



FOOD SAFETY SUPPORT

Alberta Agriculture and Food has a team of food safety specialists available to assist you to assess and improve your food safety programs.

www.agriculture.alberta.ca/aha

Contact 780-427-4054
or toll free 310-0000.

Improving food safety programs is a good business decision as doing so can enhance food safety, quality and consumer confidence; reduce waste and recalls; and open doors to additional markets.

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- Name and address of the licensed facility where the meat product was produced or labeled, or another party for whom the meat product was produced, preceded by the words "prepared for";
- Lot numbers that identify the day, month and year the product was packaged.
- Durable life date (if product has a durable life of less than 90 days);
- Storage conditions if they differ from normal room temperature;
- List of ingredients for multi-ingredient products (listed in order of proportion – largest to smallest);
- Nutrition Fact Table, with the exception of pre-packaged meat and poultry products with no ingredients, such as single ingredient food. Pre-packaged ground meat and ground meat by-products are not exempt and should carry a Nutrition Fact Table; and
- Bilingual labelling if sold outside the local government area.

In-store Sold Pre-packaged Products

If your food products are manufactured and packaged on the premise and you are selling them within your retail establishment, the following labelling requirements apply to you:

- Common product name;
- Net quantity statement (in metric);
- Name and address of licensed facility; and
- Durable life (if product has a durable life of less than 90 days). Durable life information should include the 'packed on' date and a 'best before' date, and the in-store signage should outline storage condition and shelf life.

In this case, multi-ingredient meat products are exempt from the ingredient listing on the label, but must be available to the consumers if they request it.

Clerk Served Products

Clerk served foods are food that are packaged at the time of sale. As they are not considered to be pre-packaged foods they are exempt from having a label.

Custom Products

If the owner of an animal intends to further market the finish products, then the products are considered wholesale pre-packaged products and all labeling requirements mentioned above are applicable.

Farmers' Market Products

Products sold at farmer's markets are considered wholesale pre-packaged products and, therefore, labelling must meet the requirements of a wholesale-prepackaged food product.

Red Meat Carcass

For details on labeling red meat carcasses for shipment, please refer to the *Alberta Meat Inspection Act and Regulations*.

FOOD SAFETY SENTINEL

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IT'S ALL IN THE PACKAGE

Good Things Come in the Right Package

A good marketer will tell you "it's all in the package." While there is no doubt that packaging helps your product stand out in the grocery aisle, it also helps preserve the integrity of your product, protects it from microbial contamination and may even extend its shelf life. That makes choosing the right packaging an important part of your operation.

Packaging and Shelf Life

While customers will never compromise on taste, they also want freshness and acceptable shelf life. Shelf life refers to the time a product can be stored under specified conditions and remain in optimum condition suitable for consumption.

Shelf life is closely linked to packaging as the method of packaging and condition of packaging materials can directly influence the numbers and kinds of microorganisms that grow on food. Different kinds of spoilage bacteria grow on the product depending on the method of packaging. Microorganisms can cause illness and contribute to spoilage creating off odours, slime, colour and flavour changes.

Meat and meat products are considered perishable products. Other factors affecting the shelf life of a perishable product are:

- Microbial condition of the food when packed;
- Manufacturing process;
- Ingredients;
- Handling, hygiene and sanitation practices; and
- Storage conditions: low temperature and continuous temperature chain.

Packaging Materials

In Canada, *The Food and Drugs Act and Regulations* forbids the sale of food in packages that can be potentially harmful to the food product. This regulation puts the responsibility on the food manufacturer and distributor to ensure that any packaging material used meets the requirements and is safe for food products.

Processors must be very careful to select packaging materials that are approved for use with food. Since packaging comes in direct physical contact with food, it is possible for small amounts of chemicals from the packaging to seep into the food. For this reason, materials intended for use in food packaging must be formulated to meet government requirements. The manufacturer of a food packaging material must submit the material to CFIA for approval. The CFIA evaluates each chemical ingredient and the packaging material as a whole to ensure that there are no food safety concerns.

Once the packaging material is accepted, it is posted on the CFIA website as an accepted product and the manufacturer receives a letter of acceptance. Information on approved materials is posted on the CFIA website (<http://active.inspection.gc.ca/scripts/fssa/reference/reference>). You can also ask your supplier for a copy of the acceptance letter.

NUTRITION LABELING

Nutrition labels tell people about the health aspects of a product.

On December 12, 2002, changes to the Food and Drug regulations resulted in changes to nutritional labeling information that appears on food and beverage products sold in Canada. As of December 2007, all food products are required to comply with the new regulations.

The regulations require a standardized "Nutrition Facts" panel, which includes information on 14 core nutrients, serving size and per cent of the daily required amount of nutrient. Nutrient content claims and health related claims are optional, but, if stated, must follow the new guidelines.

In Canada, the requirements for nutritional information on labels vary by product. Contact the CFIA prior to designing a label to determine whether or not your product requires nutritional disclosure.



