughing, sneezing, handling money and using the washroom, and after each food preparation task. In addition, working when sick with an infectious disease or with an open wound on your hands will increase the risk of foodborne illness.

Disposable latex gloves do not replace hand washing and should be used with caution. They do provide an additional barrier between hands and food and are an excellent alternative for handling ready-to-eat foods such as cooked meats.

The downside of wearing disposable gloves is they can provide a false sense of security as they protect your hands from feeling dirty. They **must** be changed as often as you would wash your hands, including after:

- Using the washroom
- Lunch and coffee breaks
- Smoking
- Sneezing
- Coughing
- Touching your face and hair
- Handling money
- Emptying garbage and picking up debris



For more information on recommended personal hygiene practices, see Chapter 13: Personal Hygiene.

Sanitation Program

Food left on work surfaces, equipment and utensils helps microorganisms grow and multiply. The microorganisms are then transferred to the food if the equipment or utensils are not thoroughly washed and sanitized before use.

Equipment, utensils and food contact surfaces, including those used to prepare food for sampling or demonstrating at the market, **must** be cleaned and sanitized as recommended:

- Before market startup, every 2 to 4 hours, between food types and after finishing a job.
- Between handling each production and sample batch

You and your staff should get into the habit of “clean as you go”. Keep market tables and sales areas clean and tidy throughout the market day. Clean up spills immediately.

Get into the habit. “Clean as you go!”



For more information on effective sanitation programs see Chapter 9: Sanitation.



Identify Unsafe Food Handling Practices

List all potentially unsafe food handling practices in your operation in each of the following areas and describe how you can eliminate them.

Cross Contamination _____

Temperature Control _____

Personal Hygiene _____

Sanitation Program _____

Insulated containers only slow heat movement and cannot keep cold foods out of the danger zone for long periods of time, especially if they are opened frequently.

Regulations prohibit the holding and display of ready-to-eat foods, including canned beverages, submerged in ice water.

Covering your food products will protect them from contamination while on display.

Displaying Food for Sale

When displaying foods for sale you must maintain appropriate temperatures. Use mechanical refrigeration units to safely hold potentially hazardous foods if displayed for more than 2 hours. Monitor the temperatures of the food and the equipment. Portable refrigeration units using a vehicle battery or generator for a power source are available if electricity is not available.

You can use a block or bags of crushed or cubed ice to maintain cold temperatures for short periods. Always use ice for displaying potentially hazardous foods, including eggs, if a refrigeration unit is not available. Prior to display, keep potentially hazardous food on ice in an insulated, lidded cooler with a drain in the bottom for discharge of melt water. Collect the melt water in a bucket and dispose of properly. Regulations prohibit the holding and display of ready-to-eat foods, including canned beverages, submerged in ice water.



Figure 14.2 **Covering Food Products**

Guidelines for Displaying Food Safely

- Surround cold samples of potentially hazardous foods with ice. Place food in a covered container embedded in a bag of loose ice. Do not simply set on top.
- Label meat that is thawed prior to sale as “previously frozen”.
- Uninspected eggs may be sold ONLY at Alberta Approved Farmers’ Markets. They must be sold in clean containers that are clearly marked “UNINSPECTED”. Eggs must be kept at a temperature of 7°C or less.
- Only pasteurized milk and milk products may be sold in Alberta. Unpasteurized cheese can be sold provided it has been produced in compliance with the *Food and Drugs Act*.
- Display only the amount of food product that you will sell in two hours or less. Refill the display from the back so products are purchased on a first displayed, first sold basis.
- Display different food types separately to avoid cross contamination. Always display raw animal foods well away from other food. Do not display perishable ready-to-eat food such as vegetables with bakery items or meat products. Display raw, cooked and ready-to-eat foods separately unless they are prepackaged.
- Protect food from sun, wind, dust and weather. Perishable products such as vegetables and potentially hazardous foods like meat are especially vulnerable to the effect of sun at outdoor markets.
- Protect all food on display from inadvertent handling and contamination by the public through the use of packaging, food (sneeze) guards, display cases or other effective means.
- Sell all products within their recommended shelf life. Identify the date of preparation on all potentially hazardous foods displayed and offered for sale.
- List ingredients and producer contact information on all food products. It’s required by law and useful to people with food allergies.

Display Surfaces

Rough wooden tables and bins are difficult to clean, making them unsuitable for direct contact with food products. Wood surfaces should be smooth and sealed with an approved paint for ease of cleaning and sanitizing. Washable or disposable table covers and bin liners offer additional protection for the food and make clean up simpler. They also make a more attractive display.

“None of our product is allowed to touch a wooden surface because there may be contaminated organisms in the wood. Everything we use has to be washable.” Helen Doef, Doef’s Greenhouses Ltd.

Use display bins and containers for dedicated purposes, that is, always use the same container for a product. This means that the bin used for potatoes is not later used for displaying peas, pickles or carrot marmalade. Store your display containers and tables where they are protected from chemicals, dirt, manure and other contaminants.

Keep your display table clean. Clean and sanitize it at the start of the market and as required throughout the day.

Food Sampling at the Market

Many regional health authorities prohibit food preparation at the market with the exception of sampling or under the authority of a separate food establishment permit. Food sampling is usually limited to bite size portions available at no charge. Check with your public health inspector before planning any food preparation activities.

“Customer safety is the first priority of the market. We’ve worked with Capital Health Region to develop stricter sampling procedures for our market. They are in addition to what is in the regulations. We want to ensure the reputation of the market stays strong.” Jim O’Neill, Old Strathcona Farmers’ Market

If you provide food samples at the market, minimize food handling to avoid cross contamination. Do not allow customers to touch the food samples directly. Portion the food into individual helpings and serve each portion in a portion cup, on a napkin, speared with a toothpick or wrapped in food-grade plastic wrap or plastic bags. Use tongs and disposable gloves when preparing the samples.

Do not allow customers to touch the food samples directly.

Display food samples in a single layer on a clean aluminum pan, paper plate or serving tray lined with waxed paper, tin foil or other food grade wrap. Avoid using wicker or wooden trays, as they are difficult to clean and sanitize properly. Use a new disposable serving item or replace the tray liner before laying out a new sample batch. To reduce the risk of contamination, ensure there is plenty of space between each sample so customers can easily pick up one sample without touching others.

Bring sufficient single use supplies such as napkins, styrofoam cups, paper plates, portion cups, plastic utensils, etc. for proper food sampling throughout the market day.

Keep your market area free from litter. Provide a garbage container at the sampling booth. Replace or empty the container as required and at the end of the market day. Do not allow garbage to spill out of the container or contact the display table or food.

Do not handle both food and money. Wear food-grade disposable gloves when preparing and displaying the samples. Remove and dispose of the gloves after handling money or other contaminated objects and before preparing more samples. Wash your hands and put on new gloves before handling the next batch of food samples.

“It’s important to cover your samples at the market but it’s more difficult to get the customer to sample them when they are covered. We have a staff member with the samples constantly to take the lid off, ask the customers to try the sample and then put the lid back on. It takes extra time to do that, but it makes us talk to our customers more and gives us a little extra contact. It does keep customers from helping themselves and prevents double dipping.”

Shelley Bradshaw, Innisfail Growers/Beck Farms

Bring sufficient single use supplies such as napkins, styrofoam cups, paper plates, portion cups, plastic utensils, etc. for proper food sampling for the full market day.

Keeping Food Samples Safe

- Wash hands prior to handling food.
- Cut pre-made or pre-cooked foods to sampling size after cooking.
- Maintain proper temperature control when preparing and serving food samples. Cook food completely prior to sampling. Do not partially cook food at home and set aside for final cooking later at the market. Keep hot foods hot (60°C or more) and cold foods cold (0 - 4°C) and serve immediately. Follow the time/temperature rule.
- Use an accurate thermometer to monitor product temperatures during preparation and sampling. Calibrate the thermometer at the beginning of each market day. Clean and sanitize the thermometer before each use.
- Protect the food from sun, wind, dust, flies and other contaminants when preparing and serving samples. Always keep food covered.
- Prepare small sample batches as needed. Wash and sanitize equipment, utensils and food preparation surfaces before starting the task and between each batch.
- Do not add fresh samples to existing ones. Empty the sample dish, clean and refill with fresh product.
- Use separate utensils for raw and cooked foods.
- Serve cooked products on a clean platter with clean utensils and clean hands.
- Prevent the public from handling food samples by handing the sample to the customer and using toothpicks or single service containers.
- Discard all contaminated samples as well as any that aren't consumed within two hours or the time recommended by your public health inspector.
- Talk to your regional health authority about what is required for a hand/equipment washing station at your stall. A large coffee urn or other container with a spigot to provide hot water, a basin, liquid dish soap, bleach, disposable (paper) towels, a receptacle to hold equipment while air drying and garbage container are usually required. Set it up and use the hand washing facilities frequently.
- Keep utensils and equipment used in the preparation of food samples covered to protect from contamination.
- Use single use paper towels or disposable dish cloths to wipe up spills, and clean and sanitize sampling table. Dispose of after use.
- Refrain from smoking, eating or chewing gum at food tables.

Clean and sanitize utensils and small equipment used to prepare and demonstrate food before you handle food. You can clean and sanitize these items before going to market provided they are transported to market covered in clean, sanitized containers.

Transport any chemicals such as bleach and dish soap in a container separate from food and food sampling supplies. The container should be constructed of a waterproof material to prevent contamination in the case of accidental spillage. Cover and label the container.



For more information on food sampling see Appendix H: Food Safety Tips.



Food Handling Word Scramble

Unscramble the words in the second column that correspond to the six hints and write them in the spaces provided.

1) sosrc noitnamianotc

2) perorp nadh shawnig

3) nagerd zneo

4) mepertreuat notrolc

5) nignaelc

6) meptretaeur buesa

1. Occurs when microorganisms are transferred between food, food preparation surfaces and equipment.

2. This is the number one way a food handler can help prevent foodborne illness.

3. Temperatures between 4°C and 60°C where microorganisms grow best.

4. One of the most important conditions to maintain in order to insure safe food.

5. This must always precede sanitation.

6. One of the most common causes of foodborne illness.

Keeping Records

Keeping records is one tool that helps you monitor the consistency and effectiveness of your food handling practices. Records provide proof that you followed recommended practices to keep food safe. Your record keeping system should include:

- Temperature logs where you record temperatures of foods sold and sampled at the market. It is especially important to track the temperatures of potentially hazardous products that are cooked and sampled hot at the market or kept at refrigerator temperatures and sold or served cold
- Identification of product batches sold and sampled at the market
- Staff training



Review Your Practices

1. Randomly review your temperature logs for food sold during six market days over the last year. Do your records show proper temperature control?

2. How often do you review safe food sampling practices with your market staff?

Staff Training

Train staff in the appropriate handling of different food types. Make sure they understand:

- The importance of each requirement
- Their role in the safe handling of food
- Why their actions are critical to the continued safety of your food products
- The importance of following your policies and procedures

Focus food handling training on the following areas:

- Proper handling of food to prevent contamination
- Proper food sampling procedures
- Proper ways to display food for sale
- Cleaning and sanitizing equipment and utensils after each use
- Appropriate use of hand washing stations
- Disposal of left over or contaminated food samples

Keep records documenting when training was conducted, who attended and the time spent reviewing specific safe handling practices. Monitor staff to determine if they understand what must be done and are implementing your operating procedures.

“We bring our staff together for a full day of training in June. In addition, we address any food safety concerns we see at the markets. We hire secret shoppers to look for a number of things. Staff doesn’t know who they are. It does provide us insight into how things are going.” Leona Staples, Innisfail Growers/The Jungle U-Pick Farm



Food Safety Plan – Food Handling

This section of your food safety plan should emphasize good food handling practices and what employees need to do to carry out their duties in a safe and sanitary manner.

Your written plan should include:

- Complete instructions on good food handling practices to be followed to ensure a food safe environment
- How to properly prepare and serve food samples
- How to maintain and monitor proper temperature control for potentially hazardous foods
- How to minimize the risk of cross contamination
- How to safely display food to be sold at the market
- What is to be done when mistakes happen
- What information is to be recorded, when, where and by whom
- Verification of activities carried out to ensure procedures are followed



Take the time to continue developing your food safety plan. Create a section in your binder for Food Handling. Use the information above to build the food handling component of your food safety plan.

Summary

Making and selling food carries with it certain responsibilities. Every person who handles food has an important responsibility to keep food safe and free of contamination and prevent food poisoning. Keeping food safe involves controlling temperatures, contamination sources and time in the danger zone. Your efforts in handling food to maximize food protection provide confidence in your product with the added benefit of attractive displays which can increase sales.

Measures must be taken to protect food from contamination by:

- Ensuring products, especially potentially hazardous foods, are not exposed to temperatures in the danger zone (4°C - 60°C)
- Calibrating and using accurate thermometers to record product temperatures
- Keeping equipment clean and in good repair
- Practicing proper food sampling techniques
- Displaying food safely

Market Manager Responsibilities

As an Alberta Approved Farmers' Market manager you need to ensure that the market is operating safely. It is your responsibility to monitor food handling practices at the market every market day and bring potential problems to the attention of the market vendors or employees for action.

As you walk the market:

- Monitor temperatures of potentially hazardous products. Use a metal stem thermometer to occasionally spot test temperatures. Remember to clean and sanitize your thermometer before each use
- Ensure products on display are held at the proper temperature and potentially hazardous foods are displayed in refrigeration units or on ice
- Ensure that vendors are following proper food sampling methods



Food Safety Checklists for Market Managers is in Appendix M.

What's Next

Pests contaminate foods and transmit diseases. To learn more about developing a pest control program for your food establishment, turn to Chapter 15: Pest Control.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.



Chapter Review

Take a few moments to review the chapter and answer True or False to the following statements.

1. Microorganisms can contaminate the internal contents of eggs. _____
2. Cross contamination occurs when microorganisms are transferred between food, food preparation surfaces and equipment. _____
3. Freezing destroys most microorganisms. _____
4. Temperature abuse frequently occurs during the thaw process. _____
5. Bison sausage samples can safely sit on your table for three hours. _____
6. A farmers' market manager can allow uninspected eggs to be sold at that market provided they are stored properly. _____

Answers to Chapter Review

- 1) True
- 2) True
- 3) False, freezing suspends microbial growth. It does not kill the organisms.
- 4) True
- 5) False, samples must be disposed of and replaced every two hours. Some regional health authorities require samples to be replaced every hour.
- 6) True, eggs must be displayed and stored at 7°C or less

Chapter 15:

Pest Control

Learning Objectives

After completing this chapter, you will be able to:

- Explain the importance of a good pest control program to food safety
- Describe proper procedures for implementing a pest control program
- Develop a pest control plan including written standard operating procedures and record templates

Chapter 15: Pest Control



Pests at the Market

At one of the indoor markets, Liane sees a mouse run across the floor as she sets up her stall. Knowing this can't be good, she informs the market manager. Although the manager set out mousetraps at the beginning of the season, he's failed to check them on a regular basis. After Liane's complaint, the manager checks the mousetraps and finds three with dead mice. There is obviously a problem at this market.

Meanwhile, as Pam unpacks the last two totes of strawberry baskets at the outdoor market, she discovers that the berries in the bottom tote are quite crushed. She sets this tote aside and continues unloading.

When she returns to the truck midway through the market day to restock her stall, Pam finds wasps swarming all around the discarded strawberry tote. She carefully moves it away from the market stalls, disposes of the strawberries and quickly rinses out the tote before covering and storing it in the truck for further cleaning at home. Pam reminds her staff that bruised and spoiled produce must be disposed of immediately to prevent pest infestation.



An effective pest management program focuses on prevention, monitoring and eradication.

Hazards

A proper pest control program reduces the risk of contamination from the following:

- Biological hazards from contamination of food, packaging material and equipment by pathogenic microorganisms carried by pests or transferred through their urine and droppings
- Chemical hazards from pesticide residues because of improper application, the wrong pesticide being used or improper storage of pesticides and application equipment
- Physical hazards created by the presence of excrement or the physical remains of pests

Effective Pest Management

Pests contaminate food and transmit diseases. An effective pest management strategy focuses on safe and effective control and exclusion. The three components of effective pest management include:

- Prevention
- Monitoring
- Control

Pesticide – a substance used to prevent, destroy or repel any insect, nematode, rodent, predatory animal, parasite, bacteria, fungus, weed or other form of plant or animal life.

Pathogenic microorganism – any bacteria, virus, mould or other form of life too small to be seen by the naked eye and capable of causing disease, illness or injury.

Eradication – steps taken to totally eliminate a pest from the area.

Prevention

Pest infestations can occur wherever there is a food source and suitable breeding sites. You need to take steps to create an environment that is not favorable for pests. A good sanitation program and regular monitoring minimizes the likelihood of an infestation and thereby minimizing the need for pesticides. Contact a reputable pest control company for advice on preventing access by pests.



If pests are allowed to live directly outside the facility, they have a greater chance of getting inside and contaminating the premises. Keep the area around your food establishment free of rubbish, weeds, pallets and equipment. A gravel barrier 60 cm (24 in.) around buildings reduces potential hiding places for rodents and insects.

Keep your buildings in good condition. Regular maintenance and repair will prevent animal access and eliminate potential breeding sites. Routinely inspect the building exterior for holes where insects, birds or rodents might enter.

Seal any holes, cracks, drains and other places where pests can enter. Remember, a mouse can enter a building through a hole the size of a dime. Screens on windows, doors and ventilation systems, and doors with proper weather stripping all serve as preventive measures. Keep all doors closed to reduce access to pests.

Collect garbage in covered containers and empty when full to prevent the garbage from spilling over. If the pests have easy access to food, they are more likely to come back or simply take up residence.

Keep the area around buildings free of shrubs, equipment, rubbish and weeds.

Regular maintenance and repair of buildings will help prevent pests from entering your food establishment.



For more information on building exteriors and interiors see Chapter 8: Premises.

Regularly monitor your food establishment for signs of pest activity.

Farm direct marketers must develop and follow written pest control schedules and procedures.

Pests are found in food establishments if they are provided with a supply of food and water, and when there is inadequate cleaning and sanitation. Ensure that food is kept away from pests. Store food in pest-proof containers and stack above the floor and away from the walls.

Outdoor farmers' markets need to leave the market site as clean as possible to minimize the number of pests that remain at the site and are attracted to the site between market days. Do not use domestic animals like cats for pest control.

Monitoring

You should check all areas of the food establishment regularly for signs of pest activity such as rodent and bird droppings, smear marks, insect egg cases, dead insects and damage to packaging. Make staff aware of the signs of pests and the actions they need to take if they discover any.

Place your traps in strategic areas throughout the facility. Maintain a map of these trap locations and inspect the traps at least twice a month. Poison baits cannot be used where food is handled.

Control

If your monitoring detects any pest activity, implement control measures immediately. Farm direct marketers **must** develop and follow written pest control schedules and procedures.

Chemical pest control measures include the use of pesticides, traps and baits. All pesticides used **must** be registered under the federal *Pest Control Products Act* and Regulations and listed in the Reference Listing of Accepted Construction, Packaging Materials and Non-Food Chemical Agents published by the Canadian Food Inspection Agency.

