
**Prerequisite programmes on food
safety —**

**Part 3:
Farming**

Programmes prérequis pour la sécurité des denrées alimentaires —

Partie 3: Agriculture

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

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An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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ISO/TS 22002-3 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 17, *Management systems for food safety*.

ISO/TS 22002 consists of the following parts, under the general title *Prerequisite programmes on food safety*:

- *Part 1: Food manufacturing*
- *Part 3: Farming*

The following part is under preparation:

- *Part 2: Catering*

Introduction

Food and feed safety has to be ensured at all stages of the food chain. Operators have the responsibility to ensure that the production, processing and distribution of foodstuffs meet hygiene requirements.

In the same way, farmers (organizations) have to implement food safety control measures relevant to the required safety of their end-products. This applies to all farm end-products, but the required safety may depend on the intended use, such as whether they are intended to be processed, and on whether hazards can be controlled later in the food chain. Farmers (organizations) will be able to justify and implement these control measures, and when necessary carry out records, ensure upstream and downstream traceability, maintain documents related to incoming materials and even sometimes carry out sampling for analyses.

The farmers (organizations) are required to comply with local regulation including general and specific hygiene rules, which include good hygiene programmes. Where no such regulation exists, it is often the case that Codex standards or the regulation of the country of sales apply.

Today, food safety control measures at farms are typically integrated into good practices [e.g. good agricultural practices (GAP), good farming practices (GFP), good veterinary practices (GVP), good hygienic practices (GHP)]. GAP and GFP can address environmental, economic and social sustainability for on-farm processes, resulting in safe and qualitative food and non-food agricultural products. GHP address the conditions and measures necessary to ensure the safety and suitability of feed or food at all stages of the food chain. GVP address the appropriate use of veterinary drugs or feed additives, in accordance with the authorized use, in terms of dosage, applications and withholding periods, to obtain adequate treatment of animals while leaving as little residue as possible in food derived from the animals. These practices aim at contaminants in general, whether they affect safety, suitability or both. They are generally not oriented towards specific hazards.

The roles and responsibilities of the Codex Alimentarius Commission (CAC) and the World Organisation for Animal Health (OIE) are to set international standards that are the basis for safe international trade under the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The OIE establishes official standards for animal health (including on farm measures for food safety) and health certification and the CAC establishes official standards for food safety and labelling.

ISO 22000 specifies food safety requirements for organizations in the food chain willing to meet them. One such requirement is that organizations establish, implement, and maintain prerequisite programmes (PRPs) to assist in controlling food safety hazards (ISO 22000:2005, 7.2). PRPs are the basic conditions and activities that are necessary to maintain a hygienic environment throughout the food chain suitable for the production, handling and provision of safe end-products and safe food for human consumption.

When a farm moves from a GHP-based system to an ISO 22000-based system, a hazard analysis is required when it is missing. Then, most of the GHPs are likely to continue as PRPs. If the hazard analysis concludes that there are hazards that need to be controlled by targeted measures, others may be categorized as operational prerequisite programs (oPRPs).

This part of ISO 22002 does not duplicate the requirements given in ISO 22000 and is intended to be used when establishing, implementing and maintaining the PRPs specific to the organization(s), in accordance with ISO 22000. This part of ISO 22002 is not intended for certification purposes.

In practical terms, the following applications of this part of ISO 22002, in accordance with ISO 22000, are possible.

- a) An organization developing the PRPs part of codes of practice, or checking that an existing code of practice is consistent with this part of ISO 22002.
- b) A group of farmers establishing a common ISO 22000 food safety management system. Based on the hazards analysis, the group determines the control measures to be implemented by each member. It is intended that the group of farmers will use this part of ISO 22002 as a basis to structure and document the PRPs corresponding to the activity of the farms. If certification is desired, the certificate can be granted to the group of farmers and not to the individual members.

- c) One or more organizations establishing an integrated ISO 22000 food safety management system covering both farming and processing. Based on the hazards analysis, the organization(s) determine(s) the control measures to be implemented at the farming and processing levels. PRPs applicable to the farms will be selected and implemented on the basis of this part of ISO 22002. PRPs applicable to the processing establishment(s) will be selected and implemented on the basis of the ISO/TS 22002-1. If certification is desired, one certificate can be granted to the integrated system.
- d) A farmer implementing an ISO 22000 food safety management system. Based on the hazards analysis, the farmer determines the control measures to be implemented. The farmer will use this part of ISO 22002 as a basis to structure and document the PRPs corresponding to the activity of the farm. If certification is desired, the certificate can be granted to the farmer.

