



Can-Trace at a Glance



Agriculture and
Agri-Food Canada

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Agroalimentaire Canada

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Can-Trace at a Glance

Preface:

"Can-Trace at a Glance" is intended for those who are looking for:

- A quick reference document on traceability and Can-Trace
- Information on traceability standards
- Information on what is involved in implementing a traceability system.

Outline Summary:

- Traceability: A Background
- Why is Traceability Important?
- Can-Trace: A Background
- Canadian Food Traceability Data Standard (CFTDS)
- Summary
- Key Principles
- Mandatory and Optional Data Elements
- Other Sources of Information

For more detail on the Canadian Food Traceability Data Standard, Version 2.0, visit www.can-trace.org





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1. Introduction:

Traceability: A Background

Traceability is the ability to trace the history, application or location of that which is under consideration. Traceability has two components: **tracking** and **tracing**.

- **Tracking:** is the capability to follow the path of a specified unit and/or lot of trade items downstream through the supply chain as it moves between trading partners.
- **Tracing:** is the capability to identify the origin of a particular unit located within the supply chain by reference to records held upstream in the supply chain.
- **Supply Chain:** is a set of approaches utilized to efficiently integrate suppliers and clients (comprised of stores, food service, retailers, wholesalers, warehouses, distributors, manufacturers and primary producers) so food and food products are produced and distributed in the correct quantities, to the correct locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.

The Three Basic Elements of Traceability:

- **Product, Party and Location Identification:** Fundamental to tracking and tracing a product for full chain traceability is that every food component harvested from farm or sea and through every stage of its transformation / packaging to a finished consumer product must be uniquely identified at each stage of transformation or possession – and that these identifiers be linked.
- **Recording of Information:** Effective traceability requires standardizing the information that needs to be recorded through each step of the food production and distribution chain.
- **Linking of Information:** To ensure the continuity of the flow of traceability information, each partner must pass on information about the identified lot or product group to the next partner in the production chain, or alternatively, to a central data base or registry where information can be retrieved when necessary.

Why is Traceability Important?

Increased awareness of food safety issues among consumers, along with a more educated and informed public, is driving the demand for more information about the food supply chain. Recent animal health and food-borne illness scares in all parts of the world are creating a demand for source verification, food safety and supply chain identification of food and food products. While most industries and governments have established processes and systems to ensure food quality and safety (e.g., HACCP), these systems are often applied independently at various points in the food continuum. Traceability can assist in making the necessary linkages between a specific product and the application of these food safety and quality assurance systems at various points along the food continuum.

From a public health perspective, improving the speed and accuracy of tracking and tracing food items can help limit the risk associated with a failure in the system. Rapid and effective traceability can also minimize the unnecessary expenditure of private and public resources and reduce consumer concerns. Furthermore, tracing food items may help public health services and industry operators in determining potential causes of a problem, thereby providing data to identify and minimize food borne public health hazards.





Business Benefits of Traceability:

- Meeting Regulatory Requirements: Compliance with traceability requirements is mandatory in order to sell product in a particular region or jurisdiction
- Addressing Customer & Market needs: Compliance with traceability requirements is mandatory in order to sell to a particular customer or market segment
- Risk Management: A traceability system can reduce both the potential for a product recall and the scope of a recall in the event of one, thus minimizing potential liability.
- Process Improvements – When integrated with other corporate data, traceability information can lead to improvements in supply chain logistics and business efficiency

Can-Trace: A Background

What is Can-Trace?

Can-Trace is an industry-led, national initiative to establish a voluntary food traceability data standard for use by all commodity groups across the entire supply chain. The standard is known as the Canadian Food Traceability Data Standard Version 2.0, or CFTDS v 2.0. The CFTDS identifies the minimum mandatory data elements required to establish traceability in a one up/one down model. Can-Trace has participation from over 25 national trade associations and government organizations. Participation continues to grow and evolve along with interest.

Participation:

- Is voluntary
- Includes all stakeholders in the food supply chain (primary producers, processors, distributors, retailers, intermediaries, government and consumers)

Where does Can-Trace fit in Canada?

In Canada, registries for some commodity-specific products, such as beef, already exist. These identification systems can work in conjunction with Can-Trace. Also in Canada, Quebec has legislated under the Animal Health Protection Act, the identification of bovines and ovines, kept or raised in Quebec, to ensure traceability of these animals. The AAFC has also generated a traceability document, the Canadian Traceability Handbook, which is intended to serve as a focal point for traceability in Canada, to enhance awareness, to build community and to define direction and activities for collaborative construction of national industry-led traceability systems.

