GUIDE TO GOOD FARMING PRACTICES
FOR ANIMAL PRODUCTION FOOD SAFETY

GUÍA DE BUENAS PRÁCTICAS GANADERAS
PARA LA SEGURIDAD SANITARIA DE LOS ALIMENTOS DE ORIGEN ANIMAL

GUIDE DES BONNES PRATIQUES D'ÉLEVAGE
VISANT À ASSURER LA SÉCURITÉ SANITAIRE DES DENRÉES D'ORIGINE ANIMALE

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ORGANIZACIÓN DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y LA ALIMENTACIÓN
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE

WORLD ORGANISATION FOR ANIMAL HEALTH
ORGANIZACIÓN MUNDIAL DE SANIDAD ANIMAL
ORGANISATION MONDIALE DE LA SANTÉ ANIMALE

Rome, 2009

ISBN 978-92-5-006145-0

GUIDE TO GOOD FARMING PRACTICES FOR ANIMAL PRODUCTION FOOD SAFETY

Introduction

Food safety is universally recognised as a public health priority. It requires a holistic approach, from production to consumption.

This Guide is intended to help Competent Authorities to assist stakeholders, including farmers, to fully assume their responsibilities at the animal production stage of the food chain to produce safe food. Good farming practices should also address socioeconomic, animal health and environmental issues in a coherent manner.

The recommendations in the Guide complement the responsibilities of the Competent Authorities at the farm level, in particular those of the Veterinary Services, and are intended to assist in developing on-farm quality assurance systems for animal product food safety. This document complements existing OIE, FAO and Codex Alimentarius Commission (Codex) texts aimed at addressing animal health and welfare, socioeconomic and environmental issues related to farming practices. The bibliography lists the most relevant documents and publications.

To assist the Competent Authorities an indication is given at the end of the Guide on the steps to be taken to implement the recommendations.

Hazards

Many aspects of animal production are at risk from biological, chemical (including radionuclide) and physical agents. These agents may enter food-producing animals or animal products through a wide variety of exposure points in the food chain, with consequent potential risks for consumers.

A table listing the main agents (hazards) that may have an adverse effect on a farming system and indicating the corresponding control points is presented at Appendix 1. Hazards are categorised as biohazards, chemical hazards and physical hazards.

It would not be possible to list all the possible hazards here. The aim of the Guide is rather to describe, in very broad terms, a set of generic good farming practices intended to minimise hazards.

Recommended good practices to address the listed hazards are considered under the following headings:

1. General farm management
2. Animal health management
3. Veterinary medicines and biologicals
4. Animal feeding[1] and watering
5. Environment and infrastructure
6. Animal and product handling

[1] In this document, 'feed' includes all animal feedstuffs, ingredients, additives and supplements as defined in the Codex Alimentarius Commission Code of Practice on Good Animal Feeding (CAC/RCP54 -2004).

Recommended good practices

1. GENERAL FARM MANAGEMENT

A number of common themes run through all levels of farm management and recur often in the principles elaborated below. They are:

1.1 Legal obligations

Farmers should be aware of, and comply with, all legal obligations relevant to livestock production, e.g. disease reporting, record keeping, animal identification and carcass disposal.

1.2 Record keeping

When a problem arises in an enterprise, be it a disease, a chemical hazard issue or a physical safety matter, record keeping is central to any effort to trace the source of the problem and eliminate it. Hence, as far as is practicable, farmers should keep records of:

- All animal populations on the farm (groups or individuals as relevant).
- All animal arrivals, including their identification marks or devices, origin and date of arrival, to ensure that movements of incoming animals are traceable to their source.
- Movements of animals around the enterprise.
- Changes to feeding or health regimes, and any other management changes that may occur.
- Origin and use of all feeds, drugs, disinfectants, herbicides and other consumable items used on the farm.
- Known diseases/infections, diseased/infected animals and mortalities, as far as possible giving details such as dates, diagnoses (where known), animals affected, treatments and results.

1.3 Animal identification

Animal identification and the ability to trace animals have become important tools to ensure food safety and improve management. Identification of animals may be on an individual or group basis, and connections between properties as a result of animal movements should be able to be deduced from good record keeping and animal identification.

Where a food safety incident occurs, it should be possible to determine the source of the problem and to take appropriate action.

The ability to trace animals at least one step forward and one step back from the current holding is recommended.

1.4 Hygiene and disease prevention

Measures aimed at preserving cleanliness, preventing pathogen build-up and breaking possible pathways of transmission are essential in the management of any modern farming enterprise, regardless of the species or the farming system.

