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MINISTRY OF AGRICULTURE

Poultry meat and egg quality and safety guidelines

RAISE-FS Guideline #003

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Ethiopian Agricultural Authority

Sticthing Wageningen Research Ethiopia
WAGENINGEN UNIVERSITY & RESEARCH

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Summary of document

Poultry meat and eggs serve as crucial sources of high-quality protein, particularly in developing nations, making their safety essential for public health, the prevention of foodborne illnesses, and the promotion of sustainable industry growth. Contamination from pathogens such as Salmonella and E. coli, along with emerging zoonotic diseases like avian influenza, presents significant threats. Establishing stringent food safety standards is vital to minimize health risks, facilitate access to global markets, and prevent economic losses. This guideline provides measures for maintaining the quality and safety of poultry meat and eggs.

Keywords: Poultry meat, egg, food safety, contamination, Ethiopia

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Preface

Ensuring poultry product safety and quality is critical in safeguarding public health, building public confidence, and promoting the growth of the poultry sector in Ethiopia. With this consideration, this guideline has been developed through collaborative efforts by key national food safety actors from government institutions, ministries, academia, research institutions, non-governmental organizations, and the private sectors.

This guideline was developed lead of the Ethiopian Agriculture Authority (EAA), provides comprehensive procedures and guidelines for poultry slaughtering and processing, covering critical factors like facilities design, personnel hygiene, training, animal handling, slaughter operations, cleaning and sanitation, packaging, transport, traceability, recalling products, and disposing of waste. It further contains cross-cutting topics like emergency response, egg quality and safety, and marketing. This The guideline builds on and is fully aligned with the Poultry Biosecurity Guideline previously developed by the MOoA and its partners. Together, these documents provide a comprehensive framework to strengthen poultry production, processing, and food safety practices across the value chain. In addition, it supports the national food safety strategy and regulatory framework, designed to strengthen certification systems, build capabilities, and improve traceability and market access.

Effective application of this guideline relies on strong commitment and coordination among players. We call all actors, such as facility owners, workers, and private sector operators, to apply these practices in their operations. This will not only ensure food safety and consumer protection but also enhance the competitiveness of Ethiopia's poultry sector in the local and export markets.

We here reaffirm our commitment to assist and oversee the proper implementation of this guideline and requesting all stakeholders to join hands to help achieve a safe, sustainable, and prosperous poultry industry.

Hamid Jemal (PhD),

Deputy Director for Livestock Regulatory

Signature: 

Date: 05/01/2026

List of abbreviations and acronyms

AAU	Addis Ababa University
Alema Farms PLC	Alema Farms Private Limited Company
AMI	Ante Mortem Inspection
CAS	Controlled Atmospheric Stunning
CCP	Critical Control Point
EAA	Ethiopian Animal Authority
EFDA	Ethiopian Food and Drug Authority
EIAR	Ethiopian Institute of Agricultural Research
EPHI	Ethiopian Public Health Institute
Ethio Chicken PLC	Ethio Chicken Private Limited Company
GHP	Good Hygiene Practices
HACCP	Hazard Analysis Critical Control Point
IAMI	Initial Ante Mortem Inspection
ISO	International Organization for Standardization
mA	Milli Ampere
PCT	Pest Control Team
PMI	Postmortem Inspection
PPE	Personal Protective Equipment
PRP	Prerequisite Programs
SWRE	Stichting Wageningen Research Ethiopia