Each subclause specifying guidelines for the selection of PRPs within Clauses 5, 6 and 7, starts with a paragraph introducing the objective as regards food safety. It is followed in the next paragraphs by general requirements (“shall” wording) for maintaining a hygienic environment within primary production. Further, itemized examples of potentially applicable PRPs intended to comply with those requirements are recommended (“should” wording). The final paragraphs of each subclause describe the documentation, including records, which are required or recommended, as well as the actions to implement when applicable requirements are no longer met.

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Prerequisite programmes on food safety —

Part 3: Farming

1 Scope

This part of ISO 22002 specifies requirements and guidelines for the design, implementation, and documentation of prerequisite programmes (PRPs) that maintain a hygienic environment and assist in controlling food safety hazards in the food chain.

NOTE 1 The last paragraph of the introduction provides information for a correct understanding of the normative or guidance character of the subclauses within Clauses 5, 6 and 7 of this part of ISO 22002.

This part of ISO 22002 is applicable to all organizations (including individual farms or groups of farms), regardless of size or complexity, which are involved in farming steps of the food chain and wish to implement PRPs in accordance with ISO 22000:2005, 7.2. If an organization is using this part of ISO 22002 as a reference for the purpose of making a self-declaration of conformity with or seeking certification to ISO 22000:2005, deviations therefrom (i.e. where exclusions are made or alternative measures are implemented) need to be justified and documented. It is expected that such deviations will not affect the ability of the organization to comply with the requirements of ISO 22000.

This part of ISO 22002 is applicable to the farming of crops (e.g. cereals, fruits, vegetables), living farm animals (e.g. cattle, poultry, pigs, fish) and the handling of their products (e.g. milk, eggs). It is not applicable to activities such as picking of wild fruits, vegetables and mushrooms, fishing, hunting, which are not considered as organized farming activities.

All operations related to farming are included in the scope (e.g. sorting, cleaning, packing of unprocessed products, on-farm feed manufacturing, transport within the farm). However, this part of ISO 22002 is not applicable to processing activities carried out on farm premises (e.g. heating, smoking, curing, maturing, fermenting, drying, marinating, extraction, extrusion or a combination of those processes). Neither is this part of ISO 22002 applicable to products or animals that are being transported to or from the farm.

NOTE 2 Guidance on PRPs for operations further down the food chain will be covered, if necessary, by other parts of ISO 22002, as is done by ISO/TS 22002-1 for manufacturing.

Farming operations are diverse in nature according to size, type of products, production methods, geographical and biological environment, related statutory and regulatory requirements etc. Therefore, the need, intensity and nature of PRPs will differ between organizations. Established PRPs can also change as the result of the review procedures stated in ISO 22000:2005, 8.2. This part of ISO 22002 focuses on the requirements for the management of PRPs, while the design of the exact PRPs is left to the user. The management of PRPs includes assessment of the need, selection of measures that meet the identified needs and required records. The specific examples of PRPs listed in this part of ISO 22002 are intended for guidance only, and are aimed for application with due regard to the overall objective of producing food which is safe and suitable for consumption.

It is possible for this part of ISO 22002 to be applied by other organizations willing to develop codes of practice and other types of supplier-buyer relationship based on ISO 22000.

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.

3 Terms and definitions

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

3.1

clean water

water that does not compromise food safety in circumstances of its use

NOTE 1 Adapted from CAC/RCP 53-2003^[4].

NOTE 2 In the context of this part of ISO 22002, the term refers to natural or purified water that does not contain microorganisms, harmful substances in quantities capable of directly or indirectly affecting the safety of food.

3.2

competent person

person, qualified by knowledge and practical experience, with the necessary skills and ability to perform an assigned task

NOTE Education, training or experience is how a person achieves competency.

3.3

contamination

introduction or occurrence of a contaminant in food, feed or in food and feed environment

NOTE Adapted from CAC/RCP 1-1969^[3].

3.4

contaminant

any biological or chemical agent, foreign matter or other substance not intentionally added to food or feed which may compromise food safety

NOTE 1 Adapted from CAC/RCP 1-1969^[3].

NOTE 2 In the context of this part of ISO 22002, the term “foreign matter” refers to physical contaminants.

NOTE 3 This definition is similar to the definition of “food safety hazard” given in ISO 22000:2005, 3.3. In fact, in the context of ISO 22000:2005, food safety hazards are identified during the hazard analysis, after the establishment of PRPs. Consequently, the term “contaminant” is used in this part of ISO 22002.

3.5

feed

any single or multiple materials, whether processed, semi-processed or raw, which is intended to be fed directly to food-producing animals

NOTE Adapted from CAC/RCP 54-2004^[8].

3.6

feed additive

any intentionally added ingredient not normally consumed as feed by itself, whether or not it has nutritional value, which affects the characteristics of feed or animal products

NOTE Adapted from CAC/RCP 54-2004^[8].

3.7

feed ingredient

component part or constituent of any combination or mixture making up a feed, whether or not it has a nutritional value in the animal’s diet, including feed additives

NOTE 1 Ingredients are of plant or animal origin, whether terrestrial or aquatic, or other organic or inorganic substances.

