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# Guide to good farming practices for animal production food safety

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This draft guide to good farming practices for animal production food safety was taken from the Report of the Meeting of the OIE Terrestrial Animal Health Standards Commission (Paris, 17-28 January 2005).

**Summary**

Food safety is now universally recognised as a public health priority. It requires a global approach, from production to consumption. This article addresses the first stage of the food chain and the steps farmers can take to optimise the food safety control of products of animal origin. This inevitably means controlling the health status of the animals from which food products are derived. The present article addresses all those hazards whose control at farm level can have a beneficial or even decisive effect on the food safety of products of animal origin (including: milk and milk products, meat and meat products, eggs and egg products, honey and apiculture products). It is organised in eight sections: buildings and other facilities; health conditions for introduction of animals into the farm; animal feeding; animal watering; veterinary drugs; farm management; preparation of animals for slaughter; and common measures for record keeping and traceability.

**Keywords**

Animal production – Farm management – Farming practices – Food safety – Production level – Rearing.

## Foreword

Following a request by the World Organisation for Animal Health (OIE) International Committee to strengthen activities in the food safety area, and desiring to further develop collaboration with the Codex Alimentarius Commission (CAC), a permanent 'OIE Working Group on Animal Production Food Safety' was established in 2002. The Working Group's role is to coordinate OIE activities related to animal production food safety and to provide advice to the Director General of the OIE and relevant Specialist Commissions in these areas.

The draft guide to good farming practices presented in this article has been produced by the Working Group. The Working Group is further developing this guide, so this article cannot be considered as a definitive version. The version reported here was included in the report of the third meeting of the OIE Working Group, which was published in the report of the meeting of the OIE Terrestrial Animal Health Standards Commission (January 2005). Other international standards and recommendations are included in the Appendix.

At its fifth meeting (February 2006), the Working Group recommended a joint OIE/Food and Agriculture Organization (FAO) revision of this draft guide to good farming practices; in this work, a contribution from the World Health Organization and the CAC Secretariat would be sought. The outcome would be published as a joint OIE/FAO guide.

## Introduction

These guidelines are intended to help competent authorities and stakeholders, especially farmers, to fully assume their responsibilities at the first stage of the food

chain to optimise the food safety control of products of animal origin offered to consumers.

The recommendations in these guidelines serve as a tool to help competent authorities at the farm level, particularly Veterinary Services, to fulfil their responsibilities.

Food safety is now universally recognised as a public health priority. It requires a global approach, from production to consumption, which is so aptly conveyed by the expressions 'from the stable to the table' and 'from the field to the plate'.

As far as animal products and products of animal origin are concerned, this inevitably means controlling the health status of the animals from which these food products are derived. Animal health status must be assessed with regard to any infectious (bacterial and viral) or parasitic agents, and especially zoonotic agents, that they could be carrying at the primary production stage. The possibility of the animals having ingested and possibly accumulated chemical (drug residues, pesticides, heavy metals, etc.) or physical contaminants (radioactive elements, foreign bodies, etc.) during their lifetime must also be addressed.

Any such biological, chemical and physical agents present in the body of the live animal may contaminate animal products (milk, meat, fish, eggs, etc.) at levels that are unacceptable in terms of public health. Controlling the safety of food of animal origin at the primary production stage therefore involves all the measures (implemented at the farm or production unit level) necessary to ensure that these contaminants do not end up in animal products, or, if they do, that their levels do not exceed the maximum permissible levels, notably the maximum residue limits and microbiological criteria set by the CAC.

The tools for controlling food safety, namely the codes of hygienic practice and the hazard analysis and critical control point system, have proved their effectiveness at the secondary production and distribution stages. It is clearly appropriate to try to apply them wherever possible at the primary production stage of animal products, in other words at the farm or production unit level, whenever an appreciable improvement in the level of the control of food safety may result.

The guidelines presented here cover eight areas of primary production in which preventive actions can usefully be implemented; they are, as follows:

*a*) buildings and other facilities: surroundings and environmental control

*b*) health conditions for introduction of animals into the farm

*c*) animal feeding

*d*) animal watering

*e*) veterinary drugs

*f*) farm management

*g*) preparation of animals for slaughter

*h*) common measures for record keeping and traceability.

## Scope of this Guide

The present document addresses all those hazards whose control at farm level can have a beneficial or even decisive effect on the food safety of products of animal origin (including: milk and milk products, meat and meat products, eggs and egg products, honey and apiculture products).

It does not address the processing of products at the farm level which comes within the scope of specific standards in the Codex Alimentarius.

It does not address animal welfare aspects of farm production.