Purchase pest control devices that are well designed and intended for use in food handling areas. Locate them in areas that will effectively control pests but not contaminate food or equipment.

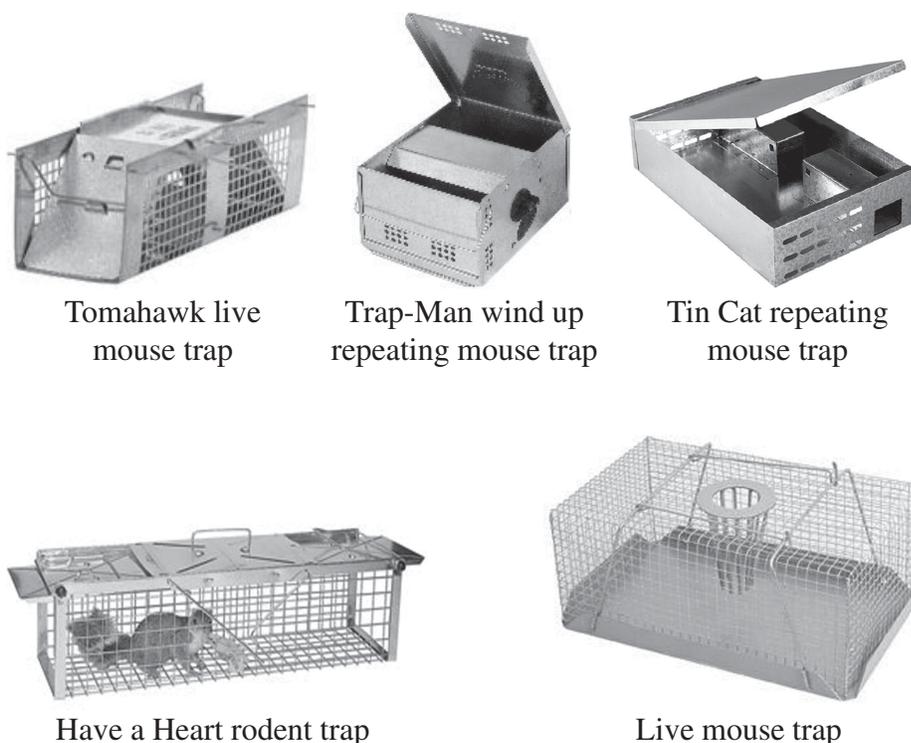


Figure 15.1 **Live Rodent Traps for Use Within Food Establishments**

Locate devices used to electrocute flying insects at least 2 m (6 ft.) away from any food handling areas. Empty and clean them regularly. Install sticky tapes or similar devices used to trap insects so that dead insects or their body parts cannot fall onto food or equipment.

Pesticides **must** be used according to label instructions. Before applying pesticides, you need to protect all food, equipment, utensils and packaging material from contamination. After application, thoroughly clean all your equipment and utensils to remove any residues.



More information on pest identification and pesticide usage can be found on the website of the federal Pesticide Management Regulatory Agency (PMRA) at www.pmra-arla.gc.ca/english/index-e.html

Monitor all pest control activities for effectiveness. Keep a written record of all pest control measures used in and around the premises as required under the Food and Food Establishments Regulation. Farm direct marketers should discuss their pest control programs with their public health inspectors.

Use registered pesticides according to label instructions. Locate pest control devices away from food and food handling equipment.

Clean and sanitize food contact surfaces that have been contaminated by pests.

Store all pest control products in a secure, designated area away from food handling activities.

If your food establishment becomes infested, you must undertake measures to control the problem. Clean and sanitize surfaces contaminated by pests to remove pathogens. Clean and sanitize from the top to the bottom to reduce the chance of recontamination.

Store all pest control products properly in designated areas away from food handling areas. Keep this storage area locked at all times and labelled as pesticide storage.



For more information on proper storage conditions see Chapter 10: Storage and Alberta Environment at www3.gov.ab.ca/env/protenf/pesticide/usage/pesticide_storage.html

Pest Control Personnel

Hire properly trained personnel to carry out a pest control program. Use the services of a certified pest control operator who is trained to use the approved chemicals and methods. If this service is contracted, your records must document the name of the company, contact information and control measures. Talk to the pest control professional about integrated pest management approaches.

Should you choose not to contract pest control services, you or your staff could take the Pesticide Applicator Certification Program training. The program is a collaborative effort between Lakeland College and Alberta Environment.



More information can be found on the Alberta Environment website at www3.gov.ab.ca/env/protenf/pesticide/usage/applicator_certification_program.html

An applicator's license is required by anyone applying pesticides for hire or reward. Commercial agriculturists do not need to be licensed when applying pesticides on their own property.



Pest Control Word Match

Match the correct letter with the appropriate term on the left. You will find the answers at the end of this chapter.

- | | |
|------------------------------------|--|
| ___ Disease | A. Both of these are very important aspects of a proper pest control program. |
| ___ 60 cm gravel | B. Before any pesticide is used, what must you ensure is protected from contamination? |
| ___ A dime | C. This simple type of barrier around a building can reduce potential hiding places for rodents and insects. |
| ___ Food | D. A mouse can enter a building through a hole of what size? |
| ___ Live trap | E. Who should you hire to carry out a pest control program? |
| ___ All food | F. This type of rodent trap is the only type allowed within a food establishment such as a farmers' market. |
| ___ Certified pesticide applicator | G. Pests and their droppings can transmit this. |
| ___ Cleaning and sanitation | H. What is most important thing to ensure that mice do not have access to? |

Keeping Records

Detailed and accurate documentation of all pest control measures is essential.



Pest Control Records

Check that your records include the following:

- Name of person responsible for pest control
- Name of pest control company, if applicable
- Monitoring procedures used, frequency of monitoring and findings
- Corrective actions taken if required
- Map of trap locations
- List of pesticides used, formulations, application rates
- Date of applications
- Application method used and location of applications
- Name of applicator if different from above
- Staff training

Staff Training

Safe and effective control and prevention are critical elements to a pest management program. If you decide to contract out pest control activities, this impacts the amount and degree of training your staff receives; however, there are some things staff should know.

Instruct staff to keep their “eyes open”, to be watchful for signs of pest activity. Make them aware of what to look for and who to notify if they detect any signs. Inspecting for pests should become a standard task during routine sanitation and monitoring of premises and equipment.

Staff should be trained about the importance of keeping the food establishment and sales areas clean so as not to attract any pests.

Assign one of your staff to be responsible for monitoring your food establishment. Ensure that they are trained to do this. They should know:

- How to monitor and replenish bait stations
- The frequency of monitoring
- What records to keep

A clean site does not attract vermin and insects. Train your staff about the importance of keeping the premises or market stall clean at all times and what standards they are expected to maintain. Your sanitation program has a tremendous impact on the success of your food safety program.



For more information on cleaning and sanitizing your food establishment see Chapter 9: Sanitation.

Training individuals responsible for pest control is crucial. They need to be trained on the proper use of pesticides and application equipment. It should be clear to all staff what actions are to be taken in the event that a problem occurs.

Vermin – any of the various small animals and insects that are pests, e.g., mice, squirrels, cockroaches.



Food Safety Plan – Pest Control

A pest control program provides assurance that the food establishment is taking appropriate measures to ensure that the facility is kept pest free.

Pest control programs provide assurance that the food establishment operator is taking appropriate action to ensure that pests are minimized in and around the facility. Farm direct marketers **must have** a written pest control plan for their market facilities. Alberta Approved Farmers' Market managers should ensure that there is an effective written pest control program in place for the farmers' market venue. Discuss your pest control program with the your public health officer.

Your written pest control program should include:

- Who is responsible for the pest control program including monitoring and eradication
- Contact information for pest control company if applicable
- Monitoring procedures, frequency and locations
- Where monitoring results are recorded
- Corrective actions, if required, based on monitoring results
- Pest control methods to be used
- What pesticides are to be used with what equipment
- Application methods and frequency of applications
- Records to be kept and where
- Protective measures to be taken
- What must be done in the event that procedures are not followed as written (deviation and corrective actions)
- What must be done if food becomes contaminated (corrective actions)
- Who to contact in case of a pest emergency



Take the time to continue developing your food safety plan. Create a section in your binder for Pest Control. Use the points above to build the pest control component of your food safety plan.

Summary

Pests may contaminate food, utensils and equipment unless an effective pest management program is in place. Effective monitoring, prevention and control measures are critical to the success of your program.

As a farm direct marketer, you must take measures to protect your products from pest contamination. Put in place a written pest control program with records documenting actions taken.

Maintain the grounds and buildings of a food establishment to prevent pests from moving in. If you have an active monitoring program, you can control a problem before it becomes severe.

If you need to use pesticides, it is important that products are registered for use against the pests, recommended for use in food handling areas and are used according to label instructions. Following application, properly clean the treatment areas to avoid contamination from chemical residues. Ensure that traps and other devices do not contaminate any food or equipment in the area.

You and your staff should always be on the lookout for evidence of pest activity.

It is your responsibility to protect your food establishment and your products from contamination by pests. Don't give pests a home!

Market Manager Responsibilities

Alberta Approved Farmers' Market managers are responsible for the safety of the market venue. If you or a vendor identifies any pest problems, you need to bring it to the attention of the building owners or property management company.

If you are a manager of a permanent facility, make sure you can answer the following questions if asked by the public health inspector.

- Is there a pest monitoring program for the market?
- Who is responsible for the pest control program?
- Is there someone who is properly trained to regularly inspect the market facilities for signs of pests and take action to eliminate the problem?
- Is there a system in place to record all pest control measures taken?
- If pesticides have been used, was the facility cleaned and sanitized after the application?
- Are pesticides stored in a secure area well away from food, food contact surfaces and equipment?



Review the Market Startup and Weekly Food Safety Checklists for Market Managers in Appendix M. Add any points on pest control that are missing for your market. Remember you and your vendors should be using the checklists every market day.

What's Next

What's the difference between product tracking and tracing? If ordered by the health inspector, could you initiate a recall of your food products tomorrow? To find out why it's so important for your food safety plan to include traceability and recall components, proceed to the next chapter on Recall.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.

Answers to the Pest Control Word Match

- G Disease
- C 60 cm gravel
- D A dime
- B Food
- F Live trap
- H All food
- E Certified pesticide applicator
- A Cleaning and sanitation



Chapter Review

Take a moment to review the chapter by answering True or False to the following statements.

1. Proper storage conditions are an important part of a pest prevention program. _____
2. Using a pesticide solution stronger than label instructions will improve your pest control program. _____
3. Looking for signs of pest activity should be a standard activity of a pest control program. _____
4. A farmers' market manager must ensure that the market is kept free of pests. _____
5. Producers require a pesticide applicator's licence to spray pesticides on the farm. _____
6. Monitoring activities do not need to be recorded if there are no signs of pest activity. _____

Answers to Chapter Review

- 1) True
- 2) False, pesticides must always be used according to label instructions. Stronger is not better.
- 3) True
- 4) True, if pests are a problem, the manager should contact owners of the facility to arrange for pest control services
- 5) False, a “commercial agriculturist” does not require an applicator’s certificate to spray on property owned by the agriculturist. If spraying someone else’s land or if payment is received, a license is required.
- 6) False, all monitoring activities should be recorded even if no follow-up action is required.

Chapter 16:

Recall

Learning Objectives

After completing this chapter, you will be able to:

- Relate the importance of product traceability and recalls to limiting the scope of a foodborne illness
- Develop a product identification system
- Identify crucial records that must be maintained for the security and sustainability of your business
- Develop a food safety plan for your recall program including standard operating procedures and record templates

Chapter 16: Recall



Pam and Liane Develop a Tracking System

Pam and Liane are a little anxious after a vendor at their market had to recall a batch of mouldy jelly. They decide to review their jam processing procedures before moving into the new facility. Currently they have no method of identifying what products are sold on a particular date at each market. Pam and Liane decide to incorporate a product identification process.

Using a small sticky label, they identify each jar with product type, production date and lot number for each batch. For example ST 05-001 represents strawberry jam (ST), the year (05) and batch number (001). They will record the batches sold each market day to allow them to track the market location and sale date.

Liane and Pam keep a customer database so they can let their customers know when they'll be at the market and the products available. They realize their database can help them contact customers in the event of a product recall.



A food recall includes any corrective action by a business to protect consumers from potentially adverse effects of a contaminated, adulterated or mislabeled product.

Food Recalls

Despite your best efforts to ensure the safety of your food products, mistakes can and do happen. In 2004, the Canadian Food Inspection Agency (CFIA) issued 90 food product recalls and alerts. These numbers don't include the recalls on a more local level issued by the various provincial agencies. Some of these recalls were for products produced by farm direct marketers and sold at farmers' markets, farm stores and directly to restaurants.

Most recalls are voluntary. However, CFIA does have the power to make a recall mandatory. Failure to comply with a recall can result in fines and imprisonment.

What is a Recall?

Occasionally a food product sold represents a health hazard. The food may make some people ill, injure them or be in violation of legislation. When a product is identified as unsafe, it must be removed from the market quickly. The process of removing the product is called a "recall".

Although a food safety program reduces the risk of a recall, mistakes can happen. If you are unable to effectively recall a product, it can result in:

- Harm to consumers
- Damage to the image of your business or loss of the business
- Damage to the farm direct marketing industry as a whole

Recall – process of removing food products from sale that do not meet safety or company standards.

What Can Prompt a Recall?

There are a number of situations that can result in a recall. Some of the more common reasons include:

- Allergens – a product containing an unlabelled ingredient that may cause an allergic reaction in humans
- Bacterial contamination – contamination by harmful bacteria that may result in foodborne illness or even death. Contamination generally occurs because of poor production practices
- Chemical contamination – contamination of food by unapproved pesticides or animal drugs or residues in excess of allowable limits, excessive use of sanitizers, cleaners, solvents, etc.
- Foreign objects – presence of foreign objects such as glass, plastic or metal fragments that have been introduced with ingredients or poor production practices
- Undeclared ingredients – a product that contains ingredients (often allergens) not listed on the label

A recall can be triggered by the presence of allergens, bacterial or chemical contaminants, foreign objects, or undeclared ingredients in a food product.



Recall Situations

Take a moment to think about your products. What situations might prompt a recall of one of your products?

CFIA has identified three classes of recalls based on the severity of the problem.

According to the CFIA, recalls are classified as follows.

Type of Recall	Situation
Class I	A situation in which there is a reasonable probability that the use of, or exposure to, a violative product will cause serious adverse health consequences or death
Class II	A situation in which the use of, or exposure to, a violative product may cause temporary adverse health consequences or where the probability of serious adverse health consequences is remote
Class III	A situation in which the use of, or exposure to, a violative product is not likely to cause adverse health consequences

Depending on the nature of the problem, once the product is removed from circulation, it may be subject to testing, corrective action to ensure compliance or destruction.

Make a Recall Plan

Recalling a product should be a planned action; therefore it is essential that you be prepared. Your plan should include:

- Identification of your recall team
- Complaint file
- Notification information
- Implementation procedures
- Corrective actions

Recall Team

Identify who in your business has what role during a recall. It should be clear who has the authority to make decisions. Identify who will be the liaison with the enforcement agency involved. Remember to identify who will be the media contact. Have your legal counsel as a member of your recall team.

Since many recalls happen after regular work hours, be prepared to contact people outside of business hours. Make sure the information on your list of people on your recall team is always current.

Violative – tending to act against the requirements of the law; offend against.



Recall Team

Make a list of who should be on your recall team. Include contact information and a description of their roles.

Complaint File

A recall is often triggered by a consumer complaint. When you receive a serious complaint and you suspect that your product may be recalled, record the following details in your complaint file.

- Complainant details – name, address, telephone numbers
- Description of the problem with the product – chemical taste, allergic reaction, illness, foreign object, etc.
- Product details – product name, package type and size (if applicable). Does the complainant have a sample of the product?
- How the product was stored and handled after purchase
- Illness and injury details
 - When was the product consumed
 - How much product was consumed
 - Number of people who consumed it
 - Number of persons ill
 - Symptoms of illness or injury

In your complaint file, record the name of the person who took the complaint and date.

Upon receiving a serious consumer complaint about one of your food products, you should immediately begin a Complaint File and record the necessary information.

If a serious complaint has been made about your food, you must contact CFIA and your public health inspector as soon as possible.

Notification Information

Once you have gathered the information, you **must** contact the authorities immediately.

Step 1 Call the Alberta CFIA Recall Coordinator at (403) 661-7505. Since this number may change, it is your responsibility to periodically review and ensure that you have the correct contact number. The information is available on the CFIA website at www.inspection.gc.ca/english/fssa/recarapp/recarappe.shtml.

Step 2 Contact the public health inspector who has jurisdiction where the product is produced.

The CFIA Recall Coordinator will help you contact the CFIA staff that will assist you with the investigation. You will need to provide them with the following information.

Information Needed by CFIA

- Detailed description of the nature of the problem
- Name, brand, size, lot code(s) of affected product
- Details of complaints received and any reported illnesses or injuries
- Distribution of the product
- When the product was distributed (specific dates)
- Label(s) of the product(s) which may be recalled
- Total quantity of product distributed
- Name and telephone number(s) of the individual within your business who will be the contact for the CFIA

Implementation Procedures

A regulatory authority leads the investigation. The CFIA and/or your public health inspector will work with you on how to proceed with a recall and make sure that all the hazardous products are removed from the marketplace. Inspectors gather pertinent information and determine the extent of the recall based on the degree of danger associated with the product and the extent of the distribution.

It is your responsibility to ensure that all products that need to be recalled are identified. If products have been sold or distributed to other venues besides directly to customers, it is your responsibility to notify other buyers and inform them of what is to be done with your product.

Corrective Actions

All the affected products that are still in your possession must be identified and separated from other products. They must not be sold or distributed in any way. The authorities **must** approve your recommendations for what is to be done with the recalled product (e.g., reworked or destroyed). It is also your responsibility to ensure that all reasonable steps are taken to prevent a similar situation occurring again.

For your own protection, record the following information.

Product Recall Information

- Description of product recalled: product name, size and identifying codes
- Amount of product recalled
- Date of recall
- Amount of product returned, if applicable
- Corrective action taken

In cases where there is a serious health hazard, it may be necessary to issue a public warning via the news media. It is your responsibility to issue the press release, but the authorities will help you.

The CFIA and/or your public health inspector will work with you on how to proceed with a recall and make sure that all the hazardous products are removed from the marketplace.

All recalled product must be destroyed or reworked. Document your actions.



For more information and examples of press releases in the event of a recall visit the CFIA website at www.inspection.gc.ca/english/fssa/recarapp/recarappe.shtml#rp

Traceability is the ability to trace the history, application or location of a product by means of recorded information. This enables you to track a food item forwards or backwards through the food supply chain.

Lot number or batch number is a distinct code for each product on each container. The code can be a distinctive combination of letters, numbers or both assigned to a specific, identifiable batch of production.

Product Traceability

Being able to identify which products have to be recalled is very important to the future of your business. If you can't identify specific products, you may have to recall and destroy more product than is necessary. To implement a recall effectively, you must be able to trace your raw ingredients and packaging materials and track finished products.