NOTE 2 Adapted from CAC/RCP 54-2004^[8].

3.8**lot**

set of units of a product which have been produced or processed or packaged under similar circumstances

NOTE 1 Adapted from ISO 22005:2007^[2].

NOTE 2 The lot is determined by parameters established beforehand by the organization.

NOTE 3 A set of units can include a single unit of product.

3.9**medicated feed**

any feed which contains **veterinary drugs** (3.15)

NOTE Adapted from CAC/RCP 54-2004^[8].

3.10**organization**

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

EXAMPLE Company, corporation, firm, enterprise, institution, charity, sole trader, association, or parts or combination thereof.

[ISO 9000:2005^[1], 3.1.1]

NOTE In the context of this part of ISO 22002, the term refers to a farmer, a group of farmers, farming company or an association, an authority or a processing company establishing PRPs for farmers. An organization can be public or private.

3.11**packaging**

any product to be used for containment, protection, handling, delivery, storage, transport and presentation of agricultural products or foods

NOTE 1 Adapted from BSI/PAS 223^[14].
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EXAMPLE Wraps and containers.

NOTE 2 In the context of this part of ISO 22002, the term “packing” refers to the action of placing an agricultural product or food into one or more items of packaging.

3.12**pest**

unwanted species of plant or animal that may have a detrimental effect for humans, their activities or the products they use or produce, or for animals or for the environment

NOTE In the context of this part of ISO 22002, the term refers to small animals, birds, and insects that destroy crops, spoil food or spread disease in fields or on farm premises.

3.13**plant protection product**

any substance or microorganism, including a virus, or a mixture or solution composed of two or more of them, prepared in the form in which it is supplied to the user, intended to: protect plants or plant products against harmful organisms or prevent the action of such organisms; influence the life processes of plants other than as a nutrient; preserve plant products; destroy undesired plants or parts of plants; or check or prevent the undesired growth of plants

NOTE In the context of this part of ISO 22002, the term refers to herbicides, algicides, rodenticides, talpicides, leporicides, molluscicides, nematocides, insecticides, acaricides, fungicides, bactericides, viricides, disinfectants, repellents, attractants, fumigants, plant activators, plant growth regulators, elicitors of self-defence mechanisms, etc. intended to be used in growing, harvesting and post-harvest activities.

3.14

potable water

water of sufficiently high quality that can be consumed or used with low risk of immediate or long-term harm

NOTE Quality standards for drinking water for human consumption are described in the WHO *Guidelines for drinking-water quality*^[13].

3.15

veterinary drug

any substance applied or administered to any food-producing animal, such as meat or milk-producing animals, poultry, fish or bees, whether used for therapeutic, prophylactic or diagnostic purposes or for modification of physiological functions or behaviour

NOTE This definition of veterinary drugs includes parasiticides intended to be applied or administered to food-producing animals.

3.16

withholding period

withdrawal period

time during which a crop, an animal or its products cannot be used for human consumption following the last application of a plant protection product to the crop (including pastures), or the last application or administration of a veterinary drug to the animal, that ensures that the foodstuff does not contain any residues in quantities in excess of established maximum residue limits

4 General requirements

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The organization developing the PRPs shall identify, select and maintain PRPs that:

- a) are able to minimize the likelihood of introducing contaminants and meet the requirements set down in this part of ISO 22002;
- b) enable the implementation of regulatory requirements related to protection against contamination;
- c) are among those recommended in this part of ISO 22002, by externally developed codes of practice targeting the type of farm production, by the processing plant receiving the farm end-product, or by the competent authority;

NOTE Externally developed codes of practice include international codes of practice listed in the Bibliography.

- d) are appropriate to the identified threats and to the size and nature of the farm.

The organization shall establish and maintain the appropriate documentation and records, such as:

- 1) the regulatory requirements, b), that are to be met by the selected PRPs;
- 2) the externally developed recommendations, c), from which the PRPs have been selected;
- 3) the description of the selected PRPs and how they are managed.

NOTE The management of PRPs includes, in particular, monitoring, verification, corrective actions and corresponding records and is part of the food safety management system requirements set down in ISO 22000.

5 Common prerequisite programmes

5.1 General

Food products can be contaminated in many ways. For example, waste, personnel, water, and equipment can constitute sources of contamination. Whatever the type of production considered, control measures exist to reduce the likelihood of contamination. This clause deals with the identification of those measures that are appropriate for implementation as PRPs.

5.2 Location

The organization shall implement measures that minimize the likelihood of introducing harmful contaminants from environmentally polluted areas.

The organization shall identify potential sources and the nature of such contamination in the neighbouring environment.