## Hazards considered within this Guide

### Biological hazards

The biological agents of the most common and/or dangerous diseases that can be transmitted to humans via foodstuffs of animal origin are as follows:

– *Salmonella*

– *Campylobacter*

– verotoxinogenic *Escherichia coli*, including *Escherichia coli* O157:H7

– *Listeria monocytogenes*

– *Toxoplasma*

– *Leptospira*

– *Coxiella burnetii* (Q fever)

– *Brucella*

– *Mycobacterium* (tuberculosis)

– *Yersinia enterocolitica*

– prions (bovine spongiform encephalopathy agent, etc.)

– parasites such as *Taenia solium, Taenia saginata* and *Trichinella spiralis.*

While these pathogens arouse the greatest concern among consumers and governments in terms of food safety, the diseases they cause are also the most difficult to prevent at

the farm level as they can also be transmitted by warm-blooded animals, such as birds, crawling or flying insects and even by water or the soil.

### Chemical and physical hazards

These hazards chiefly consist of the following:

– drug residues (notably antibiotics)

– growth promoters (some unauthorised hormones, substances having a thyrostatic action and anabolic substances)

– residues of chemical products used on the farm (pesticides, disinfectants, etc.)

– environmental contaminants (dioxins, polychlorinated biphenyls [PCBs], polyaromatic hydrocarbons [PAHs], heavy metals, radioactive isotopes, etc.)

– foreign bodies (needles, fragments of glass, pieces of plastic or metal, etc.).

In the majority of cases, the action needed at the farm level to reduce or eliminate the risk presented by these chemical and physical contaminants is, in comparison to that needed to control biological risks, easier to implement.

The remainder of this document recommends actions to reduce the risks that the occurrence of these hazards at farm level poses for public health.

## Buildings and other farm facilities: surroundings and environmental control

### Hazards

These consist of pathogenic biological agents (e.g. certain species of *Leptospira, Salmonella, Trichinella, Legionella,* etc.), chemical agents (e.g. dioxins, pesticides, hydrocarbons, etc.) or physical agents (e.g. radioisotopes) which can be a direct (air-borne or feed-borne) or indirect (notably via water and feedstuffs) source of contamination for animals. Problems can occur as a result of hazards found in the farm's immediate surroundings or as a result of a failure to control the environment in livestock buildings.

### Recommendations

To minimise hazards coming from the farm's immediate surroundings the following steps should be taken:

– avoid conducting farming activities close to industrial plants likely to be a source of pollution (e.g. domestic waste incineration plant releasing dioxins, surface processing plant releasing solvents or heavy metals, etc.) or in an environment susceptible to air-borne pollution (e.g. near a road with heavy motor traffic – emissions of lead and hydrocarbons), soil pollution (former industrial site or site where dumping of toxic substances has taken place) or the proliferation of pests (e.g. open municipal rubbish tip);

– site farm buildings or other facilities (e.g. in the case of extensive husbandry) so that they are independent of private buildings (residential accommodation), sufficiently far away from areas where waste materials are stored, and so that access by visitors can be effectively controlled (direction signs or 'access prohibited' signs where necessary);

– site farm buildings or other facilities away from buildings on neighbouring farms that are used for purposes which could increase the risk of disease transfer;

– if necessary, seek the advice of the relevant competent authorities (e.g. Veterinary Services, Environmental Services, etc.).

To minimise hazards arising from a failure to control the environment in livestock buildings such buildings should be designed as follows:

– adequate in size and correctly ventilated

– with a rational arrangement of the premises (separation of clean and soiled areas, absence of any intersection of production chains, separation of working areas and storage areas from animal production areas)

– allowing animals to be dealt with in single groups (poultry, pigs) and newly arrived (quarantine) or sick animals (observation pen) to be satisfactorily isolated

– allowing easy, complete and effective cleaning and disinfection

– correctly isolated from pests and from wild or stray animals, and from other domestic animals as appropriate

– allowing easy, rational and effective evacuation of excreta

– suitably equipped for the collection of farm effluents and wastewater

– keeping the immediate surroundings clear and free from stagnant water and anywhere that could harbour pests, and arranged so as to allow easy disinfection of areas used by professional visitors (veterinarian, animal or feed deliverers, milk or egg collectors, carcass disposal agents, etc.)

– so as to make access difficult for unauthorised persons or vehicles (barriers, fences, signs)

– taking into account the risk of natural disasters (flooding, landslides, heat waves, prolonged freezing conditions, earthquake, etc.)

– using inert construction and surface materials that cannot be a potential source of contamination (e.g. prohibit the use of lead paint)

– if necessary, seek the advice of a veterinarian, para-veterinarian or an official with the relevant competent authority.

# Health conditions for introduction of animals into the farm

## Hazards

These consist of biological agents (pathogenic bacteria, viruses, parasites, etc.) that can be introduced into herds and flocks by animals that do not have all the necessary health guarantees.