While the use of animal manure, animal slurry and human sewage sludge for fertiliser purposes is becoming increasingly common, enabling higher crop yields as well as sensible waste management, it may facilitate the transmission of food-safety-related diseases within or between herds or directly to humans. Therefore systems for animal or human waste usage for fertiliser purposes should take into consideration relevant treatment methods as well as specific holding times before animals are allowed onto treated pastures. Suggested holding times are directly related to climatic conditions in the region in question (e.g. die-off of pathogens is faster at higher temperatures). As a general rule, neither animal nor human waste should be used on plants intended for direct human consumption unless it has been appropriately treated.

Precautions should aim at:

- Reducing contact between healthy animals and potentially infected animals.
- Maintaining the hygiene and safety of all facilities.
- Ensuring the health of all workers on the farm and the implementation of hygienic working procedures.
- Taking all appropriate measures to prevent contamination by vehicles entering and traversing the property.
- Minimising contact between livestock and professional or other visitors, and taking all hygienic measures necessary to reduce the possible introduction of pathogens and contaminants.
- Ensuring overall health of livestock through good nutrition and reducing stress.
- Maintaining an appropriate population density for the species and age group in question, either by following locally enforceable measures or by obtaining appropriate advice from recognised experts.
- Keeping records of animal populations in facilities/on farms.

1.5 Training

Husbandry measures and techniques are ever-changing. Competent Authorities are encouraged to assess training needs amongst stakeholders and promote necessary training. This would contribute to the commitment to, and effective execution of, all practices described in this Guide.

Farmers and farm managers should:

- Actively seek and use relevant training opportunities for themselves and their workers.
- Be aware of any training courses that may be compulsory in their countries and regions.
- Keep records of all training undergone.

2. ANIMAL HEALTH MANAGEMENT

2.1 Addressing biohazards

As a general principle, closed farming systems and all-in all-out systems are recommended from a food safety and biosecurity point of view.

Owners or managers of livestock should:

- Establish a working relationship with a veterinarian to ensure that animal health and welfare and disease notification issues are addressed.
- Seek veterinary assistance to immediately investigate any suspicion of serious disease.
- Comply with regulations concerning restrictions on animal movements.

- Separate diseased from healthy animals such that transmission of infection does not occur and, where necessary, cull diseased animals.
- Practice breeding and selection such that animals well suited to local conditions are raised and detailed breeding records are kept.
- Acquire animals (including breeding stock) only from sources with a known, safe health status, where possible with supporting health certificates from veterinarians.
- Source fresh or frozen semen, ova and embryos from sources with a known, safe health status, accredited by the Competent Authority of the country of origin, with appropriate health certification.
- Keep records of all breeding stock, semen or embryos used on the premises, the animals upon which they were used, the breeding dates and outcomes.
- Keep newly arrived animals separate from resident stock for an appropriate period to monitor them for diseases and infestations in order to prevent transmission of such conditions.
- Ensure that, wherever necessary, newly arrived animals are given time to adapt to new feeding regimes, are not overcrowded, and that their health is regularly monitored.
- Ensure that equipment and instruments used in animal husbandry are suitably cleaned and disinfected between each use.
- Effectively remove or dispose of dead and fallen stock where possible so that other animals cannot come into contact with carcasses and that carcasses do not contaminate the pasture or drinking water, and keep records of all such disposals.

2.2 Addressing physical hazards

Owners or managers of livestock should apply animal welfare practices in accordance with regulatory requirements, and in particular:

- Ensure that people working with animals are properly experienced and trained for the tasks they should perform.
- Ensure that facilities and equipment are properly designed and maintained to prevent physical injury.
- Ensure that animals are handled and transported appropriately.

3. VETERINARY MEDICINES AND BIOLOGICALS

3.1 Common measures

Owners or managers of livestock should:

- Be aware of and comply with restrictions on medicines or biologicals for use in livestock.
- Use veterinary medicines and biologicals strictly in accordance with the manufacturer's instructions or veterinary prescription.
- Use antimicrobials only in accordance with regulatory requirements and other veterinary and public health guidance.
- Keep detailed records of the origin and use of all medicines and biologicals, including batch numbers, dates of administration, doses, individuals or groups treated and withdrawal times. Treated individuals or groups should be clearly identified.