The organization shall identify water sources and reserves used for farming activities, e.g. springs, rivers and wells. The organization should identify on a map water sources and reserves, and locate sources of potential contamination. Local authorities can assist in the identification of water sources and reserves. Monitoring local district development plans is useful to foresee and prevent future problems.

Any previous accidents that could have contaminated the farm environment (e.g. fire, flood) should be described.

Depending on the operations and where appropriate to minimize the likelihood of food contamination, examples of PRPs that should be implemented are to:

- a) locate farming activities away from environmentally polluted areas and neighbouring activities which pose a serious threat of contaminating food;

NOTE Examples of environmentally polluted areas are areas with a history of industrial production, waste storage or nuclear fall-out; examples of potentially threatening neighbouring activities include roads with heavy traffic (e.g. lead contamination), incinerators (e.g. dioxin contamination), sewage treatment plants (microorganisms, heavy metals), other industries that can pollute water sources, land or air.

- b) plant crops or keep animals away from particularly high levels of specific contaminants (e.g. lead, cadmium, dioxins) to which they are sensitive;
- c) select water sources or reserves according to their intended use;
- d) protect from faecal contamination the water that is used for irrigating ready-to-eat fruits and vegetables.

Documentation should include an updated list/map of premises, water sources and reserves used, as well as identified contamination sources.

If the organization discovers information that can have an impact on the safety of its products, it shall take appropriate measures and inform the competent authority when necessary.

5.3 Construction and layout of premises

Farm premises shall be designed and constructed in such a way as to maintain an appropriate degree of hygiene and to minimize the likelihood of cross-contamination.

NOTE In crop production, an example of cross-contamination is the contamination between incoming (raw) products and washed and sorted products. In animal production, an example of cross-contamination is the contamination between the flow of effluents and the flow of feed.

Depending on the operations and where appropriate to minimize the likelihood of food contamination, examples of PRPs that should be implemented are to:

- a) separate changing and eating areas, from areas where foods are handled;
- b) control animal density by adapting livestock or animal size to the surface or volume of buildings, land or water;
- c) design facilities so as to allow separating groups or lots of animals, isolating sick or newly introduced animals, and preventing the introduction or spread of zoonotic diseases;
- d) design buildings in accordance with the required level of hygiene, by providing adequate ventilation, lighting and cleanability, so as to minimize the exposure of food producing animals and their products to contaminants and pests;

NOTE Examples of areas requiring a high level of hygiene are storage areas and places where food products are handled, for instance the milking facility.

- e) construct buildings with non-toxic and cleanable materials;
- f) store materials that may constitute a source of food contamination (e.g. plant protection products, detergents, disinfectants, fuel and oils, wastes and packaging) in specific and adapted locations;
- g) equip premises with properly designed and functioning toilets so as to minimize the likelihood of faecal contamination;
- h) equip premises with clean or potable water inlets appropriate to the intended use;
- i) provide potable water inlet for toilets in areas where the likelihood of contaminating foods from workers' hands is particularly high;
- j) identify potable and non-potable water pipes;
- k) design and equip facilities so as to collect and maintain away from animals and foods the effluents and waste waters that may result in food contamination;
- l) set premises and the immediate farm surroundings in a manner that allows an appropriate degree of drainage and to minimize the likelihood of food contamination from stagnant waters;
- m) set and maintain air-conditioning systems so as not to increase the likelihood of food contamination;
- n) design and equip facilities so as to prevent undesired animals from entering the facilities.

Documentation should include an updated map of the premises, locating the potential sources of food contamination (e.g. chemical products storage area) and the facilities necessary to minimize the likelihood of food contamination (e.g. water inlets).

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5.4 Equipment suitability and maintenance

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The organization shall design, install and use equipment in such a way as to maintain an appropriate degree of hygiene. Equipment shall not itself constitute a source of food contamination.

The organization shall identify and implement measures to minimize the likelihood of food contamination by pollutants from heavy equipment used in field operations (e.g. oil leak, gas emission).

The organization shall install and use equipment in accordance with the conditions of use provided by the manufacturer, or, if not available, technical standards.

The equipment shall be kept in proper working condition. The organization shall follow the manufacturer's instructions for maintaining equipment intended to come in contact with foods. Harvest containers shall be checked and maintained in good condition (e.g. no damage).

Depending on the operations and where appropriate to minimize the likelihood of food contamination, examples of PRPs that should be implemented are to:

- a) use food contact equipment (e.g. a milk tank) that is:
 - 1) made of materials that do not increase the likelihood of chemical contamination of foods;
 - 2) designed so as to allow appropriate sanitary inspection, cleaning and, if necessary, disinfection;
 - 3) designed so as to allow a complete drainage and, where necessary, the prevention of post-disinfection contamination from the environment;
- b) verify, calibrate, maintain or replace equipment regularly, and, in all cases, in accordance with the manufacturer's instructions;