Tracking is the ability to follow the path of an item as it moves through the food supply chain from point of production to point of consumption. Tracing is the ability to identify the origin of an item or group of items, through records, back through the food supply chain.

Lot identification helps you rotate product in storage and improve business efficiencies. Lot numbers linked to sales information may enable you to make better business decisions. Recent events in Alberta have shown the importance of traceability in limiting the scope of food safety problems which helped to reduce consumers concerns and maintain consumer confidence.

Product Identification

Some businesses have developed computerized bar codes systems that are very elaborate and detailed. Others have simple hand written documentation with box codes. To identify your production, assign the date on the package for all product processed on a particular day. If several batches are processed on the same day, consider coding each batch separately.

For example: Betty's Gourmet Barbecue Spice Blend, packed on May 30, 2005 could be coded as BS053005A where

BS = Barbecue Spice

053005 = month, day, year

A = batch, where A is the first batch made that day

The product code could be a small label that is handwritten or computer generated and adhered to each spice bottle.

If you pre-mix ingredients and store them for use at another time, you must be able to link the ingredients in the pre-mix to the finished product codes. For example, if Betty's Gourmet Barbecue Spice Blend included a percentage of her Cajun Spice Blend that was mixed on May 20, 2005 and stored, the code could now read BS053005A#2. The additional #2 could be linked to the information recorded for the Cajun Spice Blend.

Codes can also be assigned for product harvested on a particular day from a specific field and bagged. Coding becomes a problem for items sold by bulk weight such as some fresh fruits and vegetables. You may need to code the harvesting containers and record what containers were sold at which markets on a particular date.

If you fail to record how much of the coded product was produced, where it was sold and how much was sold at that particular venue on a particular day, your traceability system falls apart. In the event of a recall, you may be required to recall or destroy more product than was necessary.

“At the Old Strathcona Farmers’ Market vendors must have a system to identify their products and which ones are sold at the market.”

Jim O’Neill, Old Strathcona Farmers’ Market



For more information on product coding and examples of record templates for recalls see Appendix F: Record Template Examples.



Traceability Program

Take this time to think about the products your produce. If you don't have a traceability system in place, develop a product identification system that will work for you.

Lot number, batch number – a distinct code for each product on each container; a distinctive combination of letters, numbers or both assigned to a specific, identifiable batch of production.

Traceability – ability to trace the history, application or location of a product by means of recorded information; ability to track a food item forwards or backwards through the food supply chain.

Tracking – ability to follow the path of an item as it moves through the food supply chain from point of production to point of consumption.

Tracing – ability to identify the origin of an item or group of items, through records, back through the food supply chain.

Your record keeping system is crucial if you are faced with a recall. Accurate records help limit the scope of the recall and prevent you from recalling more product than is necessary.

Keeping Records

Your records are crucial to your ability to trace your product and limit the scope of a recall. The ability to more efficiently manage the storage and retrieval of information is becoming a business requirement.

The records that must be kept include:

- Significant complaints with the appropriate information
- Distribution records
- Production records
- Corrective actions
- Product codes
- Recall records

The product codes **must** be linked to the other records. Remember, the poorer the records, the broader the recall.

In the event of a recall, you should also maintain records of contacts made, date of contact, nature of contact, decisions made and actions taken.

Staff Training

You **must** stress the importance of maintaining records to your staff. Staff must understand what records to keep and how. Your employees must also know who has what role during a recall and understand their roles.

All staff who receive consumer complaints **must** be able to assess the seriousness of the complaint and determine how to handle the complaint. They are your first link in the recall process. If all the complainant information isn't fully captured, it could hamper the speed of a recall and result in a greater number of foodborne illnesses.

Your employees must be familiar with your product coding system, especially those who may be responsible for overseeing production. They must be able to generate the appropriate code for a particular product and ensure that the products are properly labelled.



Food Safety Plan – Recall

Develop a detailed written recall plan. When a crisis hits, it's too late to work on a recall plan. Preplanning is vital to effectively manage a crisis.

Your plan must describe, step by step, the procedures to follow in case of a product recall, specifically:

- How to implement a recall
- How to determine the extent of the recall
- How to notify affected customers
- Control measures for securing the returned product

The plan should also identify:

- Responsible individuals and their contact information
- Alternates in case of absence
- Roles and responsibilities of each person
- Channels and means of communication
- Information to be captured in the Complaints File
- Product coding system
- Location of production and distribution records
- Current CFIA and regional health authority contact information.

Preplanning is vital to effectively manage a crisis. Develop a detailed written recall plan. When a crisis hits, it's too late to work on a recall plan.



Take the time to continue developing your food safety plan. Create a section in your binder for Recall. Use the points above to build the product identification and recall component of your food safety plan.

A survey in Alberta indicated that consumers believe that producers and processors were the most important links for ensuring safety in the food supply chain.

The goals of a recall plan are to protect consumer health, comply with existing legislation, keep costs to a minimum and maintain the reputation of your business.

Summary

A recent survey of Alberta consumers indicated that they believe that producers and processors were the most important links for ensuring safety in the food supply chain. How prepared are you in the event that a problem with your products occur?

A food recall includes any corrective action by a business to protect consumers from potentially adverse effects of a contaminated, adulterated or mislabelled product. A recall plan enables you to more effectively respond to a problem.

Goals of a Recall Plan

- Protect consumer health
- Comply with existing legislation
- Minimize the cost of a recall
- Regain and improve the reputation of the business

An effective recall program includes:

- Tracking, analysis, actions taken, records of product complaints
- Persons responsible
- Methods to identify, locate and control recalled program
- Procedures for monitoring effectiveness of recall.

It is your responsibility to ensure that as much of the affected product as possible is removed from the market. In the event of a recall you will need to know how much product is in the marketplace.

A traceability system for your production will make it easier to track how much product is out there. Each package/container should have a permanent, legible code or lot number. The code identifies the product, day, month and year in which the food product was produced. Records of the amount of each lot code for each product produced must be kept.

Keeping distribution records allows you to limit your recall to specific amounts. You should have a record of which product codes were sold on which dates and the locations if sold at venues other than your own farm gate or farm store.

Preplanning and practicing what to do in the event of a recall is essential.



Resources

If you need more information or have food safety questions about this chapter contact:

Safe Food Systems
Agri-Food Systems Branch, Food Safety Division
Alberta Agriculture, Food & Rural Development
Phone: (780) 427-4054. Dial 310-0000 first for toll free access.

What's Next

A food safety plan is an important part of your business strategy. If you didn't create your plan as you worked your way through the chapters, now is the time to start. Review each chapter to remind yourself of the components of a plan. See Appendix E for help in writing the standard operating procedures (SOPs) that are the basic elements of your plan.

Each section of your plan will have a staff training component. Upon completing your plan, compile these sections into your staff training manual. Use it to train your staff at the beginning of your season. Remind them throughout the season about critical actions to keep food safe.

As for what's next? A plan sitting on the shelf has no benefit to you. Implement your plan and apply your knowledge to market your food safely.



Chapter Review

Match the correct letter with the appropriate term on the left.

<input type="checkbox"/> Tracking	A. A distinct code that allows the product to be identified by batch
<input type="checkbox"/> Tracing	B. Following a product from “farm to fork”, as it travels within the supply chain from production to consumption
<input type="checkbox"/> Recall	C. A specific sequence of letters and numbers that represents information about a food product, for example, date of production and lot number
<input type="checkbox"/> Lot number	D. Identifying the origin of a product by working back through the supply chain
<input type="checkbox"/> Coding	E. Changes made when a problem occurs, to help ensure that the problem does not happen again
<input type="checkbox"/> Corrective action	F. The return of a product to its producer; usually for safety concerns
<input type="checkbox"/> Allergen	G. A substance that causes an abnormal immune response to an ordinarily harmless substance.
<input type="checkbox"/> Traceability	H. Characteristic of a product, including records such as product code, that allows the origin of a product to be determined

Answers to Chapter Review

B (Tracking)

D (Tracing)

F (Recall)

A (Lot number)

C (Coding)

E (Corrective action)

G (Allergen)

H (Traceability)

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Appendix A: Learning Outcomes

Upon successful completion of the *Marketing Food Safely* manual, you will be able to:

1. Describe your role in keeping food safe in the marketplace.
2. Define the terms “potentially hazardous food”, “non-hazardous food” and “perishable food”.
3. Describe the characteristics/risk factors of potentially hazardous foods.
4. List the three types of food safety hazards. Describe the conditions that contribute to hazard development.
5. List the ways pathogens are transmitted.
6. Describe the danger zone temperatures. Explain the significance of the time/temperature relationship in the growth of microorganisms associated with foodborne illnesses.
7. Describe the risk of cross contamination and the impact it has on food handling practices at the farmers’ market.
8. Identify the relevance of the Alberta Food and Food Establishments Regulation.
9. Identify regulatory agencies relevant to the sale of food at Alberta Approved Farmers’ Markets and explain their roles.
10. Describe the conditions and regulatory requirements for the sale of meat and meat products at an Alberta Approved Farmers’ Market.
11. Describe the factors that contribute to unsanitary premises.
12. Describe the correct procedures for cleaning and sanitizing equipment, utensils and food contact surfaces.
13. Describe the required storage procedures for perishable, dry and canned foods.
14. Describe the importance of using appropriate packaging and storage materials.
15. Describe the requirements for safe transportation of food products.
16. Link the importance of regular maintenance and repair of equipment to food safety.
17. Describe why personal hygiene is important in the prevention of foodborne disease.
18. Describe the steps for proper hand washing.
19. Identify specific temperatures for freezing, thawing, cooling, cooking, hot holding and reheating food safely.

20. Distinguish between safe and unsafe food handling practices and identify what corrective actions are appropriate.
21. Describe proper food sampling practices and their importance in the prevention of foodborne illness.
22. Describe the procedures for safely displaying potentially hazardous foods.
23. Describe acceptable methods of insect and rodent control within a food establishment relevant to food protection.
24. Describe the appropriate measures to take when a market manager, vendor or staff has a condition that may cause foodborne illness.
25. Describe the principles of product tracking (traceability) and relate their importance to food safety.
26. Describe the steps to take when a farmers' market manager/vendor receives a foodborne illness complaint.

Appendix B: Glossary

A

Abattoir – any premises or facility where live animals are slaughtered or where animals are slaughtered and any or all of the following take place: meat is cut, wrapped, frozen, cured, smoked or aged

Adulterated food – food that has been contaminated to the point that it is considered unfit and not safe for human consumption

Ag-tourism – act of visiting a working farm or any agricultural, horticultural or agribusiness operation for the purpose of enjoyment, education or active involvement in the activities of the farm or operation

Alberta Farmers' Market Association (AFMA) – provincial organization providing leadership and support to AAFRD approved member markets, farmers' market managers and vendors through education and promotion

Allergens – substances that cause an allergic response in some individuals and may cause a runny nose, watery, itchy eyes, rash, wheezing or occasionally death

Available chlorine – amount of chlorine that is free to chemically react with organic matter in order to sanitize a surface

B

Bacteria – single-celled organisms that live in and around us; they are too small to see with the naked eye. Bacteria may be helpful (e.g., yogurt), but in certain conditions may cause illnesses (e.g., pathogenic microorganisms like *E. coli* 0157:H7)

Bacterial growth – an increase in the number of bacteria through division

Batch Number or Lot Number – a distinct code for each product on each container; a distinctive combination of letters, numbers or both assigned to a specific, identifiable batch of production

Biological hazard – any danger to food safety by the contamination of food with pathogenic bacteria

C

Calibrate – the process of adjusting an instrument for accuracy

CFIA – the Canadian Food Inspection Agency (the CFIA) is the inspection and enforcement agency for all federal inspection services related to food, animal health and plant protection

Chemical sanitation – sanitation method using an approved chemical sanitizer at a specified concentration and contact time

Clean – free of soil particles and foreign material usually visible to the eye

Community shared agriculture – a partnership between consumers and producers in which consumers pay for farm products in advance and producers commit to supplying sufficient quantity, quality and variety of products. Often consumers have the option to participate in the production of the farm products

Concentration – the strength of a solution; for example, one drop of bleach in a gallon of water would be a relatively low concentration of bleach

Container – a food receptacle or covering used to wrap, package, contain, cover or otherwise protect food

Contaminate – food may become contaminated when exposed to conditions which permit:

1. the introduction of foreign matter including filth, a poisonous substance or pests, or
2. the introduction or multiplication of disease causing microorganisms or parasites, or
3. the introduction or production of toxins

Control measure – any action or activity that can be used to prevent, reduce or eliminate a food safety hazard

Corrective action – procedures or activities to be taken when a deviation occurs and to prevent the problem from occurring again

Corrodible – deterioration due to the action of water, air or acid; for example, the steady dripping of water corrodes (rusts) the metal stopper in the sink

Cross contamination – occurs when disease carrying microorganisms are transferred from one food or surface to another, carried by utensils, hands, towels or other food

D

Danger zone – temperatures between 4°C and 60°C where microorganisms grow best

Deviation – failure of a standard operating procedure (SOP); a problem

Disinfection – reduction of microorganisms to a safe level

Due diligence – the degree of prudence that might be properly expected from a reasonable person under the particular circumstances

Dust control compounds – chemical compounds, usually in liquid spray or powdered form, that when used properly help to minimize the amount of dust particles that become airborne during cleaning. Some examples of commercial products available are Dustloc and Soiltac

E

Endospore – a resting stage produced internally by some bacteria which is resistant to unfavorable conditions; much like the seed of a plant

Enterohemorrhagic – to cause internal bleeding. For example *E.coli* O157:H7 is a pathogen that can cause internal bleeding

Eradication – steps/measures taken to totally eliminate a pest or weed from an area

F

Farm direct marketer – person who grows/processes an agricultural product or develops a service and sells it directly to the end user

Farm direct marketing – a marketing method whereby producers sell their products and services directly to the end consumer

Farm stand – a temporary structure used for the sale and display of agricultural products; usually operated on a seasonal basis on or near the farm or along a road near the farm

Farm store or farm market – a permanent structure that sells and displays a variety of agricultural and agriculturally themed products directly to consumers; may be operated on a year-round or seasonal basis: a retail outlet on the farm

Farmers' market – a food establishment whose proposed operation by a person or group of persons has been approved by the Minister responsible for Agriculture as an approved farmers' market under the administration of that Minister's Department

Farmers' market manager – person legally designated by the market or sponsoring body to oversee Alberta Approved Farmers' Market policies, operations, programs and legislative requirements and enforce the approved market guidelines

Farmers' market vendor – person or business that sells product through an Alberta Approved Farmers' Market

Food – any substance, including water and ice, manufactured, sold or intended for use in whole or in part as food or drink for human consumption

Foodborne illness – sickness caused by the ingestion of food containing microbiological, chemical or physical hazards; any illness that results from ingesting food or beverage

Food contact surface – the surface of equipment or utensils with which food normally comes into contact. It includes items such as market tables and demonstration equipment

Food establishment – a place, premises or vehicle where food intended for public consumption is sold, offered for sale, supplied, distributed, displayed, manufactured, prepared, preserved, processed, packaged, served, stored, transported or handled

Food grade – in the case of packaging, any material that will not transfer noxious or toxic substances into food and has been approved by the CFIA

Food safety plan – the practices and procedures undertaken by your business or market to protect food products from becoming contaminated and controlling microbial growth

FSEP (Food Safety Enhancement Program) – the federal food safety standard involving the application of HACCP principles in a federally inspected establishment

G

G. I. Tract (Gastrointestinal Tract) – the part of the digestive tract where the body processes food and eliminates waste. It includes the esophagus, stomach, liver, intestines and rectum

Good production practices (GPP) – general practices to reduce microbial food safety hazards; universal steps or procedures that control the operational conditions within a food establishment allowing for conditions that are favorable to the production of safe food (i.e., proper personal hygiene, sanitation program and food handler training, etc.)

H

HACCP – acronym for Hazard Analysis Critical Control Point; a systematic approach to be used in food production as a risk-based means to ensure food safety

HACCP plan – the document(s) which defines the procedures to be followed to ensure the control of product safety for a specific process, raw ingredient or recipe category

Handwashing station – a hand basin that enables the provision of hot and cold running water and that, in its immediate vicinity, has a

- a. dispenser for the provision of soap or is otherwise provided with soap in a container, and
- b. method of hand drying that uses single service products or a mechanical hand dryer

Hazard – agents in, or conditions of, food that have the potential to cause an adverse health effect or injury in consumers

Hemorrhage/internal hemorrhaging – to bleed/to bleed internally

Hygiene – conditions and practices followed to maintain health, including sanitation and personal cleanliness

I

Ice slurry – a mixture containing equal parts of crushed ice and water

Immunodeficiency – impairment of the immune response, predisposing to infection and certain illnesses

Immunodeficient – a condition wherein a person’s immune system has been compromised and becomes defective as the result of an inherited genetic error, by the actions of an infectious agent, or the result of disease

Infective dose – the amount of a pathogen that is required to make an individual sick; for example, the infective dose of *E. coli* O157:H7 is estimated to be as low as 10 bacterial cells

L

Label – any legend, word, ticket, tag, sign or mark attached to, included in, belonging to or accompanying any food or package

Lot number or batch number – a distinct code for each product on each container; a distinctive combination of letters, numbers or both assigned to a specific, identifiable batch of production

Low risk food – food unlikely to contain pathogenic microorganisms and will not normally support their growth due to the characteristics of the food (e.g., uncooked grains and cereals, bread, carbonated beverages, sugar based confectionary, alcohol)

M

Marketing channel – a system of individuals and businesses involved in the process of making a product available for use or consumption

Medium risk foods – these foods may contain pathogenic microorganisms but will not normally support their growth due to the characteristics of the food. Usually they are acidic, dried or high in salt (>20%) or sugar (>50%)

Mg/L or ppm – parts per million and mg/L are ways of expressing very dilute concentrations of substances

Microbe or microorganism – a general term for a microorganism, which includes any form of life too small to see without magnification. Bacteria, fungus, protozoa, yeast, moulds, helminthes (worms) and viruses are examples of microbes. The terms “microbe” or “microbial” are used instead of the term “microorganism”

Microbial – of or relating to microorganisms; relating to any form of life too small to see with the naked eye

Microbial growth – the growth of microorganisms occurs when they are reproducing and increasing in numbers

Microbial hazard – occurrence of a microorganism that has the potential to cause illness or injury

Monitoring – a planned sequence of observations or measurements to determine if SOPs are being followed

Mould – a fungus that produces surface growth on various kinds of organic matter, including foods

Multi-location abattoir – an abattoir that is portable and that may be mounted on a vehicle

N

Non-corrodible – resists deterioration due to the action of water, air or acid (e.g., commercially canned tomato tins are lined to prevent the acidic tomato contents from pitting the can)

Non-hazardous food – food that does not normally support the growth of disease causing bacteria and does not usually need to be refrigerated

Nonperishable foods – have a shelf life greater than 90 days at room temperature

O

On-farm food safety (OFFS) – food safety programs developed to create the proper operation environment that minimize food safety risks on the farm through the implementation of Good Agricultural Practices

P

Package – anything in which any food is wholly or partly contained, placed or packed

Packaged ice – potable water in a frozen state that is sealed in a container or package and intended for human consumption

Parasite – organism that lives in or on the living tissue of a host organism at the expense of that host

Parts per million (mg/L) – parts per million and mg/L are ways of expressing very dilute concentrations of substances. Just as percent means out of a hundred, so parts per million or ppm means one out of a million. One ppm is equivalent to 1 milligram of something per liter of water (mg/L)

Pathogen, pathogenic bacteria or pathogenic microorganism – any bacteria, virus, mould or other form of life too small to be seen by the naked eye and capable of causing disease, illness or injury; disease causing microorganisms which if eaten in a food can make people sick

Perishable – any food product or ingredient that is susceptible to deterioration or loss of quality when subjected to temperature abuse

Permitted Facility – facility licensed by the regional health authority under the authority of the Food and Food Establishments Regulation of the *Public Health Act*

Pest – any animal or insect of public health importance including, but not limited to, birds, rodents, roaches, flies and larvae that may carry pathogens that can contaminate foods

Pesticide – a substance that is used to prevent, destroy or repel any insect, nematode, rodent, predatory animal, parasite, bacteria, fungus, weed or other form of plant or animal life

pH – scale by which the acidity and/or alkalinity of a food is measured. The lower the pH number, the more acid is in the product. pH values range from 0 to 14

Post mortem inspection – examination of the carcass, blood or parts of the carcass of a food animal by an official veterinarian or by an inspector under the supervision of an official veterinarian

Potable – water that is safe for human consumption. It meets provincial water quality standards

Potentially hazardous food – food capable of supporting the rapid and progressive growth of pathogenic microorganisms or the production of toxins; has a pH greater than 4.6 and a water activity (A_w) of 0.85 or more

Premises – all elements (interior and exterior) in the building and surrounding property including driveway, parking lot, drainage, building design and construction, sanitary facilities and waste management

Prepackaged product – any product that is packaged in a container in such a manner that it is ordinarily sold to or used or purchased by a consumer without being re-packaged

Processed meat products – products where there has been a substantial change in the appearance or nature of a meat cut by deboning, slicing, fragmenting, thermally processing, preserving, dehydrating, fermenting or adding an approved ingredient. It does not include dressing, trimming, refrigerating, freezing or defrosting.

