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BSI Standards Publication

Prerequisite programmes on food safety

Part 5: Transport and storage

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National foreword

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Part 5: Transport and storage

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Partie 5: Transport et stockage

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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 17, *Management systems for food safety*.

A list of all parts in the ISO 22002 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The storage system and the transportation network are integral elements in the food chain.

Supply chain actors, such as growers and food processors, rely on proper storage and transportation practices to ensure that their products arrive safely at the final destination and in good condition. The role of organizations involved in the transportation network is to protect the foods, ingredients, raw materials and packaging in their custody during transport and storage.

ISO 22000 sets out specific food safety management system requirements for organizations in the food chain. One such requirement is that organizations establish, implement and maintain prerequisite programmes (PRP) to assist in controlling food safety hazards. This document is intended to be used to support management systems designed to meet the requirements specified in ISO 22000 and sets out the detailed requirements for those programmes related to transport and storage.

This document does not duplicate requirements given in ISO 22000 and is intended to be used in conjunction with ISO 22000.

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TECHNICAL SPECIFICATION **ISO/TS 22002-5:2019**

Prerequisite programmes on food safety —

Part 5: Transport and storage

1 Scope

This document specifies requirements for establishing, implementing and maintaining prerequisite programmes (PRPs) for transport and storage in the food chain to assist in controlling food safety hazards.

This document is applicable to all organizations, regardless of size or complexity, that are involved in transport and storage activities across the food supply chain and that wish to implement PRPs in such a way as to address the requirements specified in ISO 22000.

This document is neither designed nor intended for use in other parts of the food supply chain or in isolation.

In this document, transport and storage is aligned with ISO/TS 22003:2013, Annex A, Category G. This document includes all food and feed products and food packaging and packaging materials.

Live animals are excluded from the scope of this document except when intended for direct consumption, e.g. molluscs, crustaceans and live fish.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
calibration
set of operations that establish, under specified conditions, the relationship between values of quantities indicated by measuring instruments or measuring systems, or values represented by a material or reference material to corresponding values realized by standards

3.2
cleaning
removal of soil, food residue, dirt, grease or other extraneous matter

3.3
cleaning in place
CIP
cleaning (3.2) of equipment by impingement or circulation of flowing chemical solutions, cleaning liquids without disassembling

3.4
cleaning out of place
COP
cleaning (3.2) of equipment by disassembling and cleaning in a tank or in an automatic washer by circulating a cleaning solution

3.5
cross-docking
process by which *goods* (3.7) are unloaded, sorted, consolidated, loaded and shipped to the next destination

3.6
disinfection
reduction, by means of chemical agents and/or physical methods, of the number of microorganisms in the environment, to a level that does not compromise food safety

3.7
goods
food, feed, animal food and packaging *transported* (3.17) and *stored* (3.14) within the food chain

3.8
hazardous substance
solid, liquid or gas that is radioactive, flammable, explosive, corrosive, oxidizing, asphyxiating, pathogenic or allergenic, including, but not restricted to, detergents, sanitizers, pest control chemicals, lubricants, paints, processing aids and biochemical additives, which, if used or handled incorrectly or in increased dosage, could cause harm to the handler and/or consumer

3.9
identifier
mark, tag, label or accompanying document, either assigned by the organization itself or by another organization upwards in the food chain that formed the *logistic unit* (3.10), uniquely identifying *goods* (3.7)

3.10
logistic unit
unit used to *transport* (3.17) or *store* (3.14) *goods* (3.7)

Note 1 to entry: The term includes, but is not limited to, cases, pallets, containers, vessels and silos.

3.11
unpacked goods
goods (3.7) that are unwrapped or not *stored* (3.14) in self-contained packaging, including large-scale *logistic units* (3.10) such as vessels or road tankers

EXAMPLE Fresh produce in crates, shellfish in a mesh bag.

3.12
packed goods
goods (3.7) that are wrapped in a self-contained manner that prevents deterioration by external influences and maintains the integrity of goods, including goods in packaging that are intended for sale to consumers

EXAMPLE Carton boxes, drums, cans.