- Maintain required storage conditions for veterinary medicines and biologicals.
- Ensure that all treatments or procedures are carried out using instruments that are appropriate and correctly calibrated for the administration of veterinary medicines and biologicals. Dispose of used instruments (including needles) in a biosecure manner.
- Keep all treated animals on the farm until the relevant withdrawal times have expired (unless the animals should leave the farm for veterinary treatment) and ensure that products from these animals are not used for human consumption until the withdrawal periods have elapsed.
- Ensure that all handling or treatment facilities are safe and appropriate to the species in question, facilitate correct and calm handling and restraint, and that their construction is such that the likelihood of injury is minimised.

4. ANIMAL FEEDING AND WATERING

4.1 Common measures

Owners or managers of livestock should:

- Acquire feed from suppliers who follow recognised good manufacturing practices.
- Manage the feed chain (transport, storage, and feeding) in such a way as to protect feed from contamination (biological, chemical, and physical hazards) and minimise deterioration. Feeds should be used as soon as possible and, if applicable, in accordance with label instructions.
- Ensure that only water of known and acceptable biological and mineralogical quality (i.e. fit for animal consumption) is used for watering stock.
- Keep records of all feeds and dates of acquisition and feeding; where possible the animals/groups of animals fed should be clearly recorded. Self-mixed feeds should have their ingredients and mixes recorded, as well as dates of feeding and animals fed as specified above.
- Where on-farm manufacture of feeds is practised, follow procedures designed to minimise contamination and prevent the inclusion of undesirable feed components. Where necessary, expert assistance should be sought.
- Ensure that nutritional levels are adequate to promote animal health, growth and production.
- Ensure that changes to feeding regimes are, whereever possible, gradual, and that the regimes are safe and follow acceptable feeding practices.
- Prevent animal access to places where feeds are stored and to places where hazardous chemicals are stored.

4.2 Addressing biohazards

Owners or managers of livestock should:

- Ensure that antibiotics are not used in feed for growth promoting purposes in the absence of any public health safety assessment and recommendations.
- Ensure that ruminant protein is not fed to ruminants.
- Where appropriate, manage pastures by stocking rate and rotation to maintain healthy and productive livestock and reduce parasite burdens. Keep records of pasture rotation

and other on-farm animal movements between pens, sheds etc.
- Regularly inspect and, when necessary, clean and disinfect feeding and watering facilities such as drinkers and troughs.
- Ensure that effluents are managed in such a way that drinking water sources are not contaminated.

4.3 Addressing chemical hazards

Owners or managers of livestock should:

- Use herbicides and pesticides judiciously and according to the manufacturer's instructions and applicable legislation such that animal exposure to these chemicals is minimised. Records of usage, including the date and location of application, should be kept.
- Ensure that when feed additives are used, that manufacturer's instructions as to dosage levels and withdrawal periods are followed, and that records of usage of such feed additives are kept.

4.4 Addressing physical hazards

Owners or managers of livestock should:

- Ensure that animals are not kept in sheds, pens or pastures where they are likely to ingest foreign objects and that all facilities are kept clean and free from metal objects, pieces of wire, plastic bags, etc.

5. ENVIRONMENT AND INFRASTRUCTURE

5.1 Common measures

Owners or managers of livestock should:

- Ensure that where animals are confined, the housing or pens are constructed such that the basic needs of the animals are fulfilled especially with regard to ventilation, drainage, and manure removal. Walking surfaces should be level, non-slip, and all surfaces should ideally be washable.
- Locate farms in areas free from industrial and other pollution and sources of contamination and infection.

5.2 Addressing biohazards

Owners or managers of livestock should:

- Ensure that farm layout and building construction provide for adequate separation of animals by production group as necessary.
- Ensure that buildings and perimeter fences are constructed so that contact with other livestock and wild animals is minimised.
- Maintain adequate separation between clean and contaminated materials (e.g. feed and manure).
- Ensure that systems that use animal or human waste for fertiliser purposes take into consideration relevant treatment methods as well as specific holding times before animals are allowed onto treated pastures.
- Ensure that effluent is properly disposed of and that facilities where animals are kept are

an appropriate distance from any disposal points.
- Ensure that any bedding or litter is regularly renewed and that used bedding or litter is disposed of safely.
- Apply appropriate pest and vermin control measures, which may include the use of barriers such as nets or fencing, or the use of pest/vermin population control measures.

5.3 Addressing chemical hazards

Owners or managers of livestock should:

- Use chemical disinfectants and cleansers strictly in accordance with the manufacture's instructions, ensuring that disinfected or cleaned surfaces and facilities are properly rinsed if necessary.
- Seek professional advice with regard to the use of disinfectants or cleansers.