Where does Can-Trace fit globally?

Globally, food traceability is fast becoming a priority, and the existence of Can-Trace and its initiatives keep us in step with the rest of the world. Canada is therefore not the only country to recognize the importance of food traceability. As an example, the U.S.A. has implemented food traceability through the US Bioterrorism Act, and through Country of Origin Labeling. GS1, the global standards and service organization, has just published a Global Traceability Standard which is aimed at all commodity groups, not just food. Can-Trace is fully consistent with this new global standard.

Who can use the Can-Trace data standard?

Anyone who is involved in the food supply chain will find the standard useful. Implementation can take place at an organization or sector-wide basis.

Why did Can-Trace undertake this initiative?

The existence of proprietary and commodity-specific traceability approaches – and the lack of a common approach across the entire supply chain -- adds unnecessary cost to all parties. By using a common set of data requirements as proposed by Can-Trace, supply chain participants can realize cost efficiencies that benefit an entire supply chain.

How can I evaluate the costs and benefits of a traceability system?

As part of its study of the Business Case for traceability, Can-Trace has produced a business case “Decision Support Template” which a company can utilize on its own or with the assistance of an outside consultant. Formatted as an excel spreadsheet, this decision support template enables:

- Data collection
- Cost-benefit analysis [the number crunching]
- Reporting
- Scenario analysis

This decision support template comes with instructions and fold-down menus and is available for use on the Can-Trace website: www.can-trace.org (click reports).





2. Canadian Food Traceability Data Standard (CFTDS)

Development of a National Traceability Standard

In July 2003, a number of industry associations came together as a result of the mounting regulatory and market pressures in Canada and internationally for food traceability. Their objective was to develop a program to identify the minimum industry requirements for a national all-product, whole-chain food traceability (tracking and tracing) standard based on the globally recognized GS1 (formerly EAN.UCC) system. (The GS1 System standardizes various supply chain solutions for more efficient business among trading partners.)

The name for this initiative is Can-Trace.

The pressures on Canadian exporters came from bio-terrorism legislation in the United States and traceability legislation in the European Community for animal health and food safety. In addition to the forces of regulation, there was a growing public concern about food safety and animal health as a result of a number of high profile media events in both North America and Europe. As a result of these and other factors, more companies and organizations began to develop traceability systems for their particular sector or supply chain requirements. However, these efforts were proprietary and do not cover the depth and breadth of the entire supply chain.

The objective of Can-Trace is to define and develop minimum information requirements for a national, whole-chain, all-product traceability standard. Known as the Canadian Food Traceability Data Standard, or CFTDS, this voluntary standard establishes the minimum data elements required to be collected, kept and shared between trading partners. In December 2004 version 1.0 of the Canadian Food Traceability Data Standard was published. Version 2.0 was published in the spring of 2006. The most recent edition contains enhancements and modifications based on stakeholder input submitted over the past year.

Purpose of the Canadian Food Traceability Data Standard

- To facilitate tracking product movement through the entire food supply chain.
- To facilitate tracing product back through the food supply chain to its origin.
- To provide a common approach for traceability across all commodities.
- To recommend common data elements for buyers and sellers of food products.

Scope

The CFTDS addresses information flowing from the primary producer end of the supply chain up to delivery to the back door of the retail or foodservice operation. The store shelf or end consumer is therefore beyond the scope of the CFTDS.

Key Features

Several features and principles of the CFTDS are worth noting.

- The standard is voluntary.
- The standard is "whole chain" in its applicability.
- The standard references information or data requirements, not technology or systems specifications.
- The data standard is based on global standards (GS1 and ISO).
- The standard is not meant to replace existing systems but to be used in conjunction with them.

Key Principles of the Traceability Process

The underlying concepts that are the backbone of the traceability process are participation and unique identifiers.

- **Participation:**

To be successful, all components of the food chain must participate in the traceability process.

- **Unique Identifiers:**

Unique Product Identifier: A number, code or unique descriptor that uniquely represents a commercial trade item.

- It is recommended to use established sector specific Identifier systems.
- For primary product: the product identifier uniquely distinguishes individual units of production (ie animal, bin, catch, flock).