3.13
withdrawal/recall
removal of nonconforming *goods* (3.7) from the market, trade and warehouses, distribution centres and/or customer warehouses because they are (potentially) unsafe for consumption

3.14
storage
safekeeping of *goods* (3.7) in a depository (e.g. a warehouse)

3.15
temperature control
process by which the temperature of a space (and objects collectively there within) is measured, maintained and adjusted to achieve a specified temperature range

3.16
transshipment
shipment of *goods* (3.7) or containers to and from an intermediate destination

Note 1 to entry: One possible reason for transshipment is to change the means of *transport* (3.17) during the journey (e.g. from ship transport to road transport), known as "transloading".

3.17
transport
movement (including loading and unloading) of *goods* (3.7) by road, rail, air, water or other shipping means

3.18
waste
any substance or object that the organization discards, intends to discard or is required to discard

4 Prerequisite programmes for transport and storage

4.1 General requirements

The organization shall establish its PRPs relevant to the product category based on recognized industry codes of practice. Some examples are given in ISO 22000 for food safety management systems.

When establishing the PRPs for transport and/or storage, the product groups can be categorized as follows:

a) unpacked goods, not temperature- and/or other condition-controlled;

b) unpacked goods, temperature- and/or other condition-controlled;

c) packed goods, not temperature- and/or other condition-controlled;

d) packed goods, temperature- and/or other condition-controlled.

The practices applied by the organization during the transport and storage of goods shall be designed, documented and implemented to maintain appropriate storage conditions and integrity of goods. Goods shall be loaded, transported and unloaded under conditions suitable to prevent physical damage, cross-contamination and spoilage, including, but not limited to:

— microbiological contamination and/or growth (e.g. bacterial growth resulting from the temperature abuse of goods that require temperature control);

— physical contamination (e.g. glass contamination from broken lights, wood splinters from pallets, dust, pests);

— chemical contamination (e.g. allergens, product tainting, cleaning chemicals).

Food transport and storage operations are diverse in nature and not all of the requirements specified in this document apply to an individual site or process. Where exclusions are made or alternative measures implemented, these shall be justified. Any exclusions or alternative measures adopted shall not affect the ability of the organization to conform to these requirements.

4.2 Facilities

4.2.1 External layout

Sites shall be designed, constructed and maintained in a manner appropriate to the nature of the transport and storage operations to be carried out, and to minimize the likelihood of contamination.

The site boundaries shall be clearly identified. The site shall be maintained in good order. Vegetation shall be tended or removed. Roads, yards and parking areas shall be drained to prevent standing water and shall be maintained.

Loading areas shall be constructed so as to protect goods during adverse weather conditions, be easy to clean and to deter birds and other pests.

Consideration shall be given to potential sources of contamination from the local environment e.g. odour, dust, radiation.

Where potentially harmful substances could enter the goods, effective measures shall be taken to protect against potential contamination. The measures in place shall be reviewed periodically for effectiveness.

4.2.2 Internal layout and workspace

4.2.2.1 Internal design, layout and traffic patterns

Internal layouts shall be designed, constructed and maintained to facilitate good hygiene practices and to minimize the likelihood of contamination (e.g. leakage). The movement patterns of goods and people, and the layout of equipment, shall be designed to protect against potential sources of contamination.

The site shall provide adequate space or separation by time, with a logical flow of goods and personnel, and physical separation proportionate to the risk of (cross-)contamination.

Openings intended for transfer of goods shall be designed to minimize the entry of foreign matter and pests. All openings shall be closed when not in use.

4.2.2.2 Internal structures and fittings

Walls and floors shall be cleanable. The materials used to construct the premises shall be suitable for the cleaning system to be used.

External opening windows, roof vents or fans in areas where goods can be stored, shall be insect screened. External opening doors shall be closed or screened when not in use.

4.2.2.3 Drains and drainage

If present, internal and external drains shall be designed, constructed and located so that the risk of contamination of goods is avoided. Any drain in the facility shall be readily accessible for cleaning and repair.

4.2.3 Utilities

4.2.3.1 General requirements

The provision and transportation routes for utilities to and around transport and storage areas shall be designed or arranged to allow for the segregation of goods to minimize the risk of contamination.

Maintenance and service activities shall be organized to ensure that food safety is not compromised.

4.2.3.2 Water supply

The supply of water shall be suitable for the intended use and shall be sufficient to meet the needs of the process(es). Facilities for storage, transportation and, where needed, temperature control of the water shall be suitable to achieve the specified requirements.

