Traceability in Voluntary Audit-Based Programs

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1   Introduction

A traceability system allows the ability to follow the movement of a food through specified stages of production, processing and distribution, and this movement can relate to the origin of the materials, processing history or distribution of food. Traceability systems are useful tools to assist an organization operating within a food chain to achieve defined objectives in a management system.

One reason to have a traceability system is to inject accountability at each level of the marketing chain. An example would be for lumber, and the protection of "old-growth" forests, or diamonds, and reducing trade in "conflict" diamonds, or in this case, food, for food safety or food quality guarantees. It's also important to ask the question, "who is credible and whom do consumers trust to make different certifications (as part of a traceability system)?"

Animal traceability is used in international markets from a regulatory perspective, for the implementation of private standards, and for commercial programs. Currently, the USDA-AMS has verification programs for quality systems and these programs have an animal traceability component to meet trade requirements of international partners and customer expectations.

Research has shown that the following certifying bodies have credibility:

- Federal government
- State government inspection
- Private companies and brands, Food Retailers
- Producers
- Special interest groups
- Non-Profit Organizations

The USDA-AMS achieves traceability systems through "Quality Systems Verification Programs" (QSVP). The key components to these programs are:

- They are voluntary
- Funded through user fees
- Market focused – Claims are made on products, such as age, source, etc.
- Do not replace regulations

There are various types of traceability systems and can either be "prescriptive" in nature or based on a "performance standard".

(a) Prescriptive

- Non-hormone treated cattle
- Pork for the EU

(b) Performance Standard

- Export verification
- Process verified
- Quality system assessment

The choice to implement a traceability system is influenced by regulations, product characteristics and customer expectations and the complexity of the traceability system can vary depending on the features of the product and the objectives to be achieved.

The role of the USDA-AMS is to audit and verify a company's written processes and policies practices while remaining independent and acting as a third party. The authority to do these actions is based on the Agricultural Marketing Act of 1946.

Participants in these programs must implement a "Quality Management System" which documents company production practices for meeting marketing claims and specified product requirements.

1.1   QSVP examples - Process Verified Programs (PVP)

PVP's are animal traceback and verification program for raising and feeding production claims such as Grass-fed beef, Naturally raised livestock, Never Ever 3 and Age and Source programs. Under these types of programs, there would be system checkpoints, transfer of certain information and documents, animal identification, control of non-conforming animals and product and various critical control points.

1.2   Export Verification Program (EVP)

Another example might be an EVP for the Japanese market. These EVP's were developed in 2003 to ensure U.S. Beef could continue to be exported when the U.S. began to import live Canadian cattle for direct slaughter. The importing country is very specific about its product requirements in these programs. The EVP's involve mostly packers, fabricators and processors. There are currently over 100 programs for beef and 18 for sheep.

The implementation by an organization of a traceability system depends on the technical limits inherent to the organization and products (i.e., nature of the raw materials, size of the lots, collection and transport procedures, processing and packaging methods), and the cost benefits of applying such a system.

In conclusion, a traceability system on its own is insufficient to achieve food safety but rather is a technical tool to assist an organization to conform to its defined objectives and is applicable when necessary to determine the history, or location of a product or its relevant components.

Private standard needs will pull traceability through and legislative standards will push traceability through. Commerce based systems will be producer supported and long term incentivebased reporting systems will make traceability systems sustainable. If a traceability system is built for the right reasons, producers will participate over the long term. We must remain committed to produce the products consumers demand (domestic and international) and only through strict adherence to our trade obligations will market confidence be achieved. Traceability and verification will create value in multiple ways.

2   Principles and Objectives of Traceability for USDA-AMS QSVP
2.1   General

Traceability systems should be able to document the history of the product and/or locate a product in the food chain. Traceability systems contribute to the search for the cause of nonconformity and the ability to withdraw and/or

recall products if necessary. Traceability systems can improve appropriate use and reliability of information, effectiveness and productivity of the organization.

Traceability systems should be able to achieve the objectives from a technical and economic point of view.

Movement can relate to the origin of the materials, processing history or distribution of the food, and should address at least one step forward and one step backward for each organization in the chain. On agreement amongst the organizations concerned, it may apply to more than one part of the chain.

2.2 Principles

Traceability systems should be:

   (a) Verifiable,

   (b) applied consistently and equitably,

   (c) results oriented,

   (d) cost effective,

   (e) practical to apply,

   (f) compliant with any applicable regulations or policy, and

   (g) compliant with defined accuracy requirements.

2.3 Objectives

In developing a food chain traceability system, it is necessary to identify the specific objectives to be achieved. These objectives should take into consideration the principles identified. Examples of objectives are the following:

   (a) to support food safety and/or quality objectives;

   (b) to meet customer specification(s);

   (c) to determine the history or origin of the product;

   (d) to facilitate the withdrawal and/or recall of products;

   (e) to identify the responsible organizations in the feed and food chain;

   (f) to facilitate the verification of specific information about the product;

   (g) to communicate information to relevant stakeholders and consumers;

   (h) to fulfill any local, regional, national or international regulations or policies, as applicable;

   (i) to improve the effectiveness, productivity and profitability of the organization.