Example: *CLIA animal ID, proprietary catch ID*

- For processed or finished goods: the product identifier represents a seller's retail trade item (or product); or non-retail trade item (such as the case or master carton).

Example: *GS1 Global Trade Item Number (GTIN)*

- Where distinct or individual production units must be tracked, it is recommended that a Lot (or Batch) number and the product identifier be used.

- **Unique Party and Location Identifier:** A number, code or unique descriptor that uniquely represents the party and any legal, functional or physical location within a business or organizational entity purchasing or selling the product.

Example: *GS1 Global Location Number (GLN), Receiver Identifier, Sender Identifier, Internal Customer Number, Internal Sender Code, Dun & Bradstreet Number.*

- **Unique Shipment Identifier:** A number, code or unique descriptor that distinguishes a unique shipment of product. May be linked to a lot number.

Example: *Bill of Lading Number, Invoice Number (unique), Purchase Order Number, Bill of Lading*

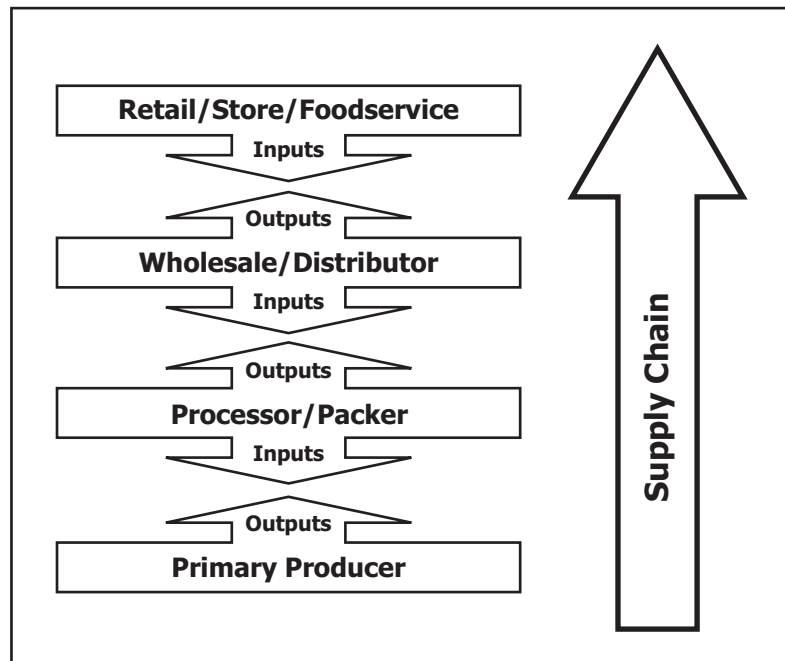
Key Data Principles

In order for traceability to be successful, there are certain pieces of information that must be obtained, maintained and made available at certain points by the participants in the food supply chain.

- The Can-Trace Canadian Food Traceability Data Standard, version 2.0 establishes the minimum data requirements for food supply chain
- Each participant in the food supply chain owns this data. Therefore,
 - Each participant is responsible for the on-going accuracy of the data and with whom they share this data.
 - Each participant has a responsibility in the food supply chain.

Can-Trace's Canadian Food Traceability Data Standard, version 2.0 supports a one-up/one-down model for traceability. Therefore, the standard stipulates that data must be "collected, kept and shared" by all participants in the food supply chain in order to achieve successful traceability.





- **"Collect"** refers to a participant in the food supply chain obtaining the relevant data from their trading partner in the food supply chain.
- **"Keep"** refers to a participant in the food supply chain keeping/storing and maintaining the relevant data.
- **"Share"** refers to a participant in the food supply providing the relevant data to their trading partner in the food supply chain.

Collect Data: The data that the participants in the supply chain are required to obtain from the relevant member of the supply chain.