Non-potable water shall have a separate supply system that is clearly identified and not connected to the potable water system to prevent mixing. Measures shall be taken to prevent non-potable water refluxing into the potable system.

Where canteen and toilet facilities are provided, potable water shall be provided for drinking water and hand washing.

Where the organization treats the water supply (e.g. chlorination), checks shall ensure that the water is suitable for the intended use.

Non-potable water may be used, for example, for washing down warehouse surrounds, washing down external pumps and external drains, the automatic fire fighting system, flushing toilets and urinals, the cooling tower and the condenser.

4.2.3.3 Chemicals and processing aids

Chemicals and processing aids shall be:

a) identified;

b) suitable for the intended use;

c) stored in a separate, secure (locked or otherwise access-controlled) area when not in immediate use.

4.2.3.4 Air quality and ventilation

Ventilation systems shall be designed and constructed in a manner that prevents air to flow from contaminated areas to clean areas. Specified air pressure differentials shall be maintained. The systems shall be accessible for cleaning, filter changing and maintenance.

Ventilation (natural or mechanical) shall be adequate to remove excess or unwanted steam, dust and odours, and to facilitate drying after wet cleaning.

When working with vulnerable unpacked goods, the air supply shall be controlled to minimize risk from airborne contamination.

Exterior air intake ports shall be examined periodically for physical integrity. Systems shall be cleaned and maintained as required.

4.2.3.5 Gases and compressed air

Gases and compressed air intended for food contact (including those used for transporting, blowing or drying goods or equipment) shall be from a source approved for food contact use, and filtered to remove dust, oil and water.

Gas and compressed air systems used for goods transport and storage (e.g. loading/unloading of bulk goods) shall be constructed and maintained so as to prevent contamination.

Filtration of the air should be as close to the point of food contact as is practicable.

Oil-free compressors should be used for compressed air production. Where oil is used for compressors and there is potential for the air to come into contact with the goods, the oil used shall be food grade. Requirements for filtration, humidity (RH%) and microbiology shall be specified if applicable.

4.2.3.6 Light

The intensity of light provided shall be suitable to the nature of the operation.

Light fixtures should be protected. Where full protection is not provided, there shall be a procedure in place for the management of glass and/or plastic.

Where goods could be contaminated due to broken light(s), immediate corrections shall be taken and corrective actions shall prevent reoccurrence.

4.3 Equipment

4.3.1 General

Equipment shall be designed and constructed to facilitate maintenance, cleaning and, where necessary, disinfection. Food contact equipment shall be constructed of suitable and durable materials able to withstand repeated cleaning.

Equipment shall be located to facilitate cleaning, permit access for monitoring activities and maintenance.

4.3.2 Food contact surfaces

Food contact surfaces shall be constructed from materials designated for food use and shall be impermeable and free from corrosion, e.g. rust. The contact surfaces shall not affect, or be affected by, the intended goods or cleaning system.

4.3.3 Maintenance

A planned maintenance programme shall be in place and shall include all equipment used to monitor and/or control food safety hazards. Maintenance programmes shall be documented.

Maintenance activities, including any temporary repairs, shall be carried out in such a way that equipment is not at risk of contamination.

Maintenance personnel shall be made aware of the food safety hazards associated with their activities.

The procedure for releasing equipment back into operation following maintenance shall include, if required, cleaning, disinfection and inspection pre-use.

Lubricants shall be food grade where there is a potential risk of direct contact with the goods.

4.4 Management of purchased materials and services

4.4.1 General requirements

Purchased materials, services and subcontracted activities that impact food safety shall be controlled to ensure that specified requirements are met.

There shall be a defined process for the selection, approval and monitoring of suppliers.

An updated list of approved suppliers, service providers and subcontractors, including those used infrequently, shall be maintained as documented information.

4.4.2 Incoming materials

The conformity of incoming materials to specified purchase requirements shall be verified. The method of verification shall be documented.

Nonconforming materials shall be controlled to prevent their unintended use.

4.5 Transport and storage operations

4.5.1 General

Vehicles, conveyances and containers shall provide protection against damage or contamination of the goods. Vehicles, conveyances and containers shall be cleaned between loads or lots, as appropriate to control the potential of cross-contamination.