5.4 Addressing physical hazards

Owners or managers of livestock should:

- Manage pastures such that livestock are not exposed to dangerous and impassable areas.

6. ANIMAL AND PRODUCT HANDLING

6.1 Addressing biohazards

Owners or managers of livestock should:

- Ensure that all animals destined for slaughter are clean, healthy and fit to travel and have not had recent contact with diseased stock or infectious material.
- Apply short duration feeding regimes aimed at reducing the shedding of harmful bacteria by animals destined for slaughter.
- Ensure that contamination of animal products from animal and environmental sources during primary production and storage are minimised.
- Ensure that storage conditions maintain the quality of the products.
- Keep records of animals and animal products leaving the farm as well as their destination and date of dispatch.

6.2 Addressing chemical hazards

Owners or managers of livestock should:

- Ensure full compliance with existing legislation such that applicable maximum residue levels are not exceeded.
- Ensure that no animal destined for slaughter has been subjected to treatment for which the withdrawal period has not elapsed.

6.3 Addressing physical hazards

Owners or managers of livestock should:

- Ensure that mustering or catching and handling of animals prior to loading is carried out in a safe and humane manner.
- Ensure that loading facilities are appropriately constructed.

- Take the necessary care during animal loading so as to minimise injury.
- Handle products in such a way as to prevent damage.

Implementation

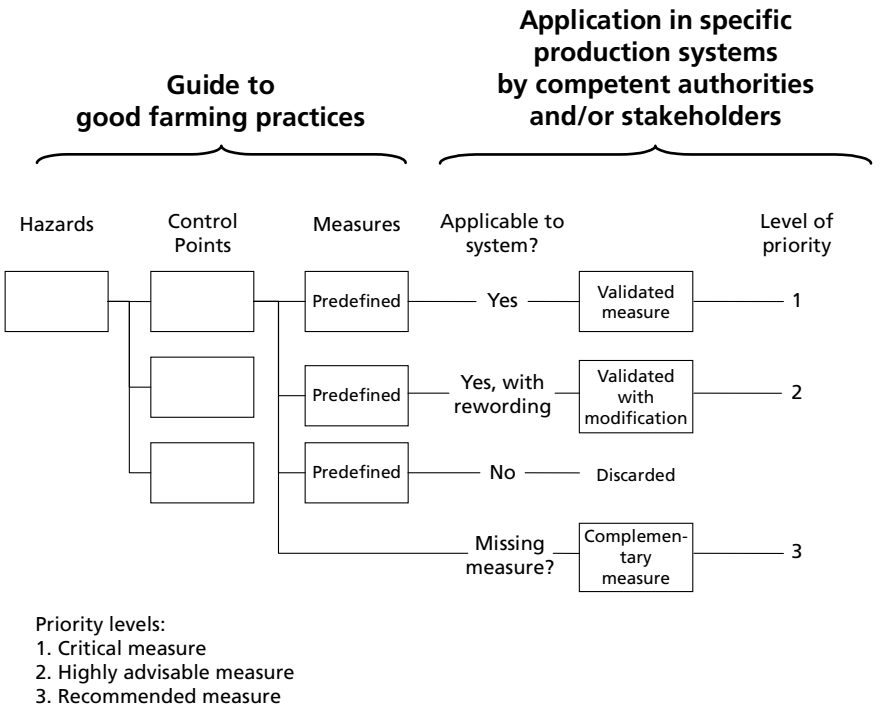
It is desirable that the Competent Authorities and relevant stakeholders agree on acceptable farm management measures (which may include codes of practice) for the various livestock industries in their countries, based on the principles elaborated in this Guide.

Ideally, farmers should implement all measures recommended in the Guide. In order to achieve this, these measures need to be adapted to specific production and farming systems from the subsistence smallholder systems found in many developing countries to large industrial farm units.

Diagram 1 proposes a methodology for such implementation.

The OIE and FAO encourage member countries to develop their own measures or codes of practice based on this Guide. The Competent Authorities should consult with the appropriate

DIAGRAM 1
Implementation methodology for specific production and farming systems



stakeholders to establish the cost effectiveness and the applicability of the measures recommended in this Guide. The Competent Authorities should take account of the particular health, socioeconomic and cultural situations in their countries as they proceed to apply this Guide.