(Dairy) Producer – a person who sells, or supplies for sale or processing, milk or farm-separated cream that has been produced by one or more dairy animals owned or controlled by that person.

Product flow – sequential steps or procedures performed in the manufacturing of a processed food product

Protozoa – one-celled animals that are larger and more complex than bacteria but usually too small to see, and may cause illness

(Dairy) Processor – any person who processes for sale 50 litres or more of milk or dairy product on any day, but does not include a retail establishment that operates or uses a freezing device to freeze a frozen dairy product mix manufactured by a processor

Q

Quats (quaternary ammonium compounds) – chemical sanitizing agents that are most effective when used at 200 ppm

R

Ready-to-eat foods – foods that require no further preparation before consumption (e.g., chocolate bars, salami)

Recall – process of removing from sale food products that do not meet safety or company standards

Reusable packaging containers – includes totes, crates, tubs, etc. If in contact with food products, they must be constructed of food grade materials

S

Sanitary – free of harmful microorganisms and other contaminants

Sanitation program – written procedures outlining cleaning and sanitizing steps and methods

Sanitize – a process that destroys most microorganisms and reduces bacterial contamination to a safe level

Sanitizers – chemical disinfecting agents such as bleach, iodine or quats that destroy pathogens

Sell – offer for sale, expose for sale, have in possession for sale and distribution

Shelf life – the period of time during which a product can be stored under specified temperature conditions and remain suitable for use

Shelf stable – shelf stable foods do not require refrigeration and can be stored safely at room temperature without deterioration in quality within a specified time period

Single service – item designed to be used only once and then discarded

Single (service) use items – designed to be used only once and then discarded; includes such items as plastic utensils, styrofoam and paper service items, etc. For example, styrofoam meat trays, which are only designed to hold that one cut of meat, should be discarded after that single use. When the single service item such as the styrofoam tray is first produced, it is considered clean and sanitary. Once it is used that first time, it cannot be properly cleaned and sanitized for re-use

Spoilage bacteria – bacteria that break down foods so that they look, taste and smell bad. Spoilage bacteria affect food quality not food safety

Standard operating procedure (SOP) – a written description of a particular task or procedure undertaken to ensure safe food handling; a set of instructions describing the activities necessary to complete a task that reduces the risk of foodborne illness

Sterilize – to completely eliminate microbial viability by approved means; to make free from all forms of life, including bacteria, usually using chemical or heat methods

T

Temperature abuse – occurs when food is not held at the proper temperature. For example, keeping raw meat at room temperature for more than two hours before cooking is temperature abuse

Temperature log – an ongoing record of food temperatures

Thermal sanitation – sanitation method using hot water or steam for a specified temperature and contact time

Time/temperature rule – the rule that states the growth of microorganisms in food is affected by the temperature the food is held at as well as the time spent at that temperature. For example, refrigeration temperatures slow the growth of pathogenic microorganisms; however, if sufficient time is allowed to pass at refrigeration temperatures, the organisms will achieve sufficient growth to cause foodborne illness

Traceability – the ability to trace the history, application or location of a food item by means of recorded information; ability to track a food item forwards or backwards through the food supply chain. Traceability can be subdivided into two key functions: tracking or tracing

Tracing – the ability to identify the origin of an item or group of items through records, back through the food supply chain

Tracking – the ability to follow the path of an item as it moves through the food supply chain from point of production to point of consumption

U

U-pick – operations where the customer comes to the farm to buy fruits, vegetables or flowers that they have harvested for themselves

Utensil – equipment that is used in the preparation, processing, service, storage and dispensing of food but does not include tabletops, counter tops or similar working surfaces

V

Value added – adding additional value to agri-food products or services by further developing or processing a primary product; any activity or process that alters the original agricultural product or commodity for the purpose of gaining a marketing advantage. Value added may include bagging, packaging, pre-cutting, processing, etc.

Vermin – any of various small animals and insects that are pests (e.g., mice, squirrels, cockroaches)

Violative – tending to act against the requirements of the law; offend against

Virus – a non-cellular microorganism that can reproduce only within a host cell; a type of infectious agent, much smaller than common microorganisms

W

Water activity – the amount of free water in the food that is available to pathogens. Denoted by the symbol A_w . Pure water has a water activity of 1.0

Warewashing – the cleaning and sanitizing of equipment and utensils

Y

Yeast – a microorganism in the fungus family

Appendix C: Legislation and Standards

Websites of Specific Acts, Regulations and Codes

The following is a listing of the specific web pages that reference acts, regulations and codes discussed in this manual.

Federal Legislation

All federal legislation and related regulations can be obtained from the Department of Justice Canada at the following internet address: <http://canada.justice.gc.ca/en/>

Many of the acts and regulations of concern to farm direct marketers of food products are found on the CFIA site at: <http://www.inspection.gc.ca/english/reg/rege.shtml>

Food and Drugs Act

<http://laws.justice.gc.ca/en/F-27/>

Canada Agricultural Products Act

<http://laws.justice.gc.ca/en/C-0.4/index.html>

Information on the following regulations can be found at the accompanying internet addresses:

Dairy Products Regulations

<http://laws.justice.gc.ca/en/C-0.4/SOR-79-840/index.html>

Egg Regulations

<http://laws.justice.gc.ca/en/C-0.4/C.R.C.-c.284/index.html>

Fresh Fruit and Vegetable Regulations

<http://laws.justice.gc.ca/en/C-0.4/C.R.C.-c.285/index.html>

Honey Regulations

<http://laws.justice.gc.ca/en/C-0.4/C.R.C.-c.287/index.html>

Maple Products Regulations

<http://laws.justice.gc.ca/en/C-0.4/C.R.C.-c.289/index.html>

Processed Products Regulations

<http://laws.justice.gc.ca/en/C-0.4/C.R.C.-c.291/index.html>

Code of Practice for Minimally Processed Ready-to-Eat Vegetables

http://www.inspection.gc.ca/english/plaveg/fresh/read-eat_e.shtml

Consumer Packaging and Labelling Act & Regulation

<http://laws.justice.gc.ca/en/C-38/index.html>

Weights and Measures Act & Regulations

<http://laws.justice.gc.ca/en/W-6/index.html>

Fish Inspection Act & Regulations

<http://laws.justice.gc.ca/en/F-12/index.html>

Meat Inspection Act & Regulations

<http://laws.justice.gc.ca/en/M-3.2/index.html>

National Dairy Code

http://www.cfis.agr.ca/english/regcode/ndrc/amdmt_oct00/ndc_ppr_e.pdf

Provincial Legislation

Alberta Public Health Act

<http://www.canlii.org/ab/laws/sta/p-37/20050927/whole.html>

Food and Food Establishments Regulation

<http://www.canlii.org/ab/laws/regu/2003r.328/20050801/whole.html>

Dairy Industry Act & Regulation

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6043](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6043)

Livestock and Livestock Products Act & Regulations

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6127](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6127)

Livestock Industry Diversification Act & Regulations

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6136](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6136)

Meat Inspection Act & Regulations

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6137](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6137)

Vegetable Sales (Alberta) Act & Regulation

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6147](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6147)

Alberta Food Retail and Foodservices Code

http://www.health.gov.ab.ca/professionals/foodcode/Food_Code.pdf

Appendix D: Potentially Hazardous Foods

While many foods can be hazardous under specific circumstances, these foods have the greatest potential.

Potentially hazardous foods are generally defined as foods in a form or state that are capable of supporting the rapid and progressive growth of infectious and/or toxigenic microorganisms. Such foods include, but are not limited to, milk or milk products, eggs, meat, poultry, fish, shellfish or foods that have these products as ingredients. Other foods that fall into this category include certain baked goods with cream fillings.

Examples of Potentially Hazardous Foods

Examples include but are not limited to:

Antipasto	Garlic spreads
Cabbage rolls	Juice
Home canned fruit, vegetables or meat including those products that are pressure canned (except jam, jelly and pickles)	Meringue pie (egg product)
Cheese	Meat or meat products
Cracked or dirty eggs	Oils infused with garlic or herbs
Cream filled or custard filled pastries	Perogies
Dairy products	Pumpkin pie
Fish	Sauces
	Sausage rolls
	Whipped butter

Examples of Non-Hazardous Foods

Examples include but are not limited to:

Beans (dry)	Eggs, whole
Bread and buns (no potentially hazardous fillings)	Flaked pastry, fruit filled
Brownies	Fruit pies and tarts
Butter tarts	Fruit leather
Cakes (icing sugar only, no dairy creams)	Fudge
Cereal products	Hard candy
Cinnamon buns	Honey
Coffee beans, whole or ground	Jam
Cookies	Jelly
Dried fruits	Muffins
Popcorn	Noodles (dry only)
Relish	Pickles (as defined)
Rice crispy squares	Spices
Salsa (fresh or frozen)	Sunflower seeds
Soup starters (dry)	Syrup
	Wine vinegar

Appendix E: Standard Operating Procedures

A standard operating procedure (SOP) is a document providing all the relevant information for the required completion of a procedure. The steps for calibrating a thermometer or the proper way to transport your products to market are two examples of SOPs for your operation. SOPs must be detailed enough so that all employees understand what is required of them when completing the task and can do so properly.

An SOP should include the following information.

SOP Title:

Be brief, but descriptive.

Purpose:

Briefly explain the purpose(s) of the procedure. Include useful background information.

Definitions:

Define all unique terms, acronyms, units, etc., used in the SOP.

Personnel:

Include the job title of the person(s) who is (are) responsible for completing the procedure and the person, usually the food establishment operator, responsible for ensuring all SOPs are completed correctly. List any special training skills needed to carry out the procedure.

Safety:

Note all work safety hazards associated with the activity. List the safety precautions to be taken (e.g., breathing apparatus) and refer to the location of relevant safety information and safety manuals.

Procedure:

Be clear and concise so that no misunderstandings or confusion arises. The use of flow charts or diagrams is a great way to ensure that SOPs are clear. Describe how equipment is used. The written details of the procedure must permit a qualified individual, not necessarily familiar with the task, to perform the procedure with a minimum of supervision. The supervisor or the food establishment operator must ensure that all SOPs are followed exactly.

Records:

Records show when each SOP procedure is completed. They should document both the required frequency of the action and its completion.

Corrective Actions:

Mistakes happen. An SOP should state what actions/steps are to be taken in the event that a deviation occurs. Indicate where the corrective actions are to be recorded.

Verification:

The operations manager needs to ensure that specified activities occur, records are kept and corrective actions take place.

Example of SOP for ABC Farm Store

Note: this SOP is to monitor on a weekly basis the activities that are to be occurring on a daily basis such as garbage disposal, removal of litter, etc.

Revision Date: _____

Title	A1	Premises
	A1.1	Outside Property and Buildings
Purpose	A1.1.1	Farm store building is not located near any environmental contaminants and the surrounding property, including parking lot and roadway are free of debris and refuse, adequately drained and maintained to minimize environmental hazards
Company Name		ABC Farm Store
Definitions		Olfactory – sense of smell
Personnel		Once a week the designated employee will inspect the farm market premises and fill out Record A1 (Premises Worksheet).
Procedure		<p>Inspection tasks will include:</p> <ol style="list-style-type: none"> 1. Check that there are no environmental contaminants in close proximity to the farm store facility. This will include a visual and olfactory check to ensure that any changes in the area will not have a negative impact on food safety. 2. Check the grounds for general clutter, garbage, inappropriate storage of equipment, pallets, overgrowth of weeds, etc. 3. Check that the parking lot, roadway and surrounding grounds are free of debris and refuse such as containers, scraps, papers, accumulated dust or dirt, etc. Check that garbage cans and dumpsters are not overflowing, leaking or too close to the market building. 4. Check that the parking lot, roadway and surrounding grounds are adequately drained and maintained. This will include checking for pooling water and potholes.
Safety		N/A
Records		Any deficiencies will be noted and the appropriate corrective actions will be determined, recorded and carried out on Record A1 (Premises Worksheet).
Corrective Actions		<p>Any deficiencies will be noted and the appropriate actions will be determined, recorded on Record A1 and carried out. Appropriate corrective actions include:</p> <ol style="list-style-type: none"> 1. Idle farm supply trucks away from the market area to eliminate diesel fumes entering the store. 2. Place a second covered garbage can near the market entrance if required. 3. Return pallets and equipment to appropriate storage area. 4. Pump out standing water. 5. If uncertain how to correct a problem, check with supervisor.
Verification		<ol style="list-style-type: none"> 1. On a quarterly basis the food establishment operator or designated supervisory employee will verify Record A1. This will include checking to ensure activities were completed and that corrective actions were taken and were appropriate. 2. Twice a market season, the food establishment operator will do an inspection with the designated employee to ensure that potential hazards have not been missed during the inspection and to reinforce training. Deficiencies will be immediately pointed out to the responsible staff and will be noted on the back of Record A1.

Appendix F: Record Templates

Example Formats for Product Coding

You can adapt these product coding examples to create a product identification system that suits the type of products you sell and your operation. For example, if you produce parsnips instead of carrots simply alter the code for carrots, “C”, to one applicable to parsnips, “P”. The type of product, the date the product was harvested or processed, and any characteristics you can use to identify a specific product such as storage facility, processor, etc., should be included in the codes.

1) Bagged carrots grown by farmer Bunny Hatfield

The type of product and the date the product was produced is always included. For produce it is a good idea to also identify the field where the product grew and the bin used for storage. Think about the recall process when you plan your operations. If product is all stored in one bin and that bin has one product code number, the contents of the entire bin will be impacted in the event of a recall.

Product: Carrots = C

Date harvested: September 1, 2005 = 090105 (month, day, year)

Field number: 01, 02, 03, etc. = 01

Bin storage number: Bin #1, #2, etc. = 2

Example code: **C-090105-01-2**

In this case an optional dash separates each identifier within the code

2) James Cartwick’s frozen whole chicken from flock #6

In this example the slaughter date replaces the date harvested. The flock number identifies the birds that were processed. Only one processor is used so that cannot be used as a unique identifier. But James uses a different inspected freezer facility for birds sold at each of his markets. The storage facility should be identified in his product code. The storage facility “4” represents the Red Deer storage facility on James’ list. If you use different storage facilities, assign a different number to each. Document the storage facility and its corresponding number in your records.

Product: Chicken = CH

Date slaughtered: February 1, 2005 = 03205 (date, year)

032 represents the thirty-second day of the 365 day year;

05 represents the year 2005

Flock number: flock # 6 = 06

06 represents the flock (batch) number

Storage facility: = 4

The number “4” at the end of the example code is for storage facility 4

Example code: **CH03205064**

Dashes are not used between the different parts of this code.

3) Strawberry Jam from Kurt Farner's farm

In this example a single letter represents each month. The letter I is not used because it can be easily confused with the number 1. A variation of this system can be used to code any information you require.

Product produced: Strawberry Jam = SJ

Date jam processed: January 1, 2005 = A015 (month, year)

“A” represents the month of January,
 “01” represents the day of the month,
 “5” represents the year, 2005,
 “03” represents the batch number.

The months can be represented by a single letter:

A = Jan.	E = May	J = Sept.
B = Feb.	F = June	K = Oct.
C = Mar.	G = July	L = Nov.
D = Apr.	H = Aug.	M = Dec.

Batch number: batch #2 = 02

Example code: **SJ A015 02**

Spaces can be used between the different parts of the code

4) Freshly baked apple pie from Kelly Sand's home bakery

The simple product code identifies the type of product and the production date.

Product produced: Apple Pie = A

Date pie was made: June 24, 2005 = 05JN24 (year, month, day)

Abbreviations are used for the months:

January = JA	July = JL
February = FE	August = AU
March = MR	September = SE
April = AL	October = OC
May = MA	November = NO
June = JN	December = DE

Batch number: batch #3 = 03

Example code: **A-05JN2403**

If Kelly doesn't sell all the pies at the market, she adds the letters MF at the end of the code to differentiate them from the pies she freezes immediately after baking for later sale, identified by the letters FF.

Example code for the same apple pie that is frozen after the market: **A-05JN2403-MF**

Example code for an apple pie from the same batch but frozen immediately after baking:
A-05JN2403-FF

Premises Example #1

Premises Worksheet

Note: Wordings in columns should reflect your operation. This worksheet is provided only as an example. Use the criteria in your food safety plan to adapt this worksheet for your operation.