Terms and definitions

Terminology	Definition
Ante-mortem	Any method of inspection on live poultry to ensure health prior to slaughtering, carried out by a meat inspector at an abattoir for consumer safety.
Broilers	Meat-type chickens (usually 6 to 8 weeks old) characterised by tender meat, with soft, pliable, smooth-textured skin and flexible breastbone cartilage. They can be of either sex, bred and raised for meat production.
Carcass	The body of a chicken after bleeding, plucking and evisceration.
Certification	A process that provides formal recognition of a product, service, or system's compliance with specific standards or requirements.
Chicken meat	The carcass obtained from the cut-up process.
Cleaning	Refers to the process of cleaning which takes place throughout the day and reaches its peak after slaughtering has ended. This process involves mechanical and chemical methods used to remove macroscopic and visible dirt.
Competent authority	A regulatory authority such as the Ethiopian Agricultural Authority (EAA), certification bodies or designated regional institutions that oversee the regulations in the poultry industry and ensure that businesses comply with established standards.
Crate	Cages or boxes used to confine poultry for transport, appropriate for each strain and breed.
Cutting part	Cut-up chicken carcass, whether or not it is de-boned or de-skinned, depending on the fabricated process.
Edible	Fit for human consumption.
Evisceration	The removal of viscera (internal organs, especially those in the abdominal cavity).
Giblets	Visceral organs that are fit for human consumption i.e., heart, liver, and gizzard.
HACCP	A system which provides the framework for monitoring the total food system, from harvesting to consumption, to reduce the risk of food-borne illnesses.
Hygiene	Refers to a condition that includes the concepts of "clean" and "safe" (or the absence of harmful organisms or substances).
Inspector Veterinarian	An official inspector who is professionally qualified as a veterinarian and carries out official meat hygiene activities as specified by the competent authority.
Sowing seeds	Meat Inspector: An official inspector who is professionally qualified as a mid-level career professional certified to work under the supervision of the veterinary inspector on meat hygiene activities as specified by the competent authority.
Offal	Visceral organs (except the lungs) in both abdominal and thoracic cavities of poultry.
Package	Packages or containers in which carcass, meat and eggs are packed.
Post-mortem inspection	Any procedure or test conducted by a veterinary inspector.
Poultry	Chickens, including broilers and fowl (hens and cocks).
Poultry abattoir	Any premises or building established for poultry slaughtering and dressing. It may include cut-up processes to prepare poultry meat, parts, and products for human consumption.
Poultry meat	Tissue parts from the carcass that are safe and fit for human consumption. The majority of tissue parts consist of the bird's skeletal muscle. The meat should not be treated or preserved in any way, except through chilling.
Post-mortem	Any method of inspection on the poultry carcass and visceral organs after slaughter by a meat inspector at an abattoir, for consumers safety.
Potable water	Drinking water that is pure and safe for consumption at the point of use.
Sanitation	The process of keeping a place clean and healthy, especially by providing a sewage system and a clean water supply.
Scalding	Passing the poultry through hot water to loosen the feather follicles to facilitate de-feathering.
Slaughtering	The killing of poultry for human consumption.
Stunning	The process of rendering animals immobile or unconscious before they are slaughtered for food.
Transportation of poultry	Movement of poultry humanely by vehicle, from farm to abattoir.

1 Introduction

1.1 Background

Ethiopia has a large poultry population, estimated at 57 million and second only to cattle, of which there are over 70 million (CSA, 2021). Poultry is one of the most important agricultural sub-sectors for rural communities in Ethiopia and the poultry population consists almost entirely of indigenous chickens. Recent estimates show that 81.7% of the poultry population is indigenous, 10.9% is hybrid, and 7.4% is exotic (CSA, 2020). Poultry production has important economic, social and cultural benefits and plays a significant role in family nutrition in developing countries. The proportional contribution of poultry to the total animal protein production worldwide was projected to increase to 40% by the year 2020, with the majority of this increase occurring in the developing world (FAO, 2010).

Despite the nutritional and economic benefits of the poultry meat and egg sector, there are also associated challenges, particularly the risk of foodborne microbial disease transmission and spoilage.
Food safety has become a major health challenge in both developed and developing countries in recent years. Foodborne illnesses, food fraud, and food scares are rising with the globalisation of supply chains and market diversification. Access to sufficient amounts of safe and nutritious food is key to sustaining life and promoting good health. *Campylobacter* and *Salmonella* infections are among the most significant food safety hazards. These bacteria account for more than 90 percent of all reported cases of bacteria-related food poisonings worldwide. Most of these cases are related to the consumption of poultry and poultry products, but all domestic livestock are potential reservoirs of infection.

Since poultry production and trade are increasing globally, the risk of contamination of poultry products by chemicals, and physical or biological hazards exists everywhere. Hazards can be introduced during the rearing, transport, processing, packaging, storage, distribution or preparation of poultry for consumption. Therefore, it is mandatory to take important precautions along the poultry production value chain.
Poultry slaughtering houses must adhere to strict guidelines to ensure the safety and quality of their products. Poultry slaughtering involves several critical steps, ranging from receiving live poultry to the production of various poultry products. By following the proper procedures for slaughtering, maintaining high hygiene and sanitation standards, handling products with care, and complying with regulatory requirements, poultry facilities can uphold food-safety standards and deliver high-quality products to consumers. It is essential to maintain hygienic conditions throughout the entire process to prevent contamination and ensure the safety of the final products.