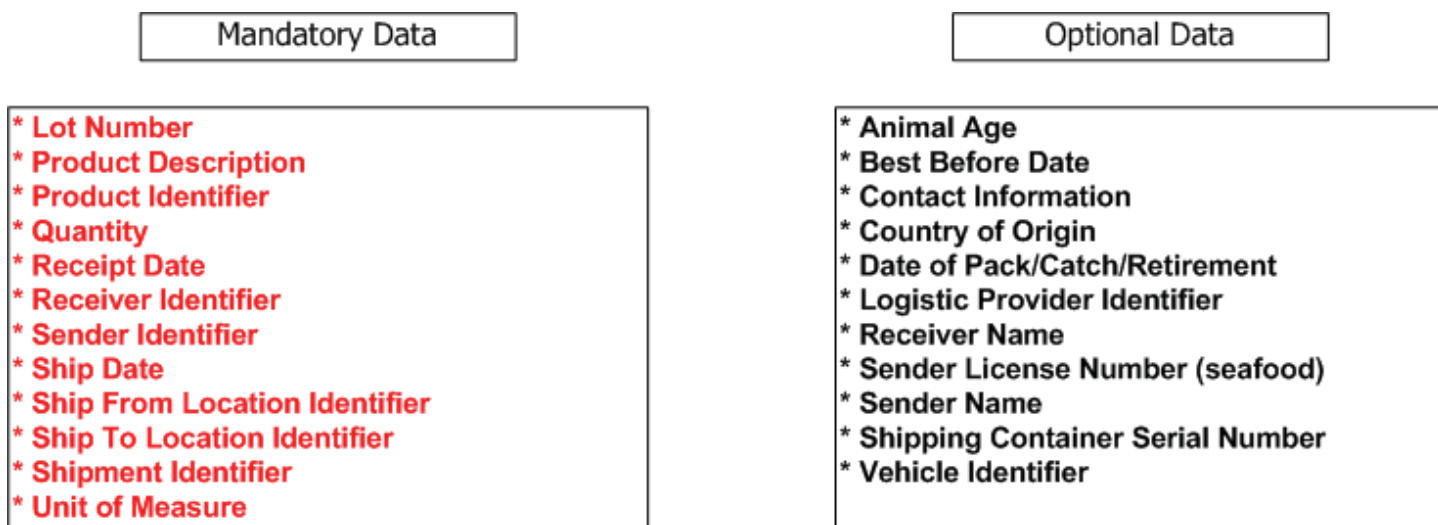
Keep Data: The information that each participant in the supply chain is required to record and maintain in their business records.

Share Data: The information that each participant in the supply chain is required to provide to the relevant member of the supply chain.

Data Elements

The Can-Trace Canadian Food Traceability Data Standard, version 2.0 outlines the minimum data elements (or 'pieces of information') required to establish traceability, which are referred to as "Mandatory" data elements. In addition, there are "Optional" data elements, which are not essential to establish traceability. However, Optional data elements provide additional valuable information to other participants within the food supply chain. Optional data elements are not essential for establishing traceability but may be useful in locating product or narrowing the scope of a search in the event of a recall.

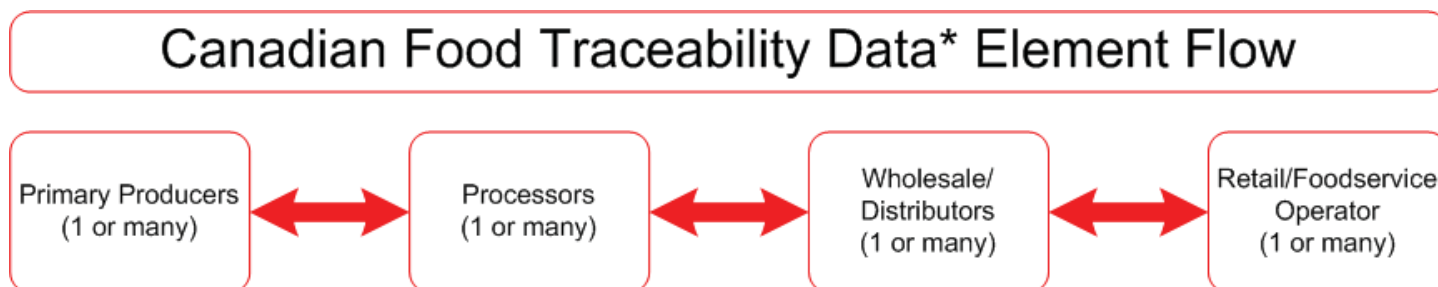
Below is a figure listing the generic data elements.



IMPORTANT NOTE:

- The above list of Mandatory data elements are GENERIC and therefore apply to all sectors and / or participants in the food chain.
- In addition to Mandatory Data Elements, the Can-Trace Canadian Food Traceability Data Standard, version 2.0 contains optional data elements – some generic and some sector-specific. (For example, "Animal age" is pertinent to livestock, particularly beef, and not relevant for other foods). The complete list of sector and participant data requirements can be found in The Canadian Food Traceability Data Standard, version 2.0 at www.can-trace.org
- Some of the above data elements only apply to certain participants in the supply chain. For example, Receiver Identifier is not applicable for the Store/Operator (Foodservice) Level.