Title: Premises Review Worksheet
Completed By: _____ Date: _____

Instructions:				
<input type="checkbox"/> The Premises Review Checklist is completed _____ (select an appropriate time period, e.g., weekly, monthly, quarterly) <input type="checkbox"/> If deviations are discovered during the monitoring, they are recorded on the checklist.				
Exterior Design	YES	NO	Deviation	Corrective Action
Garbage Bin			Have lids & plastic liners	
Interior Design	YES	NO	Deviation	Corrective Action
Building Interior			All walls and ceilings are painted, free of mould, paint flakes and leakage	

Washing Facilities and Washrooms		YES	NO	Deviation	Corrective Action
Washrooms	Handwash signs are in place				
	Paper towel dispenser works and is full				
Handwash Stations					

Garbage Disposal	YES	NO	Deviation	Corrective Action
Emptied as per schedule				

Water Quality Testing	YES	NO	Deviation	Corrective Action
Water testing is conducted as per schedule				

Cleaning Equipment	YES	NO	Deviation	Corrective Action
Chemicals and equipment locked in designated area				

Premises Example #2

Premises – Records

Date & Time	Action Taken	Reason Action Was Taken	People To Contact	Followup Date (if required)	Additional Information & Comments	Recorded by

Page _____ of _____

Sanitation Example #1

Sanitation Program

Cleaning and Sanitation Log	Date:
-----------------------------	-------

Instructions:									
<input type="checkbox"/> Equipment and areas are classified according to their cleaning frequency requirement (i.e., after each use, daily, weekly, monthly). Upon completion of cleaning and sanitation, the corresponding information is recorded, dated and signed.									
<input type="checkbox"/> A check mark indicates that the criteria are met.									
<input type="checkbox"/> An "X" indicates that the criteria are not met and there must be a note about the deviation and corrective action.									
<input type="checkbox"/> "N/A" indicates that the piece of equipment/area was not used or did not need to be cleaned.									
Week beginning and ending:									
Frequency: Daily Cleaning and Sanitation (Employee initial on corresponding day of cleaning and sanitation)									
Name (Equip/area)	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Deviation and Corrective Action	Initials
e.g., Tables, utensils									
Frequency: Weekly Cleaning and Sanitation (Employee initial on corresponding day of cleaning and sanitation)									
Name (Equip/area)	Mon	Tue	Wed	Thurs	Fri	Sat	Sun	Deviation and Corrective Action	Initials
e.g., Washrooms, floors									

Cleaning and Sanitation Log	Date:
-----------------------------	-------

Instructions:

- There is a month's worth of information on the Cleaning and Sanitation Log.
- There are Cleaning and Sanitation Schedules with every piece of equipment and area identified by a specified code name.
- Equipment and areas are classified according to their cleaning frequency requirement (i.e., after each use, daily, weekly, monthly). Upon completion of cleaning and sanitation, the corresponding information is recorded, dated and signed.
- A check mark indicates that the criteria are met.
- An "X" indicates that the criteria are not met and there must be a note about the deviation and corrective action.

Month/Year:					
Frequency: Monthly Cleaning and Sanitation					
Name (Equip/area)	Prior Activity Date:	Current Date:	Deviation	Corrective Action	Initials
e.g., Windows					

Frequency: Quarterly Cleaning and Sanitation					
Name (Equip/area)	Prior Activity Date:	Current Date:	Deviation	Corrective Action	Initials
e.g., Walls					

Sanitation Example #2

Sanitation Program

Date & Time	Area or Equipment Cleaned & Sanitized	Cleaning & Sanitizing Methods Used	Comments & Corrective Actions	Recorded By
<i>Oct 6 2005</i>	<i>All tables/booths</i>	<i>cleaned with hot soapy water, then let air dry, then used 200 ppm bleach solution</i>	<i>Table #3 (by window) is wood and splintered; needs to be replaced with a new table (smooth plastic table would be best)</i>	<i>James Hetfield</i>

Temperature Records Example #2

Transportation – Temperature Log

Date & Time	Product Description	Temperature Before Delivery	Temperature After Delivery	Comments & Corrective Action	Recorded by

Equipment Maintenance Record Example

Record 12: Equipment Maintenance

Date Time	Equipment Item	Maintenance Required	Maintenance Completed	Comments & Corrective Actions	Recorded by

Page ____ of ____

Staff Training Example

Staff Training Record

Name of staff: _____

Worker/Staff Training	Training Date	Comments	Future Training Required	Trainer
Foodborne Illness				
Temperature Control				
Legislation				
Equipment Maintenance				
Market Setup				
Storage				
Transportation				
Personal Hygiene				
Food Handling				
Sanitation				
Pest Control				
Recall & Traceability				

Pest Control Example

Pest Control Products Record

Name of Pest Control Product	Quantity Purchased	DIN/Lot Numbers	Date Applied	Amount/Quantity Applied	Location of Application	Applicator

Reviewed by: _____

Date: _____

Recall Form #1

FORM 1: RECALL TEAM CONTACTS

Function	Name	Office Phone	Cell Phone	Home Phone	Time Contacted
Recall Coordinator		()	()	()	
Production		()	()	()	
Processing		()	()	()	
Distribution		()	()	()	
Sales/Marketing		()	()	()	
Public Relations (media)		()	()	()	
Finance		()	()	()	
Legal		()	()	()	
Others		()	()	()	

Date: _____

Recall Form #3

FORM 3: CRITICAL RECALL INFORMATION

To be completed by: Recall Coordinator

Purpose: To assemble and document critical information required for recall

Date: _____

Product (s) involved:

Product	Lot Number/Product Code	Packaging

Reason for recall:

Describe precisely the reasons for product removal or correction and the date and circumstances under which the product deficiency was discovered.

Risk assessed (check one):

- Threat to health:
- Potential hazard:
- Adulteration or mislabelling:
- Product withdrawal/stock recovery:

Why?

Total amount produced, harvested, packed or processed:

Number of units: _____

Production codes: _____

Total amount in distribution:

Distribution information:

Completed by: _____

Recall Form #5

FORM 5 PRODUCT INVENTORY

To be filled out by: Production Contact

Purpose: To assist in hazard assessment and determination of recall strategy

	Lot #	Lot #	Lot #
Date received in inventory			
Total amount prepared for sale			
Inventory on hand			
Amount sold			
Amount of product isolated			
Location of isolated product			
Product codes			

Inventory taken by: _____

Recall Form #6

FORM 6: RECALL STRATEGY

To be filled out by: Recall Coordinator

Purpose: To assist in the hazard assessment and determination of recall strategy

Situation	Class	(check)
Threat to health	1	
Potential hazard	2	
Adulteration or mislabelling	3	
Product withdrawal		
Stock recovery		

Depth of Recall:

Level	(check any)	Rationale
Consumer		
Retail/Food service		
Wholesale		

Communications:

Action required	Yes	No
Press release		
Public notification		

Additional comments:

Signed: _____ Date: _____

Recall Form #7

FORM 7: DISTRIBUTION

To be completed by: Sales contact

Purpose: To determine distribution of affected product and customers to be notified

Date: _____

Present stock on hold: Yes _____ No _____

If no explain: _____

Product code(s) to be recalled:

1) _____ 5) _____ 9) _____

2) _____ 6) _____ 10) _____

3) _____ 7) _____ 11) _____

4) _____ 8) _____ 12) _____

Date	Amount sold	Sold to	Comments

Completed by: _____

Recall Form #8

FORM 8: CUSTOMER COMMUNICATION LOG

To be completed by: Sales
 Purpose: To document customer contacts and product retrieval

Date: _____

Customer	Contact Date	Contact person	By phone ?	By fax ?	In person ?	Verification check (signature)

Completed by: _____

Recall Form #9

FORM 9: RETRIEVED PRODUCT

To be completed by: Distribution contact

Purpose: To reconcile and document retrieved/destroyed product

Date: _____

Customer	Retrieved Product Count	Picked up by: (name)	Number of Units	Disposal Location	Witness of Disposal (signature)

Completed by: _____

Date: _____

Appendix G: Food Storage Chart

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BAKERY ITEMS

Bakery items containing custards, meat or vegetables or with frosting made of cream cheese, whipped cream or eggs must be kept refrigerated.

FOOD	SHELF	FRIDGE	FREEZER
Bread, commercial	2–4 days	7–14 days	1–3 months
Bread, pita	2–4 days	4–7 days	1–2 months
Cakes, angel food, sponge	1–2 days	5–7 days	2 months
Cakes, pound	3–4 days	5–7 days	2 months
Cakes, filled and frosted	no	1–2 days	2 months
Cheesecake	no	7 days	2–3 months
Cookies, bakery & homemade	2–3 weeks	2 months	8–12 months
Doughnuts, glazed & cake	1–2 days	5–7 days	1 month
Doughnuts, cream filled	no	3–4 days	no
Muffins, Danish pastries	1–2 days	7 days	2 months
Pies, cream	no	3–4 days	no
Pies, fruit	1–2 days	7 days	6 months
Pies, pumpkin	no	3–4 days	1–2 months
Rolls	3–4 days	7 days	2 months

FOODS PURCHASED FROZEN

When shopping, pick up frozen foods just before checking out. Take these foods directly home and place in freezer as soon as possible. Keep a thermometer in your freezer and check often that the temperature is safe -18°C (0°F). For optimum safety, thaw these foods in the refrigerator. But if time is short, defrost in a sink of cold water, changing the water every half hour, or in the microwave following the appliance manufacturer's directions and cook immediately.

FOOD	FREEZER	IN FRIDGE AFTER THAWING
Appetizers		
Battered cheese sticks	8 months	cook frozen
Battered vegetables	12 months	cook frozen
Battered zucchini	18 months	cook frozen
Meat balls	6 months	cook frozen
Mini egg rolls	18 months	cook frozen
Phyllo pastry wrapped appetizers	12 months	cook frozen
Quiche	12 months	cook frozen
Sausage rolls, cooked	4 months	cook frozen
Bread dough	see "best before date"	after baking, 4–7 days
Cookie dough	2–4 months	check label
Egg substitutes	see "best before date"	6–7 days
Fish		
Breaded, sauced	3 months	cook frozen

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FOODS PURCHASED FROZEN Continued.../

FOOD	FREEZER	IN FRIDGE AFTER THAWING
Raw, fat (salmon, lake trout)	2–3 months	1–2 days
Raw, lean (sole, cod, pike)	3–6 months	1–2 days
Fruit (berries, melons)	4–6 months	4–5 days
Fruit juice concentrate	6–12 months	7–10 days
Ice cream (in refrigerator freezer)	1 month	no
Ice cream (in chest freezer)	2–4 months	no
Lamb roasts	8–10 months	3–4 days
Lamb chops	8–10 months	2–3 days
Meat patties, beef	2–3 months	cook frozen
Pancakes, waffles	2 months	3–4 days
Pastry dough	2–3 months	1 day
Perogies	3 months	check label
Pizza	1–2 months	1 day
Potatoes, French–fried	4–8 months	no
Poultry		
Chicken & turkey, whole	12 months	2 days
Chicken & turkey, parts	6 months	2 days
Chicken & turkey, ground	2–3 months	1 day
Breaded, cooked	6 months	cook frozen
Breaded, uncooked	6 months	cook frozen
Breaded portions, stuffed/sauced	6 months	cook frozen
Sausages		
Precooked	1–2 months	7 days
Uncooked	1–2 months	1–2 days
Sherbet, frozen yogourt	2–4 months	no
Shrimp, shellfish, raw	2–3 months	1–2 days
Smoked fish	2 months	1–2 days
Prepared meals		
TV dinners	3 months	cook frozen
Breakfasts	3 months	cook frozen
Entrees	3 months	cook frozen
Vegetables	8–12 months	cook frozen
Whipped topping	6 months	2 weeks



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FOODS PURCHASED REFRIGERATED

Keep a thermometer in your refrigerator and check often that the temperature is below 4°C (40°F). Some bacteria grow and multiply, although very slowly even at these temperatures, so foods will stay fresh and safe for a limited period of time. If you do not plan to use them right away, it's best to freeze foods right after purchasing. Raw juices from meat, poultry and fish can contain bacteria. Place packages of these foods on trays to prevent their juices dripping onto other foods.

FOOD	REFRIGERATED	FROZEN
Beverages, fruit, cartons, bottles		
Opened	7–10 days	
Unopened	3 weeks	
Unpasteurized	1 day	
Bread		
Pizza crusts	see “best before date”	3 months
Tortillas	see “best before date”	1–2 months
Tube cans, biscuits, rolls	see “best before date”	do not freeze
Cookie dough, unopened, opened	see “best before date”	2–4 months
Dairy Products		
Butter		
Salted, unopened	12 weeks	6 months
Salted, opened	3 weeks	6 months
Unsalted, unopened	8 weeks	6 months
Unsalted, opened	3 weeks	6 months
Cheese		
Cheese, firm, unopened	3–6 months	
Cheese, firm, opened	3–4 weeks	
Cheese, firm, sliced	2 weeks	
Cheese, grated, unopened	see “best before date”	
Cheese, grated, opened	5 days	
Cheese, semi-soft, unopened	see “best before date”	
Cheese, semi-soft, opened	2–3 weeks	
Cheese, soft, unopened	see “best before date”	
Cheese, soft, opened	1 week	
Cheese, processed, unopened	3 months	3 months
Cheese, processed, opened	3–4 weeks	
Cheese, processed spread, unopened	3–4 years	
Cheese, processed spread, opened	2 months	
Cottage Cheese, Ricotta, Quark	see “best before date”	no
Cream cheese	see “best before date”	no
Cream cheese dips and spreads		
Unopened	see “best before date”	
Opened	10 days	
Cream		
Whipping	See “best before date”	no
Aerosol can, real whipped cream	3–4 weeks	no
Eggnog, commercial	See “best before date”	6 months
Milk, homogenized	See “best before date”	3 months
Milk, buttermilk	See “best before date”	
Sour cream	See “best before date”	

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FOODS PURCHASED REFRIGERATED Continued.../

FOOD	REFRIGERATED	FROZEN
Yogurt		
Unopened	See "best before date"	
Opened	7-10 days	1-2 months
Deli Foods		
Meats and sausages, sliced	2-3 days	
Stuffed cabbage rolls	2-3 days	
Chicken, turkey, sliced	1-2 days	
Meat pies	2-3 days	
Rotisserie chicken	3-4 days	3 months
Salads	1-2 days	
Sausage rolls	2-3 days	
HMR Home Meal Replacements	These products are evolving. Many are prepared and packaged in different ways. Check for a "best before date" and storage information on the label.	
Beef pot roast		
Cooked roast pork		
Cooked turkey		
Turkey gravy		
Stuffing		
Eggs, whole	See "best before date"	
Egg whites	See "best before date"	
Fish/Shellfish		
Anchovies, opened	3-4 days	3 months
Fish, fatty, raw (salmon, lake trout)	2-3 days	2-3 months
Fish, lean, raw (sole, cod, pike)	2-3 days	3-6 months
Fish, cooked	1-2 days	4-6 months
Shellfish, raw crab & lobster	12-24 hours	2 to 3 months
Shellfish, raw, unshelled, shrimp	1-2 days	2 months
Shellfish, raw, shelled, shrimp	1-2 days	3 months
Shellfish, cooked, unshelled, shrimp	1-2 days	2 months
Shellfish, raw & cooked, unshelled, clams, mussels	3 days	2 months
Shellfish, raw & cooked, shelled, clams, mussels	3 days	3 months
Shellfish, oysters, live	1 day	4 months
Smoked salmon (fresh lox)	1-2 days	2 months
Margarine, unopened	8 months	6-12 months
Margarine, opened	1-3 months	
Meat, fresh		
Ground meat	1-2 days	2-3 months
Beef roasts	3-4 days	10-12 months
Beef steaks	2-3 days	10-12 months
Lamb roasts	3-4 days	8-10 months
Lamb chops	2-3 days	8-10 months
Pork roasts	3-4 days	8-10 months
Pork chops, ribs	2-3 days	8-10 months
Sausages	1-2 days	1-2 months
Veal roasts	3-4 days	4-5 months

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FOODS PURCHASED REFRIGERATED Continued.../

FOOD	REFRIGERATED	FROZEN
Veal chops	2–3 days	4–5 months
Variety meats, liver, kidneys	1–2 days	3–4 months
Meat, smoked or processed		
Bacon	6–7 days	1–2 months
Ham, fully cooked, whole	6–7 days	no
Ham, fully cooked, slices	3–4 days	no
Ham, cook before eating	6–7 days	no
Hot dogs, unopened	2 weeks	2–3 months
Hot dogs, opened	7 days	2–3 months
Lunch meats, packaged	see “best before date”	1–2 months
Sausages	7 days	2–3 months
Pasta, fresh	see “best before date”	1–2 months
Pizza	see “best before date”	
Poultry, Fresh		
Ground chicken and turkey	24 hours	2–3 months
Chicken & turkey, whole	2 days	1 year
Chicken & turkey, parts	2 days	6 months
Chicken giblets	2 days	3–4 months
Duck, goose, whole	1–2 days	3 months
Soups	see “best before date”	2–3 months
Soy fortified beverage, opened	see “best before date” or	5–7 days
Tofu cakes, unopened	see “best before date”	3 months
Tofu cakes, opened (changing water daily)	5–7 days	
Vegan meat alternatives, unopened	see “best before date”	4 months after “best before date”
Vegan meat alternatives, opened	4 days	4 months after “best before date”
Vegan single servings entrees	see “best before date”	no



How To Store Food Safely ©

FRESH PRODUCE – FRUITS

Fruits are safe at room temperatures, but after ripening they will mold and spoil quickly. So store ripe fruit in the refrigerator, or most fruit can be frozen, following directions in a reliable freezing guide. Storage life of most home frozen fruit is 6 -12 months, depending on the fruit.

FRUITS	SHELF	FRIDGE
Cut fruit, fruit cups	no	1–2 days
Apples, in season, in perforated plastic bag	no	2 months
Apples out of season	no	2 weeks
Apricots, uncovered	until ripe	1 week
Avocados	until ripe	2–5 days (ripe)
Bananas	until ripe	2 days (ripe)
Blueberries, loosely covered	no	10 days
Cherries	no	3 days
Cranberries, uncovered	no	1–2 weeks
Grapefruit, covered	no	1 month
Grapes	no	5 days
Kiwifruit, covered	until ripe	1–2 weeks (ripe)
Lemons, limes, covered	1 week	1 month
Mangos	until ripe	3 days (ripe)
Melons		
Most types, whole, ripe, covered	until ripe	3 days (ripe)
Most types, precut, tightly sealed	no	2– 3 days
Watermelon, whole	few days	1 week (ripe)
Watermelon, precut, tightly sealed	no	up to a week
Nectarines, uncovered	until ripe	1 week (ripe)
Oranges, loosely covered	1 week	1 month
Papaya	until ripe	1 week (ripe)
Peaches, uncovered	until ripe	1 week (ripe)
Pears, uncovered	until ripe	3–7 days (ripe)
Pineapple, uncovered		2–3 days
Plums	until ripe	5 days (ripe)
Raspberries, loosely covered		2 days
Rhubarb		3 days
Strawberries, loosely covered		2 days
Tangerines, loosely covered		1 week



How To Store Food Safely ©

FRESH PRODUCE – VEGETABLES

Dense raw vegetables such as potatoes and onions may be stored at cool room temperatures. Other vegetables should be refrigerated for quality and food safety, or most vegetables can be frozen, following directions in a reliable freezing guide. Storage life of most home frozen vegetables is 10 – 12 months.