Contaminated eggs have been identified as a major cause of foodborne salmonellosis (Howard, *et al*., 2012). A freshly laid hen's egg is generally devoid of microorganisms, but soon after oviposition, the shell surface becomes contaminated by various spoilage and pathogenic microorganisms (Cader *et al*., 2014). Sources of eggshell microbial contamination may include faecal matter, nesting material, feed, air and the person collecting the eggs, or the storage equipment (Techer *et al*., 2015). Moreover, eggs can also be inherently colonised by the natural flora of the laying hen.

Poultry meat and egg safety guidelines serve several important purposes, all of which are aimed at ensuring the humane treatment of poultry and the production of safe and high-quality poultry products (meat and eggs) for consumers. These guidelines are designed to regulate and standardise the process of slaughtering poultry, from the handling and transportation of live poultry to the actual slaughter and processing of the carcasses. These guidelines can be used by different frontline practitioners from government agencies, international organisations and the private sector, to ensure that poultry are treated with respect and care throughout the slaughtering process.

1.2 Rationale

Poultry meat and eggs are essential sources of high-quality animal protein in many parts of the world, particularly in developing countries. However, the safety of poultry products is critical to ensuring public health, protecting consumers from foodborne illnesses, and maintaining the sustainability of the poultry industry.

Poultry products, particularly meat and eggs, are prone to contamination by harmful pathogens such as *Salmonella*, *Campylobacter*, *Escherichia coli*, and *Clostridium perfringens*. These pathogens can cause severe foodborne illnesses, leading to symptoms ranging from mild gastrointestinal discomfort to severe, life-threatening infections.

The poultry industry, especially in developing countries, faces challenges due to the emergence of new zoonotic diseases (diseases transmitted from animals to humans) like avian influenza, which can also have significant economic and public health consequences. Safety guidelines can help reduce the risk of such outbreaks.

Safe poultry products are crucial for global trade. Countries with robust food safety standards are more likely to access international markets and enjoy competitive advantages in the poultry trade. Without clear safety guidelines, poultry products could be deemed unsafe, resulting in trade restrictions, export bans, and economic losses for producers.

Ethiopia has a predominantly informal market characterised by poor layout, weak infrastructure, limited regulatory enforcement and traceability, and absence of surveillance, food safety and quality management systems.

1.3 Scope

These guidelines apply to live poultry transportation from farm to abattoir, humane slaughtering, regulatory control, good hygienic practices and the distribution of poultry meat and products from the abattoir to the market. They also cover the safety and quality of eggs during harvesting, handling, storage, and market distribution, from the farm all the way to the marketplace.

1.4 Objectives

1.4.1 General Objective

- The general objective of these poultry meat and egg safety guidelines is to ensure the production, handling, processing, storage, and consumption of poultry products (meat and egg) in a manner that minimises health risks, prevents contamination, and maintains high standards of hygiene, quality, and safety for consumers, while also promoting animal welfare throughout the process.

1.4.2 Specific objectives

- Minimise microbiological, chemical, and physical hazards in poultry slaughtering for meat production and in egg production, as well as during their distribution for marketing.
- Promote safe handling, storage, and transportation practices to maintain product safety and quality.
- Ensure safe and humane poultry farming practices to improve product quality and reduce disease risks.
- Align poultry safety practices with national and international food safety standards and regulations.

2 Facility design and layout

The design, location, layout and structure of the abattoir are key factors that influence the product quality and safety.

2.1 Selection of a suitable site

Choosing a suitable site for abattoir construction is one of the most important aspects. Therefore, the factors listed below must be considered when selecting an appropriate site.

- The poultry abattoir site should be located at a reasonable distance from residential areas and from industries that emit unpleasant odours, smoke, fumes or ash.
- The poultry abattoir site should be located at a reasonable distance from quarantine stations, livestock or poultry farms, other abattoirs and rivers or lakes.
- The site should have easy access to a main road, as well as reliable sources of power and water, especially groundwater.
- The site ground should be compacted and not composed of loam soil, with a gentle slope towards one side.
- It should be free from large nearby trees.

2.2 Design and construction

General

- The processing plant should be designed to ensure a one-way flow of operations, from the receiving area to the final product dispatch or shipping area, with no cross flow.
- Clean and dirty areas should be physically and operationally separated by regulating workers' movement.
- Plant layout should be designed, constructed and maintained in a manner to facilitate good manufacturing and hygienic practices, and provide adequate working spaces for product safety.
- The building construction should be strong, durable and easy to clean and should be designed to prevent pests, dust and other contaminants.
- The design and layout of the production unit, equipment, machinery and utensils should align with the production process and facilitate hygienic practices.