## Recommendations

– Introduce into the farm only animals from farms at which this guide has been implemented

– introduce only animals of known health status (for example regarding tuberculosis, brucellosis, leptospirosis, vibriosis, salmonelloses and cryptosporidiosis), in accordance with the provisions adopted by the competent authority (Veterinary Services)

– ensure that all the animals introduced are correctly identified (tagged or marked) and that their identification does indeed correspond to the accompanying health documents

– obtain from the seller full details of the route taken by the animals being introduced, from the hatchery, apiary, herd or flock of origin to their destination

– control the sanitary conditions under which the introduced animals are transported: ensure that the deliverer has a suitable vehicle and implements an effective cleaning and disinfection programme for the vehicle, so as to reduce the risk of transmitting pathogens between production units or farms

– obtain a declaration from the seller regarding any chemical residues that might be present due to the introduced animal's having recently been treated

– refuse any introduction of animals presenting suspicious clinical signs on delivery and, if necessary, inform the competent authority (Veterinary Services) if a contagious disease is suspected

– record full details of the purchased animals: description, identification, sex, age, health status, date of introduction, name and address of the seller and of the attending veterinarian, etc.

– isolate the newly introduced animal(s) for a suitable surveillance and acclimatisation period

– arrange for a veterinarian or para-veterinarian to perform any necessary biological tests when the animals are introduced and isolated, and do not bring these animals into contact with other animals on the farm until the results of these tests are known and have proved satisfactory.

# Animal feeding

## Hazards

These consist of biological agents (bacteria, viruses, prions, parasites, antibiotics, promoters, phytotoxins or mould toxins), chemical agents (farm chemicals [pesticides], dioxins, heavy metals, environmental contaminants, etc.) or physical agents (foreign bodies, etc.) which could be present in animal feed and, consequently, in animal products (milk, meat, fish, egg products, etc.). Risks may also result from an overdosage of certain components, notably medication, in animal feed.

## Recommendations

The use of veterinary drugs as supplements in animal feeding is discussed in the section below entitled 'Veterinary drugs'.

### Grassland and pasture

– Carry out a risk assessment when livestock are put out to pasture outside the farm: in particular, ensure that the land where the animals are put out to pasture is not exposed to potential sources of chronic contamination (e.g. main road with heavy traffic, domestic waste incineration plant), is not polluted with chemical residues (e.g. pesticides, dioxins, heavy metals) at an unacceptable level and is not known to harbour animal pathogens (bacteria, e.g. anthrax spores; parasites, e.g. flukes);

– ensure that the fields surrounding the pasture are not sprayed with substances that have not been shown to be safe, and that the animals cannot have access to potentially contaminating material on the perimeter of the pasture (e.g. unauthorised dumping, stocks of herbicides, posts coated with aluminium paint);

– carefully follow the manufacturer's instructions shown on the label before spreading any chemical product on fields, pastures or in grain silos;

– respect the recommended waiting times before animals are put out to pasture after the pasture or neighbouring pieces of land have been treated with agricultural chemicals;

– comply with recommendations for the use of animal by-products for agricultural reclamation/spreading;

– prevent livestock entering pastures containing toxic plants;

– when purchasing pasture or other land, require certification for the land in question regarding previous use of agricultural inputs or any chemical pollution (e.g. resulting from the dumping of industrial waste). Where necessary, have a soil study carried out to detect the presence of any toxic chemicals.

## Use of commercial feed

– Require that all the animal feed purchased is free of chemical residues and complies with regulatory requirements (obtain, if this is not stated on the label, a certificate guaranteeing that it complies with the regulations)

– check that the feed delivered is correctly labelled (manufacturer's name, composition, manufacturing date, use-by date, instructions for use and precautionary measures to be followed, batch number, etc.) and that the packaging is intact and without any defect that might have affected the contents

– check the quality of the feed delivered in terms of appearance (visual examination) and keep a written record of the results

– refuse, treat appropriately or destroy any feed presenting traces of contamination by mould

– ensure that feed for ruminants is free from any trace of animal by-products prohibited by the regulations and eliminate any risk of accidental cross-contamination

– keep samples of purchased feed for any subsequent analytical testing should a problem of residues be identified at the farm production level

– store feed in a clean area, protected from humidity and pests (insects and rodents)

– if storage conditions are not optimal, prefer more frequent deliveries of smaller quantities

– keep an up-to-date register of feed delivered and used (batch numbers, date used and destination)

– seek advice if there is the slightest doubt as to the quality of the feed given to animals

– when a problem exists, immediately inform the supplier and, if necessary, the competent authorities.