2.4 General Design Considerations

A traceability system is a tool that should be designed within the context of a broader management system. The choice of a traceability system should result from balancing the different requirements, the technical feasibility and the economic acceptability.

The traceability system should be verifiable.

Each element of a traceability system shall be considered and justified on a case-by-case basis, taking into account the objectives to be achieved.

In the design of a traceability system, the following shall be included:

  (a) objectives;

  (b) regulatory and policy requirements relevant to traceability;

  (c) products and/or ingredients;

  (d) position in the feed and food chain;

  (e) flow of materials;

  (f) information requirements;

  (g) procedures;

  (h) documentation;

  (i) food chain coordination.

2.5　　Choice of Objectives

The organization shall identify the objectives of its traceability system.

2.6　　Regulatory and Policy Requirements

The organization shall identify the relevant regulatory and policy requirements to be met by its traceability system.

2.7　　Products and/or Ingredients

The organization shall identify the relevant products and/or ingredients for which the objectives of its traceability system apply.

3　　Steps for the Design
3.1　　Position in the Feed and Food Chain

The organization shall determine its position in the food chain by at least identifying its suppliers and customers.

3.2　　Flow of Materials

The organization shall determine and document the flow of materials within its control in a manner which meets the objectives of the traceability system.

3.3　　Information Requirements

To meet its traceability objectives, the organization shall define the information

  (a) to be obtained from its suppliers,

  (b) to be collected concerning the product and process history, and

(c) to be provided to its customers and/or suppliers.

NOTE: The information required for a traceability system is influenced by its objectives and by the position of the organization in the feed and food chain.

3.4 Establishment of Procedures

Procedures generally relate to documenting the flow of materials and related information, including document retention and verification. The organization shall establish procedures that include at least the following:

(a) product definition;

(b) lot definition and identification;

(c) documentation of flow of materials, and information including media for record keeping;

(d) data management and recording protocols; and

(e) information retrieval protocols.

In the development and implementation of a traceability system, it is necessary to take into account the existing operation and management systems present in the organization.

Procedures to manage traceability information shall include a means to link and record the flow of information concerning materials and products, if needed.

Procedures shall be established to deal with nonconformity in the traceability system. These procedures should include corrections and corrective actions.

3.5 Documentation Requirements

The organization shall determine which documents are required to achieve the objectives of its traceability system.

Appropriate documentation shall include, as a minimum:

(a) a description of the relevant steps in the chain,

(b) a description of the responsibilities for the management of traceability data,

(c) written or recorded information documenting the traceability activities and manufacturing process, flows and results of traceability verification and audits,

(d) documentation addressing action taken to manage nonconformity related to the established traceability system, and

(e) document retention times.

See IS0 22000:2005, 4.2.2, for management of the control of documents.

See IS0 22000:2005, 4.2.3, for management of the control of records.

See IS0 22000:2005, 7.9, for the identified objectives of a traceability system.

3.6 Food Chain Coordination

If an organization participates in a traceability system with other organizations, the design elements shall be coordinated. Links in the food chain are established as each organization identifies its immediate prior source(s) and immediate subsequent recipient(s). When a claim is made about "Food chain traceability" for commercial purposes,

the relevant steps in the feed or food chain shall be identified by the organization making the claim and shall be supported by verification information.

NOTE: A chain traceability system can be applied when the part(s) being traced is (are) continuously connected.

4 Implementation

4.1 General

The organization shall demonstrate its commitment to the implementation of a traceability system by assigning management responsibilities and by providing resources.

Each organization may choose appropriate tools to trace, record, and communicate information.

4.2 Traceability Plan

Each organization shall establish a traceability plan which can be part of a broader management system. The traceability plan shall include all the identified requirements.

4.3 Responsibilities

The organization shall define and communicate tasks and responsibilities to its personnel.

4.4 Training Plan

An organization shall develop and implement a training plan. Personnel who can affect the traceability system shall be adequately trained and informed.

They shall be able to demonstrate competence to correctly implement the traceability system.

4.5 Monitoring

The organization shall establish a monitoring scheme for the traceability system.

4.6 Key Performance Indicators

The organization shall establish key performance indicators to measure the effectiveness of the system.

4.7 Internal Audits

The organization shall conduct internal audits at planned intervals, to assess the effectiveness of the system to meet the established objectives.

4.8 Review

The organization shall review the traceability system at appropriate intervals, or whenever changes are made to the objectives and/or the product or processes. Based on this review, the appropriate corrective and preventive action(s) shall be taken. This allows the establishment of a continuous improvement process.

This review shall include, but is not limited to, the following:

   (a) traceability test results;

(b) traceability audit findings;

(c) changes to product or processes;

(d) traceability-related information provided by other organizations in the feed and food chain;

(e) corrective actions related to traceability;

(f) customer feedback, including complaints, related to traceability;

(g) new or amended regulations affecting traceability;

(h) new statistical evaluation methods.