Where logistic units are used for transporting goods, documented information of the logistic unit load history and cleaning shall be retained.

An effective stock rotation system shall be documented and implemented.

The integrity of goods in transport and storage should be confirmed at an appropriate frequency.

4.5.2 Logistic units

Procedures shall be in place to ensure the logistic units are maintained in good condition and to reduce the risk of breakdown and consequent failure to meet requirements. These procedures shall include, but are not limited to:

a) clear instructions and emergency contact numbers for the operators;

b) instructions on how to preserve any specific temperature or other environmental controls appropriate to the load;

c) checks required to be made on the load before continuing the journey.

Gasoline or diesel-powered equipment should not be used in food ingredient or food storage areas.

4.5.3 Loading

Prior to loading, logistic units used for distributing goods shall be inspected to ensure they are clean, in good repair, suitable for the purpose, and free from odours or other conditions that could impact negatively on the goods.

The loading practices shall meet the requirements defined in this document and shall be designed to maintain the integrity of goods.

The handling of expired stock shall be managed in accordance with 4.5.7.

4.5.4 Cross-docking and transshipment

Where the organization is involved in cross-docking and transshipment activities, it shall ensure conformity with applicable requirements in this document.

4.5.5 Unloading

The unloading practices shall meet the requirements specified in this document. These practices shall be designed to maintain the integrity of goods. Nonconforming goods shall be identified and handled in accordance with 4.5.7.

4.5.6 Controlled conditions

The organization shall ensure appropriate conditions are maintained for food safety.

Where temperature and/or other conditions (e.g. filtration, humidity, microbiology of air) are deemed critical by the organization, a control system shall be put in place and monitored.

A system shall be in place to alert the relevant personnel if the conditions deviate from the specified limits. Following the alert, appropriate corrections and corrective action shall be taken.

Automated recording equipment should be used to monitor and document the conditions of the storage and loading area. In the absence of automated equipment, monitoring at an appropriate frequency shall be carried out and recorded. Equipment used to hold goods at specified temperatures and other conditions shall be calibrated for its purpose.

Where settings can be adjusted, measures shall be in place to verify the controlled-condition settings of the logistic unit.

Logistic units transporting goods under controlled conditions shall either:

— ensure the conditions are achieved prior to loading; or

— achieve the required conditions after loading without compromising the integrity of the goods.

Documented information on how to manage the load in transit shall be available, including actions to be taken in the event of a failure to achieve the specified conditions during transit.

4.5.7 Nonconforming goods, damages and returns

Procedures shall be in place to ensure all nonconforming goods are clearly identified and, where necessary, segregated until the goods are evaluated for release or disposal.

Goods being held prior to evaluation shall be stored in a manner that minimizes the deterioration or contamination of the goods.

The organization shall define a procedure for customer returns and rejections, including the handling of goods close to expiry dates.

4.6 Hygiene

4.6.1 Personnel hygiene

4.6.1.1 General requirements

All personnel, visitors and contractors shall be required to conform to the documented requirements. Domestic and other animals shall be prohibited from the storage premises and logistic units.

4.6.1.2 Personnel facilities

Suitably located and clearly designated personnel hygiene facilities shall be provided by the organization. Toilet facilities shall not open directly on to packing or storage areas.

The facilities shall:

a) include sinks designated for hand washing separate from sinks for food use and equipment;

b) include an adequate number of toilets of appropriate hygienic design, adequate separation from food-handling areas, each with hand-washing, drying and, where required, sanitizing facilities;

c) include adequate changing facilities for personnel;

d) enable personnel handling food and/or food packaging to move to the transport and storage area in such a way that risk to the cleanliness of their workwear is minimized.

Personal lockers shall be maintained in a clean and hygienic manner.

4.6.1.3 Staff canteens and designated eating areas

Staff canteens and designated areas for food storage and consumption shall be located so that the potential for cross-contamination of transport and storage areas is minimized.

Staff canteens shall be managed to ensure the hygienic storage of ingredients and the preparation, storage and serving of food.

Designated areas shall be provided for the storage and consumption of food brought onto the premises by personnel.