## Manufacture of animal feed on the farm

– Check the quality of the raw materials delivered in terms of their appearance (visual examination, to rule out any risk of macroscopic contamination) and keep a record of the findings

– ensure that all the raw materials of plant origin used as ingredients for animal feed have been grown, stored and treated using validated procedures

– keep an up-to-date register of the raw materials delivered and used (batch numbers, dates used, batch numbers of the feed in which they were used)

– store the raw materials in a clean area, protected from humidity and pests (insects and rodents)

– eliminate raw materials presenting traces of contamination with mould

– ensure that the water used is potable

– comply with the recommendations regarding storage (in a safe place) and the use of additives and feed supplements (always follow the recommendations on the label regarding dosage and withdrawal periods)

– ensure uniform mixing of the different components

– eliminate any risk of cross-contamination, at all stages (production, storage and distribution)

– have clearly defined written procedures for the manufacture of feed, fixing precisely the formulation and production stages, and, in particular, making provision for mixers to be purged between the production of two types of feed with different ingredients

– regularly check and calibrate weighing machines

– plan corrective actions to be implemented in the event of a formulation error and actions to deal with substandard batches that might constitute a hazard

– keep, and file for as long as necessary, up-to-date manufacturing records specifying the dosage and batch number(s) of each of the raw materials used

– keep samples of manufactured feed for subsequent analytical testing should a problem of residues be identified at the farm production level

– set a use-by date for each batch of manufactured feed, taking into account the use-by dates of each of the ingredients and the packaging and storage conditions

– correctly label the sacks or hoppers containing the manufactured feed (date of manufacture, feed type, batch number, use-by date)

– store the manufactured feed in a clean place, protected from humidity and pests (insects and rodents)

– in the case of bulk feed, do not mix two batches of feed in the same container (separate hoppers)

– have the composition of the manufactured feed checked at least once a year (correct dosages of the various ingredients, presence of any contaminants)

– keep an up-to-date register of feed delivered and used (batch numbers and dates of use)

– seek advice if there is the slightest doubt as to the quality of the manufactured feed

– when a problem occurs that could affect the safety of animal products, inform the competent authorities immediately.

### General recommendations on animal feeding

– Avoid overfilling the animals' feeding troughs (fill them twice rather than once, adapt the quantity of feed to the specific requirements of the animals)

– remove any unused feed from the troughs before refilling

– clean the troughs and automatic feeders regularly

– ensure animals are fed with feed suitable for the species.

# Animal watering

## Hazards

These are basically of two types: microbiological and chemical.

### Microbiological hazards

These consist of:
– pathogenic bacteria, e.g. toxic strains of *Escherichia coli* (e.g. *E. coli* O157:H7), *Salmonella* spp., *Vibrio cholerae* and *Shigella* spp.

– viruses, e.g. small round structured viruses (Norwalk virus) and the hepatitis A virus

– parasites, e.g. pathogenic protozoa such as *Cryptosporidium parvum, Giardia lamblia* and *Cyclospora cayetanesis*, and eggs and larvae of nematoda, cestoda and trematoda.

Microbiological hazards are most frequently caused by human waste and animal excreta, which may contaminate the water supply used for livestock.

### Chemical hazards

These consist of farm chemicals (e.g. pesticides, nitrates/nitrites), industrial contaminants (e.g. dioxins, PAHs, heavy metals), or the water supply network itself (e.g. lead piping).

These chemical agents may eventually be found in animal products (milk, meat, egg products, aquaculture products, apiculture products, etc.) as a result of the animals drinking this water.

## Recommendations

– Veterinary drugs as supplements in animal watering should be administered in accordance with the next section – 'Veterinary drugs'

– prevent, by means of barriers or fences, domestic or wild animals approaching safe water reserves or watering points and polluting them

– prevent, by means of barriers or fences, livestock approaching polluted water reserves or watering points and contaminating themselves

– protect water reserves from contamination by undesirable substances, and specifically:

*a*) use chemicals and organic substances with great care (comply with doses and minimum distance requirements), notably near water collection points, streams and ditches

*b*) always follow the manufacturer's instructions (see label) for the use of any chemical product for spraying or fumigating (how to apply, dosage and waiting time)

*c*) avoid using pesticides and herbicides anywhere where there is a possibility of contaminating the water table or nearby water collection points

*d*) avoid cleaning spraying equipment or chemical product containers in places where any remaining substances and the flushing water can re-enter the water supply network

*e*) avoid spreading slurry, manure or dairy effluents where there is any possibility of their contaminating the water table or nearby water collection points

*f*) avoid human and animal effluent being a source of contamination

– monitor compliance of, maintain and regularly clean water distribution systems. Use closed-circuit systems whenever possible, so as to reduce access by other animals

– have the bacteriological and physico-chemical quality of water regularly tested, where appropriate (e.g. bore-hole), and ask to receive the results of analyses conducted on water in the local water supply network

– seek advice and test the water resources if there is the slightest doubt about the safety of water used for animals.

# Veterinary drugs

## Hazards

These consist of the inappropriate use of both veterinary drugs (which may induce the presence of residues in food products) and antibiotics (which may induce the creation of multi-resistant bacterial strains, which can pose a major threat to public health).

