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Traceability in the feed and food chain — General principles and basic requirements for system design and implementation

Traçabilité de la chaîne alimentaire — Principes généraux et exigences fondamentales s'appliquant à la conception du système et à sa mise en oeuvre

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Foreword

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Introduction

A traceability system is a useful tool to assist an organization operating within a feed and food chain to achieve defined objectives in a management system.

The choice of a traceability system is influenced by regulations, product characteristics and customer expectations.

The complexity of the traceability system can vary depending on the features of the product and the objectives to be achieved.

The implementation by an organization of a traceability system depends on

— 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.

A traceability system on its own is insufficient to achieve food safety.

Traceability in the feed and food chain — General principles and basic requirements for system design and implementation

1 Scope

This International Standard gives the principles and specifies basic requirements for the design and implementation of a feed and food traceability system. It can be applied by an organization operating at any step in the feed and food chain.

It is intended to be flexible enough to allow feed organizations and food organizations to achieve identified objectives.

The traceability system is a technical tool to assist an organization to conform with its defined objectives and is applicable when necessary to determine the history, or location of a product or its relevant components.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 22000:2005, *Food safety management systems — Requirements for any organization in the food chain*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22000 and the following apply.

3.1
product
result of a process

[ISO 9000:2005, definition 3.4.2]

NOTE Product may include packaging material.

3.2
process
set of interrelated or interacting activities which transforms inputs into outputs

NOTE 1 Inputs to a process are generally outputs of other processes.

NOTE 2 Processes in an organization (3.10) are generally planned and carried out under controlled conditions to add value.

NOTE 3 A process where the conformity of other resulting product (3.1) cannot be readily or economically verified is frequently referred to as a “special process”.

[ISO 9000:2005, definition 3.4.1]

3.3
lot
set of units of a product which have been produced and/or processed or packaged under similar circumstances

NOTE 1 The lot is determined by parameters established beforehand by the organization.

NOTE 2 A set of units may be reduced to a single unit of product.

3.4
lot identification
process of assigning a unique code to a lot

3.5
location
place of production, processing, distribution, storage and handling from primary production to consumption

3.6
traceability
ability to follow the movement of a feed or food through specified stage(s) of production, processing and distribution

NOTE 1 Adapted from Reference [3].

NOTE 2 Movement can relate to the origin of the materials, processing history or distribution of the feed or food.

NOTE 3 Terms such as “document traceability”, “computer traceability” or “commercial traceability” should be avoided.

3.7
feed and food chain
sequence of the stages and operations involved in the production, processing, distribution and handling of feed and food, from primary production to consumption

NOTE Primary production includes the production of feed for food-producing animals and for animals intended for food production.

3.8
flow of materials
movement of any materials at any point in the feed and food chain

3.9
materials
feed and food, feed and food ingredients and packaging materials

3.10
organization
group of people and facilities with an arrangement of responsibilities, authorities and relationships

[ISO 9000:2005, definition 3.3.1]

NOTE 1 An organization may consist of one person.

NOTE 2 An organization can be public or private.

3.11
data
recorded information

3.12
traceability system
totality of data and operations that is capable of maintaining desired information about a product and its components through all or part of its production and utilization chain

4 Principles and objectives of traceability

4.1 General

Traceability systems should be able to document the history of the product and/or locate a product in the feed and 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 (see 4.3) from a technical and economic point of view.

Movement can relate to the origin of the materials, processing history or distribution of the feed or 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.

4.2 Principles

Traceability systems should be

— verifiable,

— applied consistently and equitably,

— results oriented,

— cost effective,

— practical to apply,

— compliant with any applicable regulations or policy, and

— compliant with defined accuracy requirements.

4.3 Objectives

In developing a feed and food chain traceability system, it is necessary to identify the specific objectives to be achieved. These objectives should take into consideration the principles identified in 4.2. 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 fulfil any local, regional, national or international regulations or policies, as applicable;

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

5 Design

5.1 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) feed and food chain coordination.

5.2 Choice of objectives

The organization shall identify the objectives of its traceability system (see 4.3).

5.3 Regulatory and policy requirements

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

5.4 Products and/or ingredients

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

5.5 Steps for the design

5.5.1 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.

5.5.2 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.

5.5.3 Information requirements

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

— to be obtained from its suppliers,

— to be collected concerning the product and process history, and

— 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.

5.6 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;

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.

5.7 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 description of the relevant steps in the chain,

— a description of the responsibilities for the management of traceability data,

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

— documentation addressing action taken to manage nonconformity related to the established traceability system, and

— document retention times.

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

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

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

5.8 Feed and food chain coordination

If an organization participates in a traceability system with other organizations, the design elements (see 5.1) shall be coordinated. Links in the feed and food chain are established as each organization identifies its immediate prior source(s) and immediate subsequent recipient(s). When a claim is made about “Feed and 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.

6 Implementation

6.1 General

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

Following the design and development of a traceability system, the organization shall implement the steps specified in 6.2 to 6.6.

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

6.2 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.

6.3 Responsibilities

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

6.4 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.

6.5 Monitoring

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

6.6 Key performance indicators

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

7 Internal audits

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

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.

Bibliography

[1] ISO 9000:2005, *Quality management systems — Fundamentals and vocabulary*

[2] ISO 19011, *Guidelines for quality and/or environmental management systems auditing*

[3] Codex Alimentarius: "*Principles for traceability/Product tracing as a tool within a food inspection and certification system*" (CAC/GL 60-2006)

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