VEGETABLES	SHELF	FRIDGE
Artichokes, sprinkle with water		1 week
Asparagus, wrap in damp towel or stand in water		4–5 days
Beans, green and wax, covered		5 days
Beets, tops cut to 1 in (2.5 cm), covered		3–4 weeks
Broccoli, covered		5–7 days
Brussels sprouts		5–7 days
Cabbage, green & red, covered		2 weeks
Carrots, mature, covered		3–4 weeks
Carrots, young, covered		2 weeks
Cauliflower, covered		7–10 days
Celery, covered		2 weeks
Corn on the cob, if husked, wrap in damp towel in plastic bag		2–7 days
Cucumbers		1 week
Eggplant		5 days
Garlic		
uncovered	few weeks – 4 months	
minced, packed in oil, unopened	1 year from production date	
minced, packed in oil, opened		1 year from production date
Ginger root		2 weeks
Greens		
Lettuce varieties		1 week
Others		2 – 4 days
Greens, bagged, precut		see “best before date”
Herbs, fresh		4–7 days
Mushrooms, in paper bag		5 days
Onions		
Green, leeks		1 week
Storage. dry, yellow skin	3 weeks	
Sweet, uncovered	1 week	1 month
Parsnips, covered		4 weeks
Peas		1–4 days
Peppers		
Sweet		1 week
Hot, in paper bag		1–2 weeks
Potatoes		
New, in paper bag		1 week
Mature, in paper bag	1 month	
Sweet potatoes / yams, uncovered	2–3 weeks	
Pumpkins, uncovered	1 week	
Radishes		1 week
Rutabagas, uncovered	1 week	3 weeks

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FRESH PRODUCE – VEGETABLES Continued.../

VEGETABLES	SHELF	FRIDGE
Spinach		3–4 days
Sprouts		3–4 days
Squash		
Summer, (soft shell) zucchini		1 week
Winter (hard shell)	1 week	
Tomatoes	until ripe	2–3 days (ripe)
Turnips, covered		1 week



SHELF STABLE FOODS

If necessary, after opening transfer these foods to an air-tight bag or container. For freezing, package in a freezer-proof bag or wrap. Some foods must be refrigerated after opening so check the label. Do not buy open packages of food or cans of food that bulge at the ends, leak or are badly dented. Store shelf stable foods in a clean, dry, cool place

Food	UNOPENED IN PANTRY	OPENED IN PANTRY	OPENED IN FRIDGE
Baby food	see "best before date"	no	2–3 days
Baby formula, concentrated liquid	see "best before date"	no	1 day
Baby formula, powder	see "best before date"	1 month	
Baby formula, prepared or ready to serve	see "best before date"	no	48 hours
Baking ingredients			
Baking powder	12 months		
Baking soda	12 months		
Cornmeal	6–12 months		12 months
Cornstarch	18 months	18 months	
Extracts, vanilla, lemon	2–3 years	12 months	
Frosting, canned	10 months		1 week
Frosting, mix	12 months	3 months	
Mixes			
Cake, tea biscuit	12 months		
Pancake	6–9 months		
Yeast, dry	see "best before date"		

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SHELF STABLE FOODS Continued.../

Food	UNOPENED IN PANTRY	OPENED IN PANTRY	OPENED IN FRIDGE
Bread crumbs, dry	3 months		
Canned foods, low acid	2–5 years		3–4 days
Canned foods, high acid	12–18 months		5–7 days
Cereals			
Ready-to-eat	8 months	3 months	
Rolled oats	6–10 months	6–10 months	
Granola	6 months		
Wheat germ			1 yr after production date
Cheese, processed cheese spread	8 months		
Chocolate, baking squares, dark	2 years	2 years	
Chocolate, baking squares, white	13 months	13 months	
Chocolate chips	2 years	2 years	
Chocolate syrup	2 years		6 months
Cocoa	10–12 months		
Coffee			
Beans, non vacuum bag	1–3 weeks		3 months (freezer)
Ground	2–4 weeks	2 weeks	
Instant	12 months		
Coffee whitener	6 months		
Condiments			
Asian sauces	12 months		4–6 months
Barbecue sauce	12 months	1 month	4–6 months
Horseradish in jar	12 months	no	3–4 months
Ketchup	12 months	1 month	6 months
Mayonnaise, commercial	see “best before date”		6–8 weeks
Mustard	12 months		12 months
Olives, black & green	12–18 months		2 weeks
Pickles	12 months		1–2 months
Salsa	12 months		2 weeks
Worcestershire sauce		1 year	
Cookies, packaged	2 months		1 month
Crackers	6 months		
Cranberry sauce			3 weeks
Dried beans, peas, lentils	12 months	12 months	
Fish and shellfish	12 months		2 days
Fruit, dried	6 months	6 months	
Gelatin, all types	12 months		
Herbs, dried	6–12 months		
Honey, pasteurized	2 years		
Jams & jellies	12 months		6 months
Juice boxes	4–6 months		8–12 days
Marshmallows, marshmallow crème	2–4 months		1 month

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SHELF STABLE FOODS Continued.../

Food	UNOPENED IN PANTRY	OPENED IN PANTRY	OPENED IN FRIDGE
Milk , buttermilk powder	6 months		1 month
Milk, condensed	9–12 months		4–5 days
Milk, evaporated	9–12 months		4–5 days
Milk, skim milk powder,	6–12 months		1 month
Milk, UHT	see “best before date”		7 days
Molasses	1–2 years	6 months	
Mushrooms, dried	6 months		3–6 months
Nuts			
In shell	4 months		
Out of shell		2 weeks	
Nutmeats, in vacuum can	12 months		
Nutmeats, other packaging	3 months	2 weeks	
Nuts, unsalted			9–12 months
Nuts, salted			6–8 months
Oils			
Butter–flavored hydrogenated	12 months	9 months	no
Canola	12–18 months	6–9 months	12 months
Cold press	no	no	6 months
Corn oil	12–18 months	6–9 months	10–12 months
Flaxseed oil, unopened	no	no	3 months
Flaxseed oil, opened	no	no	3 weeks
Grapeseed, refined	18–20 months	6–8 months	12 months
Olive oil, extra virgin	9–12 months	6–7 months	12 months
Peanut oil	12 months	6–7 months	12 months
Pumpkin oil	7 months	2–3 months	4–6 months
Safflower oil	12 months	9 months	18 months
Salad dressings, Commercial	see “best before date”		see “best before date” or 3 months
Sesame oil	12 months	8–9 months	16 months
Solid vegetable		10–12 months	
Shortenings	6 months	months	12 months
Soybean oil	12–18 months	6–9 months	12 months
Sunflower oil	9 months	3–6 months	6–8 months
Vegetable oil sprays	12–24 months	12 months	no
Walnut oil	7 months	3–4 months	6–8 months
Pasta	several years		
Peanut butter	6–9 months	2–3 months	
Pectin, Powdered	see “best before date”		
Pectin, Liquid	see “best before date”		1 month (covered)
Pie filling, pudding mix	18 months		
Popcorn	2 years		
Potato flakes	6–12 months		

How To Store Food Safely ©

SHELF STABLE FOODS Continued.../

Food	UNOPENED IN PANTRY	OPENED IN PANTRY	OPENED IN FRIDGE
Rice, white	several years		
Rice, brown	6 months		
Rice, flavored	6 months		
Sauces and gravy mixes	6–12 months		
Soup mixes	12 months		
Soy drink	see “best before date”		5–10 days
Spices, whole	3 years		
Spices, ground	1–2 years		
Sugar			
Brown	4 months		
Confectioners	18 months		
Granulated	2 years		
Artificial sweetener	2 years		
Syrups – corn, table	12 months	12 months	
Syrups – maple			12 months
Tahini	12–18 months	90–120 days	longer
Tea, Bags	12–18 months		
Tea, Loose	2 years		
Tomato & pasta sauce, cans, jars	12 months	no	5 days
Tomatoes, sun dried			12 months
Tomatoes, sun dried, in oil, opened			4 months
Vinegar	2 years	1 year	
Toaster pastries	2–3 months		
Yeast, dry	see “best before date”		



How To Store Food Safely ©

HOME COOKED FOODS

Refrigerate cooked foods as soon as possible after a meal. Once the foods have cooled, cover with lids or plastic food wrap. Then use them quickly or freeze as they have a short shelf life. If you have any doubts about the safety of a leftover food, throw it out.

FOOD	IN FRIDGE	FROZEN
Antipasto	10 days	12 months
Baby formula, correctly prepared	48 hours	no
Cheese ball	1 week	
Cheesecake, baked		6 months
Chicken & turkey gravy	1–2 days	2–3 months
Cooked fish	1–2 days	4–6 months
Cooked meat	3–4 days	2–3 months
Cooked chicken & turkey	3–4 days	3 months
Cooked rice & noodles	3 days	3 months
Cranberry sauce	3 weeks	1 year
Eggnog	1 day	no
Eggs, hard cooked	1 week	no
Eggs, leftover whites	1–2 days	1 year
Eggs, leftover yolks and whites	2–3 days, covered	4 months
Herb and garlic flavored oils, fresh	2–3 days	no
Homemade herb & garlic flavored oils, heat processed correctly	1 month	no
Meat casseroles, pies	2–3 days	3 months
Potatoes, cooked, mashed	3 days	
Pies, unbaked, fruit	no	6 months
Soups, meat or vegetable	3–4 days	2–3 months
Sandwiches	overnight	6 weeks
Turkey stuffing	3–4 days	3 months



All data taken from *How to Store Food Safely*, researched and produced by
 Food Safety Information Society, Calgary AB Canada, 2005,
www.foodsafetyline.org, 1-800-892-8333

Appendix H: Food Safety Tips

Safe Food Sampling Tips

Food producers and processors use many methods to promote their products. One such method is to allow potential customers to taste prepared sample portions of their products.

The following are some guidelines for the demonstrator that will help ensure the potential customers receive safe product samples.

Food Demonstrator

- Wash hands prior to handling food
- If using disposable gloves, replace regularly or when contaminated
- Wear appropriate clothing, e.g., clean aprons
- Use hair control, e.g., hair nets, hats, etc.

Food Handling Procedures

- Pre-cut raw perishable samples at your facility and transport under proper temperature control, e.g., refrigerated unit or portable coolers with ice. Do not prepare samples at the sampling tables
- Cut pre-made or pre-cooked frozen foods to sampling size after cooking and always cook to proper internal temperatures
- Keep perishable samples below 4°C or above 60°C and serve immediately
- Cook ground meat products to an internal temperature of 70°C and cook fresh poultry products to an internal temperature of 85°C
- Use a calibrated thermometer to monitor food temperatures
- Use separate utensils for raw and cooked foods
- Prevent customers from handling the samples by handing samples to them, or by using toothpicks or single-use containers
- Replace samples if they are displayed for more than one hour
- Discard leftover or contaminated samples

Cleaning and Sanitizing

- Wash and sanitize all equipment including cutting boards, utensils, cooking equipment and counter surfaces before and after use
- Use a sanitizing solution such as bleach:

Use a chlorine solution of not less than 100 ppm. If using household bleach, the following dilutions apply:

- 1 tablespoon or ½ ounce of bleach per gallon of water
- or ½ teaspoon or 2 millilitre of bleach per litre of water

Prepare diluted bleach fresh daily.

Store bleach solution in a spray bottle that is labelled accordingly.

(Safe Food Sampling Tips is based on information provided by the Capital Health Authority)

Appendix I: Common Foodborne Pathogens

Organism & Illness caused	Common Sources of Illness & Associated Foods	Onset of Illness	Duration of Illness	Characteristics of Illness	Prevention
Bacteria: <i>Campylobacter jejuni</i> Campylobacteriosis	Undercooked meat, chicken, and raw milk.	2-5 days	5-10 days with relapses being common	Fever, headache, muscle pain, diarrhea (sometimes bloody).	Cook animal foods thoroughly; prevent cross contamination; cool food quickly.
<i>Salmonella</i> spp. Salmonellosis	Raw meats, eggs, milk and dairy products, cream-filled desserts and toppings.	12-48 hours	2-6 days	Nausea, vomiting, abdominal cramps, diarrhea, fever, and headache.	Cook animal foods thoroughly; prevent cross contamination; cool food quickly; practice good personal hygiene.
<i>Staphylococcus aureus</i> Staphylococcal intoxication	Humans and animals are the primary reservoirs: skin, hair, nose. Foods that require considerable handling during preparation and that are kept at slightly elevated temperatures after preparation are frequently involved in staphylococcal food poisoning (e.g., potato salad).	1-6 hours	1-2 days	Nausea, vomiting, diarrhea, and abdominal cramps.	Practice good personal hygiene and sanitary habits; avoid touching food with bare hands; heat, cool and refrigerate foods properly.
<i>Escherichia coli</i> O157:H7 Hemorrhagic colitis	Improperly cooked ground beef, alfalfa sprouts, unpasteurized fruit juices, dry-cured salami and lettuce.	3-9 days	2-14 days	Severe abdominal pain, water diarrhea which becomes bloody, and vomiting may occur; dehydration; severe complications can result in death.	Cook meats thoroughly; prevent cross contamination; keep food below 4 °C.
<i>Listeria monocytogenes</i> Listeriosis	Soft cheeses, fermented sausages, and ready to eat foods that have been contaminated after processing (e.g., hot dogs, deli meats). May form a hardy biofilm in and on food processing equipment. May be found in drains and areas with water condensation.	1 day – 3 weeks	Up to 14 days or longer (recovery is slow)	Mild flu-like symptoms in healthy individuals; meningitis and blood poisoning can occur in the immune-compromised; abortion in pregnant women.	Good sanitation; use only pasteurized milk and dairy products; cook food thoroughly; keep foods below 4 °C; prevent cross contamination.

Organism & Illness caused	Common Sources of Illness & Associated Foods	Onset of Illness	Duration of Illness	Characteristics of Illness	Prevention
Bacteria: <i>Clostridium botulinum</i> Botulism	Improperly canned and improperly preserved foods.	12-72 hours	Depends on speed of diagnosis from several days to years	Dizziness; blurred vision; difficulty speaking, swallowing and breathing. Can be fatal without antitoxin.	Not using home-canned foods in commercial establishments; avoid using foods from severely dented or bulging cans.
Viruses: Calicivirus / The Norwalk – like virus family Gastroenteritis	Shellfish, salad ingredients & water storage containers (e.g., water storage on cruise ships). Human intestine. Carried by infected humans or contact with sewage sludge or polluted water.	1-2 days	1-3 days	Nausea, vomiting, diarrhea, and abdominal pain. Headache and low-grade fever may occur.	Good personal hygiene, good sanitation, isolation of infected workers.
Hepatitis Virus Hepatitis	Results from infected food handlers.	15-50 days	1-2 weeks to several months in severe cases	Fever, nausea, vomiting and abdominal discomfort, appetite loss, fatigue, followed by jaundice.	Good personal hygiene, avoid hand contact with food, cook all foods properly, especially seafood; separate infected persons from food preparation.
Natural Toxins: Mushroom toxins Mushroom poisoning	Common when toxic species are confused with edible species. Methods used to differentiate mushroom species are often unreliable and risky.	Less than 2 hours to 24 hours	2-48 hours	Nausea, vomiting, diarrhea, and abdominal pain, hallucinations, severe confusion, severe cases can lead to liver and kidney failure.	Only eat commercially grown varieties from reputable growers.

Appendix J: Websites

Appendix J. Websites

The following is a listing of the websites that have been referenced in this manual.

Alberta Agriculture Food and Rural Development (AAFRD)
www1.agric.gov.ab.ca

Agriculture Diversification Ventures
www.agric.gov.ab.ca/diversify

Agri-Food Systems Branch
[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs7806?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs7806?opendocument)

Approved Farmers' Market Guidelines
[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/apa2577](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa2577)

Food Safety Division
www.agric.gov.ab.ca/app21/seltopcat?cat1=Food+Safety

Meat Facility Standards
[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs7147](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs7147)

News & Newsletters Directory
www.agric.gov.ab.ca/app21/rtw/directories/news.jsp

On farm food safety (OFFS) programs
[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/afs4361?OpenDocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/afs4361?OpenDocument)

Publications/videos/CD-ROMs
[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/ipc4687](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/ipc4687)

Regulatory Services Branch
[www1.agric.gov.ab.ca/\\$department/newslett.nsf/all/ahf4921](http://www1.agric.gov.ab.ca/$department/newslett.nsf/all/ahf4921)

Alberta Environment
www3.gov.ab.ca/env

Pesticide Management
www3.gov.ab.ca/env/protenf/pesticide/index.html

Alberta Farm Fresh Producers Association (Farm Fresh)
www.albertafarmfresh.com

Alberta Farmers' Market Association (AFMA)
www.albertamarkets.com

Alberta Food Processors Association (AFPA)
www.afpa.com

Alberta Health and Wellness
www.health.gov.ab.ca

Alberta Food Retail and Foodservices Code
www.health.gov.ab.ca/professionals/foodcode/Food_Code.pdf

Health Information
www.health.gov.ab.ca/public/index.html

Regional Health Authorities
www.health.gov.ab.ca/regions

Aspen Regional Health Authority
www.aspenrha.ab.ca

Calgary Health Region
www.calgaryhealthregion.ca

Capital Health
www.capitalhealth.ca

Chinook Regional Health Authority
www.chr.ab.ca

David Thompson Regional Health Authority
www.dthr.ab.ca

East Central Health
www.eastcentralhealth.com

Northern Lights Health Region
www.nlhr.ca

Palliser Health Region
www.palliserhealth.ca

Peace Country Health
www.pchr.ca

Alberta Queen's Printer
www.qp.gov.ab.ca

Canadian Food Inspection Agency (CFIA)
www.inspection.gc.ca

Acts and Regulations
www.inspection.gc.ca/english/reg/rege.shtml

Food Safety
www.inspection.gc.ca/english/index/fssae.shtml

Guide to Food Labelling and Advertising
www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml

Meat Hygiene Manual of Procedures
www.inspection.gc.ca/english/anima/meavia/mmopmmhv/mane.shtml

Department of Justice Canada
laws.justice.gc.ca

Food and Consumer Products of Canada
www.fcPMC.com

Food Safety Information Society
www.foodsafetyline.org

GS1 Canada
www.gs1ca.org

Health Canada
www.hc-sc.gc.ca/index_e.html

Food & Nutrition
www.hc-sc.gc.ca/fn-an/index_e.html

Food Safety
www.hc-sc.gc.ca/fn-an/securit/index_e.html

Legislation & Guidelines
www.hc-sc.gc.ca/ahc-asc/legislation/index_e.html

Pest Management Regulatory Agency (PMRA)
www.pmra-arla.gc.ca

Site Index
www.hc-sc.gc.ca/home-accueil/search-recherche/a_e.html

Appendix K: Contacts

Key Contacts

FEDERAL

Canadian Food Inspection Agency

Alberta CFIA Recall Coordinator

Telephone: (403) 661-7505

Calgary

Fair Labelling Practices Program (food labelling and nutrition labelling)

Telephone: (403) 292-4650

Edmonton

Fair Labelling Practices Program (food labelling and nutrition labelling)

Telephone: (780) 495-3333

PROVINCIAL

(For toll free calling of all Alberta government numbers in Alberta, dial 310-0000 first)

Alberta Agriculture, Food and Rural Development

Ag-Info Centre

General inquiries

Toll Free: (866) 882-7677

Approved Farmers' Market Program

Penny Wilkes

Telephone: (780) 427-4514

Eileen Kotowich

Telephone: (780) 853-8223

Ag Tourism Initiative

Bill Reynolds

Telephone: (780) 427-4424

Sharon Stollery

Telephone: (780) 968-3514

Farm Direct Marketing

Karen Goad (food safety, marketing)
Telephone: (780) 538-5629

Bert Dening (meat)
Telephone: (780) 674-8247

Wes Johnson (Dine Alberta)
Telephone: (780) 415-2321

Food Safety

Agri-Food Systems Branch
Telephone: (780) 427-4054

Betty Vladicka
Telephone: (780) 427-0840

Regulatory Services Division

Telephone: (780) 422-7197

Airdrie
Telephone: (403) 948-8515

Edmonton
Telephone: (780) 427-7011

Grande Prairie
Telephone: (780) 538-6208

Lethbridge
Telephone: (780) 382-4261

Vermilion
Telephone: (780) 853-8113

Regional Health Authorities

Aspen Regional Health Authority

Westlock office
Telephone: (780) 349-3316

Calgary Health Region

Calgary office
Telephone: (403) 943-8060

Capital Health

Edmonton office
Telephone: (780) 413-7927

Chinook Regional Health Authority

Lethbridge office
Telephone: (403) 382-6666

David Thompson Regional Health Authority

Red Deer office
Telephone: (403) 341-2100

East Central Health

Camrose office
Telephone: (780) 679-2980

Northern Lights Health Region

Fort McMurray office
Telephone: (780) 791-6078

Palliser Health Region

Medicine Hat office
Telephone: (403) 502-8200

Peace Country Health

Grande Prairie office
Telephone: (780) 513-7500

INDUSTRY

Alberta Milk
Toll-free: (877) 361-1231
Telephone: (780) 453-5942

Appendix L: Publications

Alberta Agriculture Food and Rural Development Publications

Alberta Agriculture, Food and Rural Development free publications are available on line or from the Alberta Agriculture Publications Office in Edmonton by calling toll free (800)292-5697 or (780)427-0391. Priced publications and videos are only available from the Publications office.