## Recommendations

– Any therapeutic treatment should only be undertaken when the diagnosis is precise and certain, and should be based on the dual principle of maximum efficacy and minimum risk;

– use only drugs that are authorised for the treatment of the particular species, and use antimicrobials only on veterinary prescription and as prescribed;

– use drugs in accordance with the species, uses and doses indicated on the label, and in accordance with the instructions on the label or on the advice of a veterinarian well acquainted with the animals and the production site;

– use only drugs that are known to be effective for the intended use and in strict compliance with the recommendations on the label or the veterinarian's prescription;

– do not use veterinary drugs beyond their expiry date;

– use weighing machines, animal measuring tape or other suitable measuring instruments to evaluate the weight of the animals and adjust the dose to be administered (avoid any overdosage);

– wherever possible, isolate sick animals from healthy animals, so as to avoid the transfer of resistant bacteria, and treat animals individually;

– strictly observe the recommended withdrawal periods so as to guarantee that residue levels in food of animal origin do not present any risk to the consumer, on the understanding that any drug likely to result in residues must be prescribed by a veterinarian;

– use the appropriate techniques and equipment to administer drugs, and avoid any accidental contamination of the product by thoroughly cleaning equipment, such as buckets. Change the syringe for each new drug and, if appropriate, the needle for each animal;

– in the event of the injection needle breaking in the animal's muscle tissue, place an indelible mark on the injection site, note the identification number of the animal and record the problem in a written document which will accompany the animal to the abattoir;

– keep a written record of all treatments dispensed to the animals, and keep all the laboratory reports, including bacteriological tests and sensitivity tests;

– keep up-to-date records of the use made of veterinary drugs on the farm, including the following information (all of which should be placed at the disposal of the competent authority [Veterinary Services]):

*a*) name of the product or active substance, and the batch number

*b*) supplier's name

*c*) dates of administration and date of end of treatment

*d*) identification of the animal (or group of animals) to which the drug was administered

*e*) diagnosis or clinical signs treated

*f*) quantity of the drug administered and the administration route (if transcutaneous, state the injection site)

*g*) withdrawal periods (dates from which milk, meat or any other animal product can be offered for human consumption)

*h*) results of laboratory tests

*i*) effectiveness of the therapy

– develop rational stock management procedures for drugs, in particular vaccines and medicated premixes (keep an up-to-date record of stock movements);

– ensure that the conditions under which antimicrobials and other veterinary drugs are stored on the farm comply with the label and insert instructions (in particular provide a safe place [cabinet in a locked room], where they can be stored in the dark and at the recommended temperature);

– safely dispose of all veterinary drugs past their expiry date, instruments and empty containers in an environmentally friendly manner.

# Farm management

## Hazards

These consist of pathogenic biological agents which can be introduced onto a farm and proliferate due to lack of respect for basic farm management rules. These can also consist of chemical contaminants. Both biological agents and chemical contaminants can induce subsequent contamination of animals and their products.

## Recommendations

### Training, conduct and health status of staff

– Provide suitable training for staff required to handle farm chemical inputs, manufacture feed on the farm, clean and disinfect premises and equipment and treat animals. Appropriate training will give them a good knowledge of hazards present on the farm and methods of managing risks so as to guarantee the safety of food products of animal origin;

– train staff in basic biosecurity principles and practices to minimise the likelihood of introducing or spreading pathogens;

– insist that staff wear suitable working attire (clothing and boots that are kept clean or changed as often as necessary) and respect sanitary measures (e.g. changing clothes, washing hands or showering) before they enter controlled areas;

– ensure that staff are regularly monitored to detect any healthy carriers of bacterial or parasitic agents that could be transmitted to animals.

### Maintenance, cleaning and disinfection of equipment, premises and immediate surroundings

– Develop and implement the appropriate procedures to maintain, clean and disinfect farm equipment, premises and immediate surroundings, respecting the manufacturer's instructions regarding the use of detergents and disinfectants (preparation of surfaces, dilution, contact period)

– ensure that the procedures in place are effective (visual self-inspections with, if necessary, recourse to bacteriological analysis) and take any corrective measures that may be required

– use clean instruments so as to avoid spreading diseases.

### Measures to control pests and stray animals and prevent unauthorised access

– Develop and implement a global plan to control pests (rodents, insects, spiders) within the farm, using licensed products in the appropriate manner

– ensure the effectiveness of this control plan (visual self-inspections) and take any corrective measures that may be required

– prevent domestic animals (cats and dogs) from roaming in and around livestock buildings

– put in place all the appropriate prevention and control measures, respecting the regulations currently in force in terms of protection of biodiversity, so as to minimise contact between livestock and wild animals

– ensure that no unauthorised person can enter the livestock buildings.

### Stock management (feed, drugs)

– Ensure that there is a satisfactory turnover of stock, applying the first in first out method, and disposing of any product that has passed its expiry date

– ensure that all containers (sacks or cans) are hermetically sealed

– ensure that storage conditions are appropriate and in particular that the recommended temperatures are respected.