Some measures can be adopted 'as is', while others will have to be adapted and their wording modified before being validated and integrated into a specific code of practice. Non relevant measures might even be discarded. Some complementary measures might have to be added to specific codes of practice in order to adequately address specific hazards.

Countries can decide what level of priority to assign to each of the measures in this Guide when developing their own frameworks. Measures with the highest priority should be the minimum requirement for farmers, while measures of lower priority could be applied as circumstances dictate.

On-farm quality assurance should be supported by policies and programmes, including raising awareness and training of stakeholders. These activities are deemed essential to obtaining stakeholder commitment to the quality assurance process.

The Competent Authorities in consultation with stakeholders should develop mechanisms to monitor the implementation of this Guide.

Appendix 1

Hazards and corresponding control points

Hazards	Control points
BIOHAZARDS	
Introduction of pathogens and contaminants	• Sources of animals (horizontal and vertical transmission) • Sourcing of breeding stock • Breeding procedures • Semen and embryo quality • Bedding • Feed and water • Records of acquisitions and animal movements • Health and hygiene of visitors and personnel • Contact with other animals (including wildlife/rodents/insects, etc.) • Vehicles/clothing/instruments/equipment • Infected/contaminated carcasses, tissues or secretions
Transmission of pathogens and contaminants	• Animal housing and population density • Disease diagnosis (horizontal and vertical transmission) • Health and hygiene of visitors and personnel • Vehicles/clothing/instruments/equipment • Infected/contaminated carcasses, tissues or secretions • Bedding management • Insect or pest vectors
Microbial and parasitic infections on pastures and paddocks	• Pasture management • Microbial/parasite diagnosis
Microbial load on skins	• Environment of animals • Waste management • Bedding management • Population density
Airborne infections and contaminations	• Farm location • Animal housing and ventilation • Population density
Carrier animals shedding pathogens	• Animal management • Diagnosis • Population density
Increased susceptibility to pathogens	• Animal management (incl. transport) • Diagnosis • Population density
Antimicrobial and parasiticide resistance	• Diagnosis • Therapeutic regimes • Record keeping
Feedborne infections and contaminations	• Feed production, transport and storage • Feed quality • Feed equipment • Record keeping
Waterborne infections and infestations	• Water quality • Effluent management • Watering equipment
Livestock not well adapted to conditions	• Breeding selection • Record keeping

(contd)

Hazards and corresponding control points *(contd)*

Hazards	Control points
CHEMICAL HAZARDS	
Chemical contamination of environment, feed and water	• Farm location • Animal movement • Use of agricultural chemicals • Feed and water quality • Equipment and building materials • Hygiene practices
Toxins of biological origin (plants, fungi, algae)	• Feed, pasture and water quality • Farm location • Animal movements • Feed production, storage and transport
Residues of veterinary medicines and biologicals (incl. medicated feed and water)	• Treatment of animals • Sales and prescription control • Record keeping • Residue control • Quality of feed and water
Radionuclide pollution	• Farm location • Sources of feeds and water
PHYSICAL HAZARDS	
Broken needles and other penetrating objects.	• Treatment of animals
Injuries	• Farm location • Infrastructure • Population density • Animal handling • Construction and equipment
Ingestion of dangerous/harmful objects	• Farm location • Source of feeds and water • Record keeping • Construction and equipment • Infrastructure

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Food safety is universally recognised as a public health priority. It requires a holistic approach, from production to consumption. This Guide is intended to help Competent Authorities to assist stakeholders, including farmers, to fully assume their responsibilities at the animal production stage of the food chain to produce safe food.

La seguridad sanitaria de los alimentos es una prioridad de salud pública universalmente reconocida que requiere un planteamiento global, desde la producción hasta el consumo. El objetivo de esta Guía es ayudar a las Autoridades Competentes a aportar el apoyo necesario a las partes interesadas, especialmente a los ganaderos, para que asuman plenamente sus responsabilidades en el tramo de la cadena alimentaria que constituye la producción animal y produzcan alimentos inocuos.

La sécurité sanitaire des denrées alimentaires est une priorité de santé publique universellement reconnue. Elle requiert une approche globale qui va de la production à la consommation. Le présent Guide vise à faciliter la tâche des autorités compétentes qui doivent aider les différents acteurs, et notamment les éleveurs, à assumer pleinement leurs responsabilités en amont de la chaîne alimentaire afin d'assurer l'innocuité des denrées alimentaires.

ISBN 978-92-5-006145-0

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TC/M/I0482Tri/1/01.09/1600