4.6.1.4 Workwear and protective clothing

Personnel who work in, or enter into, areas where goods are handled, shall use workwear that is fit for purpose, clean and in good condition.

Personal protective equipment, where required, shall be designed to prevent contamination and shall be maintained in hygienic condition.

4.6.1.5 Illness and injuries

Where permitted by law, personnel, visitors and contractors shall be required to report symptoms of communicable diseases to a designated person for a decision on their possible exclusion from food-handling areas.

People known or suspected to be infected with, or carrying, a disease or illness transmissible through food shall be prevented from handling food or materials that come into contact with food.

Personnel with wounds or burns shall be required to cover them with specified dressings. Any lost dressing shall be reported.

4.6.1.6 Personal cleanliness

Personnel in transport and storage areas shall be required to wash and, where required, sanitize hands:

a) before starting any food-handling activities;

b) immediately after using the toilet or blowing their nose;

c) immediately after handling any potentially contaminated material.

Personnel shall be required to refrain from sneezing or coughing over goods. Spitting (expectorating) shall be prohibited.

4.6.1.7 Personal behaviour

A documented procedure shall describe the behaviour required of personnel in transport and storage areas. The procedure shall, at a minimum, cover:

— the permissibility of eating, drinking, smoking and vaping (e-cigarettes), and chewing in designated areas only;

— the permissibility of personal items, such as smoking materials and medicines, in designated areas only;

— the prohibition of the storage of food-contact tools and equipment in personal lockers.

The following shall apply to areas where unpacked goods are present:

— provisions to minimize contamination from permitted jewellery or implements used for writing, e.g. pens;

— the prohibition of the use of nail polish, false nails and false eyelashes.

4.6.2 Cleaning and disinfection

4.6.2.1 Cleaning and disinfection agents and tools

Facilities, vehicles, logistic units and equipment shall be designed and maintained in a condition that facilitates wet or dry cleaning and/or disinfection.

Chemicals, cleaning and disinfection agents shall be clearly identified, approved for the intended use, stored separately and used only in accordance with the manufacturer's instructions.

Tools and equipment used shall be of hygienic design and maintained in a condition that does not present a potential source of contamination.

4.6.2.2 Cleaning and disinfection programmes

The organization shall establish cleaning and disinfection programmes. The organization shall assess the effectiveness of the programmes to ensure that all parts of the site, including vehicles, logistic units and equipment, are cleaned and/or disinfected, including the cleaning of cleaning equipment.

Cleaning and/or disinfection programmes shall consider:

a) the areas, items of equipment and utensils to be cleaned and/or disinfected;

b) the responsibility for the tasks specified;

c) the cleaning/disinfection method (e.g. CIP, COP) and the frequency;

d) the use of dedicated cleaning/disinfection tools;

e) removal or disassembly requirements for cleaning/disinfection tools;

f) monitoring and verification arrangements, including retaining documented information;

g) pre-start-up and/or post-clean inspections;

h) methods for monitoring and verifying the effectiveness of the cleaning.

4.6.3 Waste disposal and recycling

4.6.3.1 General requirements

Systems shall be in place to ensure that waste materials are identified, collected, removed and disposed of in a manner that prevents the contamination of goods, equipment used, or transport and storage areas. Where required, a separate, designated storage area shall be provided for waste materials.

4.6.3.2 Waste management and removal

Provision shall be made for the segregation, storage and removal of waste, including recycling materials.

Waste shall be removed at appropriate frequencies to avoid accumulation.

The removal and destruction of waste shall be carried out by approved disposal contractors.

4.6.3.3 Hazardous substance

Containers for hazardous substances shall be:

a) clearly identified for their intended purpose;

b) located in a designated area;

c) constructed of impervious material that can be readily cleaned and disinfected;

d) closed when not in use;

e) locked where appropriate.

4.6.4 Pest control

4.6.4.1 General requirements

The organization shall have a relevant pest control programme in place.

Inspection and monitoring procedures for hygiene, cleaning and incoming materials shall be implemented to avoid creating an environment suitable for pest activity.

All goods shall be stored off the floor and with sufficient space between the goods and the walls to allow inspection and pest control activities to be carried out.

4.6.4.2 Pest control programmes

The organization shall have a nominated person to manage pest control activities and/or deal with appointed expert contractors.