Agri-Tourism

Country Vacation Profit\$. . . profit planning tools in a start-up country vacation enterprise

Agdex FS888-1

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex4091#agritourism](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex4091#agritourism)

Country Vacation Enterprise

Ag Venture profile. Agdex FS888-2.

Rural Festivals and Special Events

Ag Venture profile. Agdex FS888-3

Providing Farm Tours

Ag Strategies. Agdex FS888-4

Managing Risk for Farm Direct and Ag Tourism Ventures

Ag Strategies. FS845-10

Farm Direct Marketing

Direct Marketing Meat series:

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex4091#market](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex4091#market)

Direct Marketing Meats...Selling Meat at AB Approved Farmers' Markets

Agdex FS400/845-1

Direct Marketing Meats...Selling Lambs at AB Approved Farmers' Markets

Agdex FS430/845-2

Direct Marketing Meats...Selling Freezer Lambs

Agdex FS430/845-1

Direct Marketing Meats...Selling Freezer Chicken

Agdex FS450/845-1

Direct Marketing Meats...Selling Freezer Pork

Agdex FS440/845-1

Direct Marketing Meats...Selling Freezer Beef

Agdex FS420/845-1

Direct Marketing Profit\$ series:

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex4091#prodecon](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex4091#prodecon)

Direct Marketing Profit\$...Beef Enterprise

Agdex FS 420/821-3

Direct Marketing Profit\$...Cheese Production and Marketing Enterprise

Agdex FS 410/821-3

Direct Marketing Profit\$...Poultry Enterprise

Agdex FS 450/821-1

Pricing series:

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex4091#market](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex4091#market)

Essentials of Pricing

Ag Strategies. Agdex FS845-1

Methods to Price Your Products

Ag Strategies. Agdex FS845-2

Pricing Processed Food Products

Ag Strategies. Agdex FS845-3

Pricing Horticulture Products

Ag Strategies. Agdex FS845-4

Farm Direct Marketing for Rural Producers

Ag Strategies. Agdex FS845-6

Farm Direct Sales – Know the Regulations

Ag Strategies. Agdex FS845-7

Direct Marketing Meats Resource Guide

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/apa5132?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/apa5132?opendocument)

Farmers' Markets

www.sunnygirl.ca

Alberta Farmers' Markets - Directory and Information

Alberta Farmers' Market Vendor and Consumer Profile and Economic Impact Study

EGG-citing News

Food Safety

HACCP and its Applications

Video. Priced Publication

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex5171?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex5171?opendocument)

Meat Processing Facilities in Alberta: Regulations, Technology, Design

Priced Publication

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex4852?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex4852?opendocument)

Safe Food Practices For Small Processors

Video. Priced Publication

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex5172?opendocument](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex5172?opendocument)

Newsletters

www.agric.gov.ab.ca/app21/rtw/directories/news.jsp

Alberta Agripreneur

Animal Health Forum

Food News

Food Safety News

Canadian Farm Business Management Council Publication

Marketing On The Edge: A Marketing Guide for Progressive Farmers, 2002

ISBN 1-894148-68-1

Toll Free: (888) 232-3262.

Appendix M: Food Safety Checklists



Market Startup Food Safety Checklist for Vendors Alberta Approved Farmers' Markets

Food safety is important to you and your customers. Use this checklist to help keep food sold through Alberta Approved Farmers' Markets safe.

Market: _____ Date: _____

Premises		Yes	No	N/A
Booth area	Is your booth area clean?			
Vendor tables	Are tables in good repair?			
Garbage cans	Do you have a garbage container in your booth area?			
Pets	Are you aware of the market's pet/animal policy?			
Ice supply	Is your ice made from potable water?			
Storage and Transportation				
Temperature control	If you have freezers, are they capable of operating at -18°C or colder?			
	If you have refrigeration units, are they capable of operating between 0°C and 4°C ?			
	Do you have thermometers capable of displaying accurate temperatures?			
	Do you have the means to transport and store your perishable products with proper temperature control?			
	Do you have a plan in case your equipment fails and you can't maintain temperatures?			
Vendor vehicles	Do you have a plan in place to keep your market vehicles clean and free of contaminants?			
	If you are a meat vendor, do you have a Food Establishment Permit for your on-farm cooler or freezer and vehicles that are used to transport the meat products to market?			
Storage	Can you store and handle all your products under conditions to prevent damage, deterioration and contamination?			
	Is the storage area clean and free of contaminants?			
	Are containers stored to prevent contamination or damage?			
	Are you using food grade materials for product storage?			
Equipment				
Equipment maintenance	Is all your equipment sound and in good operating condition?			
Cleaning	Can equipment be easily cleaned?			

Market Startup/Vendor

Sanitation		Yes	No	N/A
Cleaning plan	Do you have a written cleaning and sanitizing plan for your tables, equipment and utensils (who, what, when and how)?			
Cleaning records	Do you have a system in place to record cleaning and sanitizing activities?			
Cleaning supplies	Do you store your cleaning supplies in an area separate from food products?			
Food Handling				
Packaging	Are you using new food grade containers for packaging?			
Temperature control	Do you have a system to record temperatures of hazardous foods?			
Food sampling	Do you have enough supplies for proper product sampling eg. single use portion cups, toothpicks, etc.?			
	Are you aware of proper handling methods for hot and cold samples?			
	Do you have a method to protect food samples from flies or other contaminants?			
Personnel				
Training	Have you taken an approved food safety training program, eg. <i>Food Safe</i> ?			
	Are your employees trained in safe food handling and sampling practices?			
Personal hygiene	Have you discussed with your staff, the importance of good personal hygiene, clean clothing, hair restraint and wearing minimal jewelry at the market?			
Hand washing	Are you and your staff aware of the correct hand washing technique?			
Staff health	Do you have a policy to prevent sick employees from working with food?			
First aid	Do you and your staff know the location of the market's first aid station?			
Product Recall				
Emergency procedures	If there is a concern/complaint about the safety of your product, do you know what to do and who to call? (presence of hazardous materials eg. glass, undeclared nuts, etc)			
Recall plan	Do you have a recall plan?			
Record keeping	Do you have a system to record products sold on each market day?			
Best Practices				
Legislation	Are you knowledgeable about all the federal and provincial legislation and regulations that impact your products?			
	Do you comply with all the federal and provincial legislation and regulations that impact your products?			
Labelling	Are your products properly labelled with name, contact information, ingredients, appropriate handling instructions eg. keep refrigerated, etc.?			
Regional health authority	Do you know the name and number of your public health officer?			
Policy	Are you aware of what products can be sold at an Alberta Approved Farmers' Market?			
Traceability	Do you have a plan for unsold products?			
	Do you have a system to identify each product by batch or lot number?			
	Do you have liability insurance?			

For further information or additional copies contact:

Farmers' Market Program Administrator www.sunnygirl.ca or phone (780) 427-4514.

For toll free calling in Alberta dial 310-0000 first.



Weekly
Food Safety Checklist for Vendors
Alberta Approved Farmers' Markets

Food safety is important to you and your customers. Use this checklist to help keep food sold through Alberta Approved Farmers' Markets safe.

Market: _____ **Date:** _____

Premises		Yes	No	N/A
Building	Did you clean the loading area after use?			
Booth Area	Is your booth area clean?			
	Is your garbage can covered and emptied as required?			
Tables	Did you clean and sanitize your tables before setting up?			
	Do you clean your table regularly throughout market day?			
Pet policy	Have you left your pets and animals at home?			
Storage and Transportation				
Temperature control	Is your market freezer at -18°C or colder before loading your food products?			
	Are your refrigeration units/coolers running between 0° and 4°C and working properly?			
	Do you calibrate your equipment thermometers as recommended?			
	Are you keeping accurate temperature records during transportation and marketing?			
Ice	Did you transport your ice to market in clean, sanitized containers?			
Dry storage	Is food stored off the floor or ground?			
Vendor vehicles	Were your market vehicles clean and free of contaminants prior to loading to come to the market?			
	Did you transport your perishable products with proper temperature control?			
Containers	Are all products stored, packaged, displayed and transported in food grade containers?			
	Are all products transported and stored in clean containers (coolers, boxes, tubs, etc.)?			
Equipment				
Maintenance	Have you completed required equipment maintenance?			
Sanitation				
Cleaning	Did you follow your cleaning and sanitation plan?			
	Did you record your actions in your cleaning and sanitation log?			
Hand/equipment washing stations	Are you using hand washing stations appropriately?			

Weekly/Vendors

Food Handling		Yes	No	N/A
Packaging	Are products packaged to protect food from customer handling, and contamination?			
Food sampling	Do you use proper sampling methods?			
	Are food samples screened from flies, wrapped or otherwise protected?			
	Do you clean and sanitize your food sample preparation equipment frequently throughout the market day?			
	Did you bring enough supplies for proper product sampling for today's market eg. single use portion cups, toothpicks, etc.?			
	Is the waste container for your product sampling refuse emptied as required?			
Safe handling	Do you and your staff practice safe food handling techniques?			
	Are you advising your customers on the safe handling of your products?			
Temperature control	Are perishable foods kept above 60°C or below 4°C and exposed to the <i>Danger Zone</i> for less than a total of 2 hours during transportation to market and sale?			
	Are you using a probe thermometer to measure temperatures of stored and sampled hazardous food products throughout the market day?			
	Have you completed a temperature log for hazardous foods?			
Ice	Did you display your perishable food products on ice packs or bagged ice?			
Product display	Do you keep your ready-to-eat items separate from raw products to avoid cross contamination?			
	Do you display only the amount of food product that you will sell in two hours or less?			
	Do you rotate your products on a first displayed, first sold basis?			
Personnel				
Hand washing	Do you and your staff practice appropriate hand washing techniques including washing hands after smoking, eating, sneezing, nose blowing, handling money, taking a break, using the washroom, etc.?			
	Do you and your staff change your latex/vinyl gloves frequently?			
Staff health	Are you and your staff healthy on market day? No colds, cough, flu, etc.			
	Are cuts and open sores appropriately bandaged and gloved if necessary?			
Personal hygiene	Are you and your staff wearing clean clothing?			
	Are you and your staff wearing a minimum amount of jewelry and no nail polish?			
	Is hair tied back or restrained in a cap or net?			
	Do you and your staff thoroughly wash hands frequently throughout the market day?			
	Do you and your staff refrain from chewing gum, eating or smoking at your table?			
Best Practices				
Labeling	Are all products labelled properly including batch or lot number?			
Traceability	Did you record the products, batch numbers and quantities sold today?			
	Did you follow your plan for unsold product?			
Inspection	Has your meat/poultry come from an inspected facility? (slaughter, processing, wrapping)			

For further information or additional copies contact:

Farmers' Market Program Administrator www.sunnygirl.ca or phone (780) 427-4514.
For toll free calling in Alberta dial 310-0000 first.



Market Startup

Food Safety Checklist for Market Managers Alberta Approved Farmers' Markets

Food safety is important to your market, your vendors and your customers. As a manager, you have a responsibility to ensure that the products sold at your market are safe. Use this checklist to help you and your vendors keep food sold through Alberta Approved Farmers' Markets safe.

Market: _____ Date: _____

Premises		Yes	No	N/A
Parking lot	Is the lot paved or smooth surface? Is it free from dust, puddles, potholes and other hazards?			
	Is the lot clean and well maintained?			
	Are there an adequate number of garbage cans?			
	Has regular garbage disposal been arranged for the market?			
Site	Is the site free of pests? Have arrangements been made for the grass to be cut regularly to deter rodents?			
	Is the site clean and well maintained?			
	Is dust control in place for outdoor markets?			
Building	Can the market building (floor, walls, ceiling, etc.) be effectively cleaned?			
	Are the facilities in good repair?			
Garbage cans	Is there an adequate number of garbage cans with lids and plastic liners?			
	Are they well located throughout the market?			
Vendor tables	Can tables be easily and effectively cleaned?			
	Are tables in good repair?			
Market layout	Does the arrangement of tables prevent cross-contamination?			
Washrooms and portables	Are the washrooms/portables conveniently located?			
	Are the washrooms/portables clean?			
	Do the portables have sinks?			
	Is the area equipped with hot potable water, soap, single use towels or functional hand dryers and garbage cans?			
	Are hand washing signs posted in appropriate areas?			
Water	Is the water supply of potable quality?			
	Is there sufficient water quantity and pressure to meet market needs?			
	Is waste water collection and handling equipment available?			
Hand/equipment washing stations	Is there an adequate number of hand washing stations available for vendors?			
	Are there facilities for vendors to clean and sanitize their food sampling equipment?			
	Is the area equipped with hot water, soap, bleach, single use towels and garbage cans?			
Pet policy	Are signs posted telling vendors and customers that pets and other animals are not allowed in the market?			

Market Startup/Market Managers

Pest Control		Yes	No	N/A
Pest control	Are window screens, fan screens and door thresholds in place to prevent mice and flies from getting in?			
	Do windows and doors close securely?			
	Are storage, food preparation and sales areas free of rodents and flies?			
	Are rodent traps (not baits) being used in food areas?			
	Are fly traps placed over aisles rather than tables?			
	Are traps clean and ready for market opening?			
	Are pest control products stored properly away from food areas?			
Storage				
Temperature control	Are freezers capable of operating at -18°C or colder?			
	Are refrigeration units capable of operating between 0° and 4°C?			
	Are equipment thermometers visible and accurate?			
Storage	Are cleaning supplies stored safely away from food areas?			
	Is there adequate storage for tables, sanitizers, cleaning equipment, etc.?			
Personnel				
First aid	Is there a first aid station on site?			
	Is the first aid station well stocked?			
	Have you informed vendors of the first aid station and its location?			
Training	Have you taken an approved food safety training program eg. <i>Food Safe?</i>			
	Have you discussed safe food handling and personal hygiene practices with market staff and vendors?			
Sanitation				
Cleaning program	Is there a written cleaning and sanitizing plan in place for the market, including washrooms, that clearly defines who is responsible, what needs to be done, when it should be done and how?			
Cleaning records	Do you have a system in place to record cleaning and sanitizing activities?			
Best Practices				
Federal/provincial legislation	Are you familiar with all federal and provincial acts and regulations appropriate for your market?			
	Are you aware of your responsibilities for ensuring vendors follow regulations?			
Regional health authority	Do you have a good working relationship with the local public health officer?			
	Does the sponsoring body have a valid Food Permit for your market?			
	Do you have a copy of the Food and Food Establishments Regulation of the <i>Alberta Public Health Act</i> ?			
Concession	Does each concession at your market have a valid health permit?			
Insurance	Does the market have liability insurance?			
Traceability	If a food safety problem or violation arises, do you know what to do and who to call?			
	Do you have a contact list for all your vendors including name, address, phone number and products sold each week?			

For further information or additional copies contact:

Farmers' Market Program Administrator www.sunnygirl.ca or phone (780) 427-4514.
For toll free calling in Alberta dial 310-0000 first.



Weekly
Food Safety Checklist for Market Managers
Alberta Approved Farmers' Markets

Food safety is important to your market, your vendors and your customers. As a manager, you have a responsibility to ensure that the products sold at your market are safe. Use this checklist to help you and your vendors keep food sold through Alberta Approved Farmers' Markets safe.

Market: _____ **Date:** _____

Premises		Yes	No	N/A
Parking lot	Is the parking lot clean and well maintained?			
Garbage cans	Are garbage cans located throughout market and parking areas?			
	Are the lids on the garbage cans?			
	Are garbage cans emptied, sanitized and plastic liners installed?			
Site/building	Is the site/building clean?			
	Is there any garbage/litter in sight?			
	Has the grass been cut to deter rodents?			
	Is dust control still effective in your outdoor market?			
Vendor tables	Have required table repairs been made?			
Water	Is there sufficient water quantity and pressure to meet market needs?			
	Has waste water been collected and properly disposed?			
Ice	Are vendors using ice packs made from potable water?			
Washrooms and portables	Are hand washing signs posted in appropriate areas?			
	Have portables been serviced this week?			
	Are the washrooms/portables fully stocked? (soap, single use towels or functional hand dryer, toilet paper, empty garbage cans)			
Hand/equipment washing stations	Are hand washing stations equipped with hot water, soap, single use towels, bleach and garbage can?			
	Is the area clean and well maintained?			
Pets	Are you enforcing the pet/animal policy at your market?			
Pest Control				
Pest control	Are window screens and fan screens in place?			
	Have the rodent traps been checked, cleaned and reset? Have fly strips been replaced?			
Storage and Transportation				
Temperature control	Are the refrigeration units operating between 0° and 4°C? Are they working properly?			
	Are the freezers operating at -18°C or colder? Are they working properly?			
	Do vendors bring their potentially hazardous products in refrigerated containers, on ice packs or frozen in coolers?			
Food storage	Are the vendors keeping their booth area clean?			
	Is product stored off the ground/floor?			
	Is the food storage area clean and free of contaminants?			
	Are vendors' personal belongings stored away from food products?			
Containers	Are vendors storing cleaning supplies in an area separate from food products?			
	Are vendors transporting and storing all products in clean containers (coolers, boxes, tubs, etc.)?			