### Management of waste materials, effluents and expired products

– Ensure that the waste materials generated by the farm (excreta, feed remains, etc.) are regularly removed, in such a way that neither their transport to the storage site nor the conditions under which they are stored can be either a source of environmental contamination for the farm and its immediate surroundings or conducive to the proliferation of pests (rodents, insects)

– ensure that products that have passed their expiry date (farm chemical inputs, veterinary drugs) and their packaging are disposed of, and effluents (wastewater, washing water) treated, in such a way that they cannot be a source of environmental pollution, and, indirectly, of contamination for the animals.

### Storage of chemical products

Store chemical products and equipment that may contain them safely out of reach of the animals.

### Production monitoring of animals

– Ensure that the animals or groups of animals present on the farm are permanently identified and keep the farm records up-to-date

– minimise mixing of animals of different species

– conduct daily surveillance of the animals to detect any anomaly or suspicious symptom

– set up a system for monitoring the production performance of the animals and identify indicators that will allow the early detection of any anomaly.

### Health monitoring of animals and disease prevention programmes

– Develop, in conjunction with the veterinarian in charge of the animals, an animal health and welfare plan that includes disease prevention measures (e.g. mastitis programme, vaccination and deworming programmes, etc.)

– implement this health plan, following the guidelines issued by the competent authority for animal disease control (Veterinary Services), with the advice of a veterinarian or para-veterinarian

– treat animals regularly against gastrointestinal parasites

– seek professional advice in the event of unusual clinical signs suggestive of a disease in the herd/flock or if there is an unexpected drop in the yield or quality of animal products

– establish written standardised operational procedures for the detection and management of animal diseases and for the use of veterinary products

– inform the veterinarian responsible for monitoring the health of the animals of any problems of disease recurrence or relapses

– take advantage of all the information obtained at the abattoir during ante-mortem inspections of animals and post-mortem inspection of meat and offal by official veterinarians relating to specific pathologies for which corrective measures can be taken at the farm level (parasitism, muscular degeneration, melanosis, presence of foreign bodies [e.g. cactus spines], etc.)

– determine whether fallen stock and dead animals need to be tested as part of an official surveillance programme.

### Animal movements

Ensure that any isolated or seasonal movement of animals outside the farm (transhumance, grazing on mountain pasture, etc.) does not expose them to an excessive risk of chemical or microbiological contamination, whether by air-borne route, digestive route or direct or indirect contact with wild animals.

### Isolation of sick animals and their products

– Separate sick or potentially sick animals from healthy animals so as to avoid the transfer of pathogenic agents and resistant bacteria

– comply with hygiene regulations relating to contacts between persons (veterinarians, livestock producers, owners, children) and animals undergoing treatment

– ensure that products from sick animals cannot be used for human consumption or for animal feed.

### Storage and disposal of dead animals

– Isolate the dead animals prior to their collection or destruction, and store them in a suitable place (easy access and disinfection) so as to avoid any contact with livestock or their environment

– ensure that the dead animals that have died on the farm are rapidly disposed of and ensure that their removal by a carcass disposal firm cannot be a source of pathogens for the farm.

## Preparation of animals for slaughter

### Hazards

These consist of numerous potentially dangerous agents for humans which are present in the digestive tube or excreta, and on the hides and skins of cattle and sheep or the plumage of birds in good health. These agents include *E. coli, Salmonella* and *Campylobacter*, which can cause food poisoning in humans.

Stress caused by grouping animals together, loading them and transporting them to the abattoir can promote the passage of these pathogenic bacteria from the intestine into muscle tissue.

Moreover, the greater the faecal soiling of hides, skins and feathers, the higher the risk of any pathogenic bacteria they may contain contaminating meat during the dressing or defeathering of carcasses at the abattoir.

### Recommendations

#### General measures

– Ensure that animals are fit for slaughter

– prevent animals from becoming soiled by keeping the enclosures, gangways, and loading and unloading areas clean, avoiding overcrowding, increasing the quantity of litter and resolving any problems of effluent disposal

– give animals raised in livestock buildings free access to straw, hay and silage with a high dry matter content for 48 h prior to slaughter

– avoid any abrupt changes in diet at the end of the production cycle

– give animals free access to watering points up to their departure for the abattoir and withdraw feed from animals for the 24 h prior to slaughter

– handle animals humanely and do not subject them to undue stress, given that stressed animals are more likely to release pathogenic bacteria, especially *E. coli* O157:H7, in their excreta

– check the state of the animals' identification marks and bands several days before they are due to leave so as to avoid having to tag the animals immediately before they are transported to the abattoir

– ensure that the conditions under which the animals are transported to the abattoir are not a source of stress and are not conducive to substantial soiling of their hides, skins or plumage.

### Extensively grazed livestock

Weather conditions prior to departure (e.g. heavy rainfall) and the absence of any special measures to avoid watering points becoming a quagmire can lead to considerable soiling of ruminants (cattle, sheep, goats) and omnivores (pigs) before their departure to the abattoir. Furthermore, gathering animals together prior to their transport is an operation that causes stress, especially for animals that have ranged freely all year round in the open and are unused to the presence of humans.