3. Successful Traceability Through an Efficient Flow of Data Elements



*This diagram is representative of movement of Data NOT the movement of product through the supply chain

- The double-headed arrows represent the collection and sharing of data, depending the origin and direction of the arrow.
Example: *traveling from the Processor to the Primary Producer represents the Primary Producer collecting data and the Processor sharing data and vice versa.*
- The boxes that encircle each participant represent the keeping/maintaining of the data.

The responsibility of each participant within the supply chain only extends to the other participants with whom they have contact. The diagram shows that, ultimately, there exist connections across the entire food supply chain, enabling successful traceability.

Other Reports

- Other initiatives include:
- **Can-Trace Technology Guidelines:** A report on the available technologies for supporting documents and physical markings on cases and pallets, which support the communication of the data elements throughout the supply chain.
- **Can-Trace Integration Guidelines Report:** Recommendations for the integration of the mandatory Can-Trace data elements into existing regulatory, food safety and quality programs.
- **Can-Trace Multi-Ingredient Products Report:** A report of the applicability of the CFTDS to multi-ingredient products and on the challenges faced by organizations performing traceability in multi-ingredient products.
- **Can-Trace Decision Support System for Food Traceability:** A report on the business case for traceability and a decision support tool with drop-down formulas that enables an organization to perform its own cost-benefit analysis for traceability.
- **Can-Trace Implementation Guideline Template:** Work will begin shortly on this initiative which is designed to help sectors or organizations which want to implement the CFTDS to do so.

4. Other Sources of Information

- The Can-Trace Canadian Food Traceability Data Standard, version 2.0, it can be found at www.can-trace.org
- Other Standards: can also be found at www.can-trace.org (on the left hand menu click Learn More, then click Global Traceability)
- Talk to your Trading Partners: Pass along this document, and engage them on the subject!

US Food and Drug Administration (U.S. Bioterrorism Act)

The events of Sept. 11, 2001, reinforced the need to enhance the security of the United States. Congress responded by passing the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (the Bioterrorism Act), which President Bush signed into law June 12, 2002.

(<http://www.fda.gov/oc/bioterrorism/bioact.html>)

Country of Origin Labeling

On May 13, 2002, President Bush signed into law the Farm Security and Rural Investment Act of 2002, more commonly known as the 2002 Farm Bill. One of its many initiatives requires country of origin labeling for beef, lamb, pork, fish, perishable agricultural commodities and peanuts. As described in the legislation, program implementation is the responsibility of USDA's Agricultural Marketing Service.

(<http://www.ams.usda.gov/cool/>)

GS1 - The Traceability Challenge

As of January 2005, traceability was a legal obligation in the European food sector. Regulation (EC) No 178/2002 defined traceability as the ability to trace and follow a food, feed, food-producing animal or substance intended to be or expected to be incorporated into a food or feed in all stages of production, processing or distribution. In practice, this requires all food and feed business operators to have systems in place to identify from whom they have received a food or feed and to whom they sold a food or feed (one step back and one step forward).

Ministère de l'Agriculture, des pêcheries et de l'alimentation du Québec (Beef traceability 2005)

(<http://www.agr.gouv.qc.ca/>)

Japan Traceability Requirements

The article outlines Japan's upcoming traceability requirements for meat & poultry

(<http://www.meatnews.com/index.cfm?fuseaction=PArticle&artNum=7559>)

EU Food Regulation

(http://europa.eu.int/comm/food/food/foodlaw/traceability/index_en.htm)

GS1 Canada

GS1 Canada, formerly the Electronic Commerce Council of Canada (ECCC), is a not-for-profit, industry-led organization that promotes and maintains global standards for the identification of goods, locations and related e-commerce communication, such as bar code issuance and maintenance. As a GS1 Member Organization, GS1 Canada represents Canada in the continuing development of the global language of business.

(<http://www.gs1ca.org>)





Global Food Traceability Forum

A new medium for the international exchange of ideas and information for all those involved with traceability in the food supply chain. We regularly produce and send out the Global Food Traceability Forum Digest to all our members and correspondents
(<http://www.foodtraceabilityforum.com/>)

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