From a technical viewpoint, characteristics of a good, safe package include:

- Compatibility with the product, processing and storage conditions;
- Product protection from chemical, physical and biological sources of deterioration;
- Suitability for the intended final use of the product (e.g., microwavable); and
- Ability to withstand the stresses of distribution (e.g., will not degrade or break).

Paper, glass (jars), metal (aluminum cans), foils and plastic products can all be used in packaging food products in Canada. When choosing the right material for the job, consider what sort of protection is needed, the type of packaging material and the package construction.

You can start by taking a look at what your competition is doing and considering the pros and cons of their choice as well as other common packaging materials available. It's also a good idea to discuss your requirements with suppliers of packaging materials, packaging specialists and food scientists who can lend their experience and expertise.

Packaging Methods

Modern packaging technology has greatly helped to extend the refrigerated shelf life of meat products. Today, improved packaging and shipping methods allow meat products to be shipped long distances.

Wrapping on trays

- Used for retail meat and meat products display and, in some plants, for short distribution distances.
- Meat is placed on polystyrene trays and wrapped with PVC film.
- Lets air in, allowing beef to retain a cherry-red colour. However, further oxidation soon changes the red meat to dull brown resulting in loss of consumer appeal.
- Oxygen from air also accelerates rancidity and the growth of spoilage bacteria, therefore the shelf life of wrapped meat is relatively short.

Vacuum Packaging

- Meat products are placed into a bag, the air is removed and the pack is hermetically sealed. No other gases are added to replace the space created by the air removal.
- Disadvantage – vacuum packaging can compress (or compact) the product.
- Vacuum bags act as a barrier to prevent the meat's surface from coming in contact with air outside the package and the meat's moisture from seeping out.
- Vacuum packaging extends the refrigerated shelf life of meat products, however the vacuum-packaged refrigerated meat eventually spoils as the packaging does not prevent the growth of all bacteria.
- Because the amount of air inside the package is reduced, the growth of aerobic bacteria, which needs air to grow, is restricted. Different species of bacteria, called lactic acid bacteria, grow inside the vacuum packaging. As these types of bacteria grow slowly at chill temperature the shelf life of the product is longer.
- If the package is punctured or the seals come apart, air comes in contact with the meat and spoilage takes place quickly.

Modified Atmosphere Packaging (MAP)

- The atmosphere inside the packaging is modified so that its composition is other than air. Air is made up of 21% oxygen, 78% nitrogen and less than 0.1% carbon dioxide. Reducing the oxygen level and increasing levels of nitrogen and/or carbon dioxide greatly extend the shelf life of meat products.
- The choice and proportion of each gas depends upon the product being packaged. As oxygen allows spoilage bacteria to grow, it must be either excluded or reduced to very low levels. In the case of red meat, very small oxygen levels are needed to maintain the cherry red color of meat.
- Carbon dioxide is known to limit the bacterial growth. Too much carbon dioxide cannot be used in the package because if the product absorbs too much carbon dioxide the volume inside the package will be reduced, giving the look of a collapsed package. Nitrogen is used to prevent package collapse and acts as gas filler by replacing the oxygen.
- The MAP package should be of low permeability to gas, so the initial concentrations of the added gases remain the same. However, in MAP, the concentrations of the gases may change after sealing due to the use of oxygen and from the slightly permeable nature of the package.
- Modified atmosphere packaging is capable of doubling the refrigerated shelf life of fresh meat compared to vacuum packaging.
- As MAP cannot improve the quality of a poor quality product, it is essential that the food has the best quality prior to packaging, and that good hygiene practices and temperature control are maintained to extend the shelf life of the product.

Controlled Atmosphere Packaging (CAP)

- CAP is very similar to MAP as it involves packaging a product in a modified atmosphere package (MAP) followed by maintaining control of that atmosphere. The gas concentrations inside the CAP do not change during storage.
- The desired environment in a package is continually maintained by using agents to bind oxygen or a sachet containing compounds that give off a gas.
- However, as the packaging method is designed so that gas concentrations do not change, a gas-impermeable package must be used, and there must be some way of controlling the atmosphere inside of the package. As this can be very expensive, this process is not widely used.

Frozen meat can normally be stored for much longer than refrigerated meat depending on the packaging used, but keep in mind that the quality of the meat will deteriorate over time, as frozen meat is also prone to oxidization.

Labelling – Know the Basics

Whatever packaging method you choose to use, proper labelling is important to prevent costly recalls.

The CFIA is responsible for food safety and consumer protection, and labelling regulations fall under its mandate. For more information on food labelling, check out the *Guide to Food Labelling and Advertising* (www.inspection.gc.ca/english/fssa/labeti/guide/toce.shtml) and *Consumer Packaging and Labelling Act* (<http://laws.justice.gc.ca/en/C-38/>)

Here are the basic labelling requirements for food products sold in Canada:

Wholesale Pre-packaged Products

If your food products are manufactured and packaged on the premise and you are wholesaling or distributing these products, the following labeling requirements apply to you:

- Common product name;
- Net quantity statement (in metric);