It is therefore important to ensure that:

– animals at the end of the fattening phase are placed in pastures that are the least prone to the effects of inclement weather, with watering points that are sufficient in number and arranged in such as way as to avoid the animals becoming soiled with mud

– the animals are brought together a sufficient length of time before their departure to the abattoir, in an enclosure, preferably covered, or other suitable area, so as to minimise the risk of major soiling of their hides, skins, wool or plumage.

### Livestock housed on slatted flooring

The correct stocking density of feedlots and enclosures (density per square metre) throughout the fattening phase is an important consideration, as overcrowding, like under-population, prevents the satisfactory evacuation of excreta between the slats.

It is therefore important to ensure that:

– the correct stocking density is maintained for as long as possible during the fattening phase (the density depends on the size and nature of the stalls, as well as on the age of the animals)

– the slatted flooring is kept satisfactorily clean and that the housing is correctly ventilated

– particular attention is given to the cleaning operations conducted just before the departure of the animals for the abattoir

– wherever possible, cattle are kept on straw bedding for 1 to 20 days before slaughter.

### Livestock housed on litter

The density of animals housed on litter has a significant effect on the cleanliness of the hides. The addition of extra litter will not counteract the adverse effects of over-stocking. The amount of litter required depends on factors such as the density of animals, their weight and the design of the building.

It is therefore important:

– to avoid over-stocking

– to provide an adequate supply of clean litter as often as is necessary

– to ensure that the premises are adequately ventilated and correctly arranged for the evacuation of effluent and cleaning water.

### Health measures

– Isolate sick animal in suitable premises, treat them and wait until they have fully recovered before sending them to the abattoir

– check the treatment records of all the animals before they leave so as to ensure that the withdrawal periods or pre-slaughter confinement periods have indeed been respected

– withdraw from the batch being sent to the abattoir any animal whose health status is in doubt and any animal that is still in the withdrawal period following the administration of medication.

## Common measures for record keeping and traceability

An identification and traceability system for animals, their feed and products leaving the farm can help:

– to identify the true source of a problem of contamination of products of animal origin

– to implement measures to eliminate, or at least limit, any harmful consequences (such as by the targeted withdrawal of the products in question).

A complete and reliable system of recording procedures, actions and controls implemented on the farm can assist the genuine and effective control of the risks that primary production represents for food safety. It can also assist livestock owners to prove that they have fully carried out their public health responsibilities.

## Recommendations

### Traceability of animals, animal feed and animal products

– For each animal or group of animals, require and keep all commercial and health documents enabling their exact itinerary to be traced from their farm or establishment of origin to their final destination (other farm or abattoir)

– establish a data-recording system that can be used to ascertain exactly which batches of commercial feed the farm's livestock were fed with and what raw materials were used in feed manufactured on the farm and given to the animals. Keep samples of all the feed used

– establish a data-recording system that can be used to ascertain the exact origin (animal batch) and destination of animal products produced by the farm

– keep all these documents and records and place them at the disposal of the competent authority (Veterinary Services).

### Record keeping

– Keep a record of all persons entering the farm: visitors, service staff and farm professionals (veterinarian, milk tester, inseminator, feed deliverer, carcass disposal agent, etc.)

– keep the medical certificates of persons working in contact with animals and any document certifying their qualifications and training

– keep, for each animal or group of animals, all documents relating to the treatment and veterinary actions it has undergone (castration, calving, caesarean section, dehorning, debeaking, administration of medication, etc.)

– keep all laboratory reports, including bacteriological tests and sensitivity tests (data to be placed at the disposal of the veterinarian responsible for treating the animals)

– keep all documents proving that the bacteriological and physico-chemical quality of the water given to the animals is regularly tested

– keep all records of all feed manufacture procedures and manufacturing records for each batch of feed

– keep detailed records of any application of chemical products to fields, pastures and grain silos, as well as the dates that animals are put out to grass and on which plots of land

– keep all the records relating to the cleaning and disinfection procedures used in the farm (including data sheets for each detergent or disinfectant used) as well as all the records showing that these procedures have effectively been implemented (job sheets, self-inspection checks on the effectiveness of the operations)

– keep documents relating to the pest control plan (including the data sheets for each raticide and insecticide used) as well as all the records showing that the control plan has effectively been implemented (plan showing the location of baits and insecticide diffusers, self-inspection checks on the effectiveness of the plan)

– keep all the documents relating to self-inspections (by the livestock producer) and controls (by the authorities and other official bodies) relating to the proper management of the farm and the sanitary and hygienic quality of the animal products leaving it

– keep all documents sent by the official inspection services (distributors or the quality control departments of food-processing firms) relating to anomalies detected at the abattoir, dairy, processing plant or during the distribution of products (meat, eggs, milk, fish, etc.) derived from the farm's animals

– ensure that all these documents are kept long enough to enable any subsequent investigations to be carried out to determine whether contamination of food products detected at the secondary production or distribution stage was due to a dysfunction at the primary production level

– place all these documents and records at the disposal of the competent authority (Veterinary Services) when it conducts farm visits.