Pest control programmes shall be documented and shall identify target pests, address plans, methods and schedules, control procedures and, where necessary, address training requirements.

Programmes shall include a list of chemicals that are approved for use in specified areas of the site.

4.6.4.3 Control of ingress of pest

Facilities, vehicles and logistic units shall be maintained in good repair to prevent the entry of pests.

External doors, windows or ventilation openings shall be designed and used in such a way as to minimize the potential for entry of pests.

4.6.4.4 Monitoring and detections

If relevant, pest-monitoring programmes shall include the placing of detectors and traps to identify pest activity.

Detectors and traps shall be of robust, tamper-resistant construction and shall be appropriate for the target pest.

Where a pest control programme is in place at the premises, it shall be provided by a qualified person.

The traps or other devices used on the premises shall be designed and located in order to prevent any potential contamination.

A map of all traps or devices in use on the premises shall be maintained.

The traps or devices shall be inspected at an appropriate frequency to ensure that pest activity is under control.

Documented information of inspections shall be retained and analysed to identify any trends.

4.6.4.5 Harbourage and infestations

Transport and storage practices shall be designed and maintained to minimize the availability of food and water to pests.

Potential pest harbourage (e.g. burrows, undergrowth, stored items) shall be removed.

Goods found to be infested shall be handled in such a way as to prevent the contamination of other goods or the site.

4.6.4.6 Eradication

Eradication measures shall be put in place immediately after the evidence of infestation is reported.

Chemical use and application shall be restricted to trained operators and shall be controlled to avoid contamination.

Documented information of chemical use shall be maintained to show the type, quantity and concentrations used, where, when and how applied, and the target pest.

4.7 Goods identification

The organization shall ensure that goods (at minimum their packaging) are visually inspected upon receipt and again at dispatch, including the verification of the quantity and identification of goods received or dispatched.

NOTE Depending on the situation, “quantity” can be expressed in number of “logistic units” and “identification” can be expressed in “product category”.

The organization shall ensure that all logistic units and goods picked from logistic units, throughout the transport and storage process, are assigned with identifier(s). The identifier(s) shall enable the retrieval of information on the following:

— goods identification and quantity(ies);

— supplier(s) identification;

— date(s) of receipt of goods;

— best-before date(s) or use-by date(s), if applicable;

— documented information regarding requirements for temperature and/or other controlled conditions during transport and storage, if applicable;

— nonconforming/quarantined goods;

— warnings in the case of hazardous substances.

Where logistic units are assembled by the organization, which may also include the mixing of different deliveries of goods in bulk and the picking of material from different logistic units, the organization shall retain information on the following:

— the time and date of the operation;

— the identifier(s) of the logistic unit(s);

— an inventory of stock of the logistic unit(s) before and after the operation.

The organization shall establish, implement and maintain measures to prevent the loss of identification of all or any parts of a logistic unit.

The organization shall retain information on the delivery of goods.

The information shall include:

— the identification of the goods and quantity(ies);

— the identification of the goods received;

— the date of delivery;

— the identifier(s) of logistic unit(s);

— documented information regarding the temperature and/or other controlled conditions profile during storage/transport, if applicable.

4.8 Withdrawal/recall of goods

A procedure shall be in place for managing the withdrawal/recall of goods. The procedure shall be capable of being operated at any time, and shall include:

— provisions for stock location, logistics, recovery, storage and disposal;

— a list of key contacts in the event of a withdrawal/recall.

Documented information of notifications received or issued shall be retained.

Withdrawn/recalled goods still under storage/transport operator responsibility (in storage or transporting units) shall be secured or held under control until the disposition of the goods is decided by the owner/manufacturer.

4.9 Safeguarding of goods

The organization shall put in place appropriate measures to protect the goods from intentional acts, that may include, but are not limited to:

— sabotage, terrorism;

— mislabelling, counterfeiting, tampering;

— vandalism, theft.

A procedure shall be in place for the management of access control to the facilities, logistic units and confidential information.

Incoming and outgoing goods shall be checked to verify that the goods have not been compromised.

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[1] ISO/TS 22003:2013, *Food safety management systems — Requirements for bodies providing audit and certification of food safety management systems*

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389 Chiswick High Road London W4 4AL UK