Weekly/Market Managers

Storage and Transportation		Yes	No	N/A
Food grade containers	Are vendors storing, packaging, displaying and transporting products in food grade materials?			
Vendor vehicles	Are vehicles clean and free of contaminants?			
	Were pets transported in vehicles with the food products?			
	Do meat vendors have a Food Establishment Permit for vehicles used to transport their meat products to market?			
Food Handling				
Food temperature	Are perishable foods kept above 60°C or below 4°C and exposed to the <i>Danger Zone</i> for less than a total of 2 hours?			
Eggs	Are eggs kept at a temperature of 7°C or less?			
	Are uninspected eggs sold in clean containers and clearly marked “UNINSPECTED”?			
Ice	Are vendors displaying perishable food products on ice packs or bagged ice?			
Food sampling	Are vendors and their staff using proper food sampling methods?			
Personnel				
First aid	Is the first aid station well stocked?			
Personal health	Are vendors and market staff healthy on market day – no cold, cough, flu, etc?			
	Do vendors have any cuts or open sores on their hands? If so, are they covered with bandages?			
Personal hygiene	Are vendors and market staff wearing clean and appropriate clothing?			
	Are vendors wearing minimum amount of jewelry and no nail polish?			
	If vendors are wearing gloves, do they change them frequently?			
	Do vendors have their hair restrained in a cap or net?			
	Are vendors seen washing hands frequently at hand washing stations?			
	Do vendors refrain from eating, smoking or chewing gum at their tables?			
Sanitation				
Equipment cleaning	Are vendors cleaning and sanitizing tables, equipment and utensils frequently throughout the market day?			
Cleaning supplies	Is there an adequate supply of cleaning products and equipment?			
Tables	Are the tables cleaned prior to the market opening each week?			
Washrooms	Have washrooms been cleaned and stocked as per cleaning schedule for today’s market?			
Market cleaning	Has market been cleaned as per cleaning and sanitizing schedule for today’s market?			
Records	Have records been completed for market cleaning activities?			
	Have records been completed for washroom cleaning?			
Best Practices				
Labelling	Have vendors labelled their products properly?			
	Is product properly and appropriately packaged?			
Traceability	Do you have a record of all vendors at today’s market – name, address, phone number and products?			
Inspected facilities	Do all meat/poultry/dairy products come from inspected facilities?			
Federal/provincial legislation	Did you observe any violations of applicable regulations?			
	Have you acted on violations noticed?			

For further information or additional copies contact:

Farmers’ Market Program Administrator www.sunnygirl.ca or phone (780) 427-4514.

For toll free calling in Alberta dial 310-0000 first.

Appendix N: Approved Program Guidelines

Alberta Agriculture, Food and Rural Development Alberta Approved Farmers' Market Program Guidelines

Vision:

The Alberta Approved Farmers' Market Program provides leadership and guidance so that entrepreneurs who make, bake or grow their product have community-based direct market access. Consumers appreciate both the quality and diversity of locally produced market goods that meet program standards and the vendor contact that direct marketing provides.

Mission:

The Alberta Approved Farmers' Market Program creates an operational framework that facilitates direct market access for community-based entrepreneurs who make, bake or grow the product they sell. Basic operating guidelines, provincial program-awareness initiatives and the education of vendors, managers and consumers are the key components of this community-based program.

Program Goals:

1. To provide the opportunity for producers to sell safe, high quality products directly to consumers. These products will be produced in accordance with provincial and federal regulations.
2. To provide direct market access of safe and high quality Alberta agricultural and agri-food products to the consumer.
3. To maximize or increase vendor profitability.
4. To enhance community development and build community rapport for Albertans within Alberta's rural and urban settings.
5. To provide an opportunity for vendors and managers to acquire the knowledge and to develop the skills needed to maximize the potential success of an Approved Market.

Program Definitions:

AAFRD: refers to Alberta Agriculture, Food and Rural Development

Administrator: refers to the administrator(s) of Alberta's Approved Farmers' Market Program

Approved Market: means an Alberta Approved Farmers' Market

Guidelines: means these guidelines, as issued, changed or updated from time to time by AAFRD, under which the Approved Markets operate

Program: means the Alberta Approved Farmers' Market program

Sponsor: means the sponsor that sponsors the application and the operations of a market as an Approved Market

Reduced-Profit: means, with reference to entities incorporated specifically for the purpose of operating an Approved Market, a corporation which either does not charge vendors more fees, rents, levies or other payments than are necessary to pay the corporation's expenses, or a corporation which returns any excess fees, rents, levies and payments to full time vendors (less reasonable reserves for present and future operating and capital requirements), each year based on a formula which reimburses each full-time vendor for their portion of the excess based on the amount they have each paid.

Program Requirements:

Who may start an Approved Farmers' Market?

In Alberta, an Approved Market must be:

sponsored by:

1. a not-for-profit community group or organization
2. a local Chamber of Commerce
3. a municipality
4. an agricultural society - *Agricultural Societies Act* (Alberta)

OR

incorporated specifically for the purpose of operating an Approved Market under the legislation of the:

1. *Societies Act* (Alberta)
2. *Cooperatives Act* (Alberta) as a new generation cooperative

A new generation cooperative must operate on a reduced-profit basis.

An Approved Market must operate under the direction of an advisory committee (if sponsored by a community group, Chamber of Commerce, municipality or agricultural society) or a board of directors (if specifically incorporated) who understand and support the goals of the Program. Membership on the advisory committee or the board of directors shall be defined within the rules of sponsored farmers' market or applicable corporate documents.

Each Approved Market must elect, appoint or hire a general manager for the market. When possible, the manager should not be a vendor at the market that he/she manages.

Who may sell at an Approved Farmers' Market?

Farmers' Markets were established by AAFRD to provide market access for the agriculture and agri-food industry in Alberta. In accepting vendors, priority will be given to the following:

1. Alberta residents
2. agricultural producers
3. individuals who 'make, bake or grow' their products

Products made, grown or baked in Alberta will be given first consideration.

What may be sold at an Approved Farmers' Market?

Each Approved Market must have a minimum of 10 vendors at all times who sell Alberta products which they, an immediate family member or staff have grown, produced, handcrafted, processed or baked.

All vendors at an Approved Market must be classed according to the 80/20 rule. Eighty percent (80%) of the vendors must sell **Alberta products** which they, an immediate family member or staff, have grown, produced, handcrafted, processed or baked. Cooperative farming enterprises are included in this eighty percent.

The remaining 20% of the vendors (the 'others') must:

1. sell products that will complement the market mix, and
2. represent interests that will enhance the community spirit of the market

In defining 'the others', each Approved Market must remember the following:

1. Out-of -province vendors are part of the 20% (others).
2. Sales of **out-of-province products** are not allowed if they are in direct competition with locally grown product. Out-of-province vendors must meet all provincial, interprovincial and federal regulations as well as complementing the existing vendor mix at the market.
3. Sales by agricultural, commodity or agri-food associations are allowed provided that their products complement the existing vendor mix and they meet the requirements of who may sell at an Approved Market.
4. Sale of **products by distributors, franchises or existing store-front owners, or the resale of any products** are discouraged.

NOTE: The sale of any used goods or flea market products is prohibited at Approved Farmers' Markets.

When must an Approved Farmers' Market operate?

An Approved Market may operate on any day of the week with prior permission of the Administrator.

An Approved Market must operate for a minimum number of consecutive hours as set in its market rules and for no less than 10 calendar days per year.

How does an Approved Farmers' Market operate?

Using these guidelines as a framework, an Approved Market must develop rules by which it will operate. Market rules must not violate any portion of these guidelines. A copy of market rules must be filed with the Administrator annually, and provided to all vendors of the market prior to each market year or before vendors start to sell at the market, whichever applies first.

An Approved Market must have at least one vendor meeting per year. A written notice inviting all regular vendors, as defined in the bylaws (if incorporated) or in the approved market rules (if sponsored) to attend must be provided at least two weeks prior to the meeting.

An Approved Market must adhere to all local, provincial and federal laws, regulations and guidelines.

Program Approval Criteria:

Sponsors, community groups or organizations wishing to establish an Approved Market must demonstrate:

1. they are committed to the goals of the Program
2. they are willing to operate according to the Guidelines
3. they have the support of the community to operate an Approved Market
4. they are committed to supporting the activities of the market as required
5. they are committed to seeing that the market adheres to the requirements to retain its Approved Market status
6. they understand the legal responsibility they assume to review or have professionally reviewed or audited the financial affairs of the Approved Market
7. they have secured a current food establishment permit from the local regional health authority
8. they have a minimum of 10 committed vendors who 'make, bake or grow' their own products
9. they have established reasonable market rules
10. the trading area is sufficient to support a viable market without competing directly with an existing market
11. they understand the legal responsibility they assume in being associated with the Approved Market

Individuals agreeing to be a market manager must demonstrate:

1. they are committed to the goals of the Program
2. a willingness to undergo the training and learning this position requires
3. they understand the role of the manager, the remuneration and benefits this position offers, to whom to direct their market concerns and to whom they are accountable

Vendors agreeing to have their names listed as part of an application seeking approval to become an Approved Market must show:

1. they are committed to the goals of the Program
2. they agree to support the development of the market as an Approved Market
3. they understand the market's operating rules

Program Administration:

What is the role of the sponsor?

Sponsors must:

1. oversee the operation of the Approved Market
2. help establish the rules of the Approved Market
3. make suggestions on vendor selection process
4. assist in the selection and performance review of the market manager
5. support yearly educational opportunities for the market manager
6. advise on the remuneration of the market manager
7. encourage vendor participation on the market executive and discourage any one vendor from assuming several key positions at the same time
8. provide leadership to the Approved Market to encourage its growth, resolve local issues and problems and to establish good community and consumer relations

Given the above, the Sponsor must ensure:

1. the Approved Market operates according to the Guidelines
2. the administration of the Approved Market is suitably structured to allow vendors to have meaningful input into the formulation of the Approved Market's operating rules
3. the Approved Market has within its structure an established process by which conflicts can be addressed
4. accurate vendor lists are maintained

5. bank accounts set up for the Approved Market have a minimum of two signatures (persons not related) for authorizing any transaction
6. accurate financial records are kept and the required documents are submitted to the Administrator annually
7. any reports or filings required to maintain corporate status in good standing are prepared and filed in a timely manner and according to the requirements of the respective *Acts*
8. the Approved Market adheres to provincial food regulations as established under the umbrella of the *Public Health Act*, and any changes to this Act as may be deemed necessary, through a cooperative effort of Alberta Health and Wellness and AAFRD
9. the Approved Market and its vendors are either insured or indemnified against liability. From time to time, AAFRD will request evidence of insurance or indemnity coverage

AAFRD will not be liable, in any manner whatsoever, for an Approved Market's activities.

Each Sponsor or specifically incorporated market must, by January 31 of each year, or at such a time as prescribed by the Administrator, ensure that the following be submitted to the Administrator:

1. a brief report outlining the activities of the Approved Market
2. a completed questionnaire based on the Guidelines
3. a list of vendors, with their telephone numbers, addresses and products offered for sale
4. a balance sheet and statement of income, retained earnings and expenditures for the market's last fiscal year prepared in accordance with generally accepted accounting principles, consistently applied

In addition, Approved Markets whose gross income, or whose net asset value, during the last fiscal year exceeds:

1. \$10,000.00 shall also include a statement of changes in financial position and have the financial statements reviewed by two independent parties or an independent accountant on a review engagement basis.
2. \$25,000.00 shall also include a statement of changes in financial position and have the financial statements audited by an independent accountant qualified to conduct audits in Alberta.

Notwithstanding the above requirements, AAFRD reserves the right to require that an Approved Market submit audited financial statements, without delay, upon request.

AAFRD also reserves the right to require that additional reporting on specified forms (to be provided), be completed and returned as directed, to maintain the integrity of the Program.

AAFRD reserves the right to cancel or refuse to renew the accreditation of any Approved Market that fails to comply with the above reporting requirements.

Approval of farmers' markets under the Guidelines is at the sole discretion of the Minister of Alberta Agriculture, Food and Rural Development or the Minister's designate. This approval can be withdrawn at any time if a given market is viewed as not supporting the Program goals, or does not adhere to the Program requirements, approval criteria or these Guidelines.

Program Approval Process:

Markets wishing to obtain approval under the Program must do the following:

1. Complete an AAFRD Approved Farmers' Market application form and demonstrate that the proposed market will meet the Guidelines as defined.
2. Must have made application for such incorporation and provide copies of the documents submitted for registration, *before* an application will be considered if the market is planning to incorporate.
3. Provide a copy of the rules established for the operation of the market to all potential vendors of this market, and to the Administrator.
4. Contact the local regional health authority to ensure that a food establishment permit will be available should AAFRD approve the application.
5. Guarantee that the individual whose name is proposed as manager of this market is willing to meet the learning and training requirements of this position and maintain the documentation required to meet the guidelines on an annual basis.

Applications will be assessed by the Administrator and a decision will normally be made within two to four weeks to grant **Temporary Status** or deny an application based on Program ineligibility.

The applicant, the sponsor and the local public health inspector will be advised of the decision in writing by the Administrator.

New markets granted **Temporary Status** will be monitored in the first two years of operation and granted **Full Status** in the third season of operation, provided the market has met the Guidelines.

Markets must apply to the program and be granted temporary status before beginning operations. Food establishment permits under the *Public Health Act* are, by law, only issued by the local public health inspector to temporary or full status Alberta Approved Farmers' Markets.

Alberta Agriculture, Food and Rural Development must be notified of all and any changes in the location, management or sponsorship of an Approved Farmers' Market for the market to retain its approved status.

Alberta Approved Farmers' Market Benefits:

Full status and temporary status Approved Markets that have complied with all of the requirements of the Program may receive these benefits:

1. an Alberta approved farmers' market food establishment permit as recognized by the *Alberta Public Health Act*
2. use the official name: Alberta Approved Farmers' Market
3. use the provincially recognized and trademarked Sunny Girl symbol in their advertising and promotional campaigns
4. take advantage of the free publicity afforded in the provincial Alberta Approved Farmers' Market brochure, thousands of which are distributed annually
5. be listed on the AAFRD website
6. participate in educational programs organized for market vendors and managers
7. be a member of the Alberta Farmers' Market Association and benefit from the activities of this provincial organization, including group liability insurance policy
8. make arrangements with Alberta Infrastructure to use the official Alberta Approved Farmers' Market highway sign directing motorists to an existing approved farmers' market
9. have the opportunity to sit on provincial advisory committees, task teams and review boards to represent the views and needs of markets

The Alberta Approved Farmers' Market Administrator:

The Program is administered by designated staff in the Rural Development, Alberta Agriculture, Food and Rural Development.

Program enquiries may be directed to:

Approved Farmers' Market Program Administrator
J. G. O'Donoghue Building
Room 200, 7000 – 113 Street NW
Edmonton, Alberta T6H 5T6
Telephone: (780) 427-4514
Outside the Edmonton area: 310-0000, (780) 427-4514
Fax: (780) 422-7755
E-mail: penny.wilkes@gov.ab.ca

These Guidelines are effective as of June 21, 2005.

Appendix O: Technical Background Information

How To Calculate Parts Per Million (ppm)

Knowing how to calculate concentrations of solutions is very important. Apply this step-by-step guide to calculating parts per million (ppm), for instance preparing a bleach sanitizing solution.

Metric example

Chlorine bleach is usually a 5.25% solution of sodium hypochlorite. To express this as a decimal, divide percent by 100:

$$5.25/100 = 0.0525$$

To determine the concentration in ppm, multiply the decimal (0.0525) by one million (1,000,000):

$$0.0525 \times 1,000,000 = 52,500 \text{ ppm}$$

The 5.25% solution of sodium hypochlorite (bleach) is 52,500 ppm.

To calculate the ratio for a specific ppm, divide the desired level by the concentrated solution. To make a 200 ppm solution:

$$200 \text{ ppm} / 52,500 \text{ ppm} = 0.0038$$

0.0038 is a ratio of the desired ppm to the concentrated solution

To calculate how much concentrate is required to make a solution, multiply the ratio number by the number of milliliters (mL) of solution desired.

For example, if you want 500 mL of a bleach sanitizing solution, then:

$$0.0038 \times 500 \text{ mL} = 1.9 \text{ mL}$$

You would mix 1.9 mL from your bottle of bleach with 500 mL of water to get a 200 ppm solution of chlorine bleach.

Useful reference for a 200 ppm bleach solution using a 5.25% bleach:

1.9 mL of bleach in 500 mL of water

3.8 mL of bleach in 1 litre of water

4.5 mL of bleach in 1 US (128 oz.) gallon of water

1 oz. of bleach in 2 US gallons of water

US example

Using the same 5.25% (52,500 ppm) solution of sodium hypochlorite (bleach):

To calculate how much bleach would be needed for 128 oz. (1 US gallon) of sanitizing solution, multiply the ratio by the amount of solution desired.

$$0.0038 \times 128 \text{ oz.} = 0.49 \text{ oz. or } 1/2 \text{ oz.}$$

1/2 oz. of bleach into 128 oz. (US gallon) of water will be a 200 ppm solution of sodium hypochlorite (bleach).

Common Fluid Measure Equivalents:

US Values	Canadian (imperial) Values
1 gallon = 128 fl oz.	1 gallon = 160 fl oz.
1 gallon = 3.78 L (3.8 L)	1 gallon = 4.54 L (4.5 L)
1 pint = 16 fl oz.	1 pint = 20 fl oz.
1 fl oz. = 29.6 mL	1 fl oz. = 28.4 mL

Read the Label: Not all Bleach Solutions Are the Same

0.0038 can be used as the ratio of the desired ppm to the concentrated solution as long as the bleach is a 5.25% solution; not all bleach is 5.25% so if the label on your bleach indicates a different concentration, you will have to do the calculation yourself. Below is a sample calculation.

Sample Calculation:

The label on the bleach bottle indicates the bleach contains 5.0% sodium hypochlorite. You want to fill a 750 mL spray bottle with a 200 ppm solution of sodium hypochlorite (bleach).

Express as a decimal:

$$5.0\% / 100 = 0.05$$

Convert to parts per million (ppm):

$$0.05 \times 1,000,000 = 50,000$$

The 5.0% bleach solution is 50,000 ppm sodium hypochlorite.

To calculate the ratio for 200 ppm of this solution :

$$200 \text{ ppm} / 50,000 \text{ ppm} = 0.004$$

To calculate the amount of bleach required for a 750 mL solution of bleach:

$$750 \text{ mL} \times 0.004 = 3 \text{ mL}$$

You would need to mix 3 mL of beach mixed with 750 mL of water to obtain a 200 ppm solution of sodium hypochlorite (bleach).

Temperature Conversion

Temperature Conversion Chart

Celsius °C	Fahrenheit °F
-20	-4.0
-18	-0.4
-10	14.0
0	32.0
1	33.8
4	39.2
5	41.0
7	44.6
10	50.0
15	59.0
20	68.0

Celsius °C	Fahrenheit °F
30	86.0
35	95.0
37	98.6
45	113
60	140
70	158
71	159.8
74	165.2
77	170.6
80	176
90	194
100	212

A formula can be used to convert Fahrenheit temperatures to Celsius:

$$T_c = (5/9) \times (T_f - 32)$$

A similar formula can also be used to convert Celsius temperatures to Fahrenheit:

$$T_f = (9/5) \times T_c + 32$$

Note:

T_c = temperature in degrees Celsius

T_f = temperature in degrees Fahrenheit