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# Guide des bonnes pratiques d'élevage pour la sécurité sanitaire des aliments d'origine animale en phase de production

Groupe de travail de l'OIE sur la sécurité sanitaire des aliments d'origine animale en phase de production

**Résumé**
Il est désormais admis que la sécurité sanitaire des aliments est l'une des priorités de la santé publique. Elle requiert une approche globale, allant de la ferme à l'assiette. Cet article aborde la première phase de la chaîne alimentaire et les mesures que les éleveurs peuvent adopter pour mieux contrôler la sécurité sanitaire des produits d'origine animale. Cela implique, bien évidemment, de contrôler le statut sanitaire des animaux dont sont issus ces produits. L'article examine l'ensemble des risques qu'un contrôle efficace au niveau de la ferme peut parvenir à maîtriser, avec un effet bénéfique, voire décisif sur la sécurité sanitaire des produits alimentaires d'origine animale (incluant le lait et les produits laitiers, la viande et les produits carnés, les œufs et les produits dérivés, le miel et les produits de l'apiculture). L'article comprend huit sections, consacrées respectivement aux bâtiments et aux installations, aux conditions sanitaires de l'accès des animaux à la ferme, à l'alimentation animale, à l'abreuvement, aux médicaments vétérinaires, à la gestion de l'exploitation, à la préparation des animaux avant l'abattage et aux mesures relatives à la tenue de registres et à la traçabilité.

**Mots-clés**
Élevage – Gestion de l'exploitation – Phase de production – Pratique d'élevage – Production animale – Sécurité sanitaire des aliments.

# Guía de buenas prácticas ganaderas para la seguridad sanitaria de los alimentos derivados de la producción animal

Grupo de Trabajo de la OIE sobre Seguridad Sanitaria de los Alimentos Derivados de la Producción Animal

**Resumen**
En todas partes del mundo, la seguridad sanitaria de los alimentos se ha convertido en una de las prioridades de la salud pública. Para garantizarla es preciso utilizar un método global, aplicable desde la granja hasta la mesa. En este artículo se examinan la primera etapa de la cadena alimentaria y las medidas que pueden tomarse para mejorar al máximo posible el control sanitario de los productos de origen animal. Estas incluyen, forzosamente, el control del estado sanitario de los animales destinados a la producción de alimentos. También se analizan todos los peligros cuyo control en los criaderos puede ser

beneficioso, e incluso decisivo, para la seguridad sanitaria de los alimentos de origen animal (incluidos la leche, la carne, los huevos, la miel y sus subproductos). La Guía comprende ocho secciones dedicadas a los locales y demás instalaciones, las condiciones sanitarias de los animales para introducirlos en un criadero, la alimentación animal, los abrevaderos, los medicamentos veterinarios, la gestión de las explotaciones, la preparación de los animales para la matanza y las medidas usuales relativas a los registros y la trazabilidad.

**Palabras clave**
Cría – Gestión de las explotaciones – Nivel de producción – Práctica pecuaria – Producción animal – Seguridad sanitaria de los alimentos.

# Appendix

## Other material related to international food safety standards

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World Organisation for Animal Health (OIE) (2005). – Terrestrial Animal Health Code, 14th Ed. OIE, Paris. Available at: http://www.oie.int/eng/normes/en_mcode.htm (accessed on 2 January 2006). In particular the following chapters and appendices:

– Chapter 1.1.1. General definitions

– Chapter 1.3.3. Evaluation of Veterinary Services

– Chapter 1.3.4. Guidelines for the evaluation of Veterinary Services

– Appendix 3.4.1. Hygiene and disease security procedures in poultry breeding flocks and hatcheries

– Appendix 3.4.2. Hygiene and disease security procedures in apiaries

– Appendix 3.4.3. Hygiene precautions, identification, blood sampling and vaccination

– Appendix 3.6.1. General recommendations on disinfection and disinsectisation

– Appendix 3.7.2. Guidelines for the transport of animals by sea

– Appendix 3.7.3. Guidelines for the transport of animals by land

– Appendix 3.7.4. Guidelines for the transport of animals by air

– Appendix 3.9.1. Guidelines for the harmonisation of national antimicrobial resistance surveillance and monitoring programmes

– Appendix 3.9.2. Guidelines for the monitoring of the quantities of antimicrobials used in animal husbandry

– Appendix 3.9.3. Guidelines for the responsible and prudent use of antimicrobial agents in veterinary medicine

– Appendix 3.9.4. Risk assessment for antimicrobial resistance arising from the use of antimicrobials in animals.