Ceilings

- Ceilings should be made from materials that are smooth, durable, impervious, and capable of supporting ventilation grills and pipe works.
- A high apex roof is recommended in hot areas, while a building with a sloped roof is preferred in humid areas.
- Ceiling surfaces must be white or light-coloured to enhance light reflection and facilitate easy cleaning.

Walls

- The walls should be smooth, durable, easy to clean, non-flaking and, light-coloured.
- Wall-to-floor junctions should be perfectly connected, with smooth curves to prevent contamination and facilitate easy cleaning.

Floors

- Floors should be non-slippery, impervious, easy to clean and corrosion resistant.
- The floors should be sloped towards the dirty areas to ensure proper drainage.

Ventilation

- Suitable and sufficient means of natural or mechanical ventilation should be provided to prevent excessive heat, steam and condensation while avoiding any mechanical airflow from a contaminated area to a clean area.
- Ventilation openings should have screens or protective enclosures made of non-corrodible material, with easy access to filters and other parts requiring cleaning.
- Ventilation should be adequate to minimise air-borne contamination and control ambient temperature, odours and humidity.
- Airflow should move from edible to inedible areas.

Electricity

- Plants should have a 3-phase power supply; alternative power sources should be available, e.g., a backup generator.

Water supply and steam

- An adequate supply of potable water, meeting the Ethiopian drinking water Standard 58, is essential for the plant and process, whether sourced from the municipality or a properly constructed and maintained well.
- Water should be monitored and tested physically, microbiologically and chemically to ensure compliance with recommended standards.
- Water treatment processes are necessary to meet the required standards.
- Common treatment methods include chlorination, filtration, UV disinfection and reverse osmosis etc.
- A plant requires 25-35 litres of water per bird slaughtered. Therefore, sufficient water reservoirs should be constructed to support the maximum daily slaughter capacity.
- Steam can be generated by electricity, gas or solar heaters on-site and used for scalding and cleaning in small batches.
- A mobile steam cleaner can also be effectively used for cleaning, with cleaning agents added to the water flow.

Lighting

- Adequate natural or artificial lighting should be provided throughout the slaughterhouse. All lightings should be evenly distributed, with bulbs having suitable protective covers.
- Light intensity should be at least 220 lux in the processing lines, chiller, freezer and other areas. In inspection areas it should be at least 540 lux.

Doorways and doors

- Exterior doors must not open directly onto the areas where poultry are dressed.
- Access doors should be self-closing and equipped with an airlock to prevent ingress of dust, odours, vapour and other contaminants.
- Door surfaces should be smooth, non-absorbent, anti-seepage and easy to clean and disinfect with a tight fit.

Drainage

- There should be a sufficient and efficient drainage system.
- Drains in the working room should be covered with a grill and flow from clean to dirty areas.
- The diameter of the drains should be wide enough (at least 15 cm) to facilitate the free flow of large amounts of feathers, fat and faeces.
- The design of the effluent disposal system should consider the nature of the waste, its volume and the system of operation.
- Traps should be used to separate and remove solid suspended materials, with inspection holes for monitoring.
- Separate drains, which may be open in places, should be provided for rainwater.
- Drains for toilet waste should be separated, pass through closed pipes and have gullies and manholes.

Waste disposal

- An efficient effluent and waste disposal system should be present.
- Solid waste should be disposed of efficiently using properly labelled containers for removal.
- Waste storage areas should be constructed in a way that prevents contamination of products, potable water supplies, equipment, buildings and the general environment.
- All effluent lines (including sewer systems) should be large enough to carry peak loads.
- Waste locations outside the plant should be isolated from the food-processing sites to prevent contamination. Unpleasant or harmful toxic gases should be prevented from escaping, and insect pests should be prevented from breeding in these areas.
- Waste treatment plants should be located at least 50 meters away from the slaughter hall and its accessories.
- Septic tanks and soak pits should be located on lower ground and away from water wells (at least 50 to 100 meters).

Personal hygiene facilities

Changing and shower rooms

- Changing and shower rooms should be located adjacent to each other and be separated from product dressing areas, product storage rooms and toilets.
- Changing rooms should be provided with a sufficient number of lockers for both sexes.

Toilet and handwashing facilities

- A sufficient number of toilets and urinals should be provided for each gender.
- Toilets should be designed to ensure hygienic removal of waste matter.
- Toilets should be well lit and ventilated and should not open directly onto meat handling areas.
- Hand washing facilities or stations should be provided at key locations in the slaughter hall and other areas, equipped with both hot- and cold-water supplies, as well as knee-, foot- or sensor-operated systems for usage.
- Dust bins for used paper-towel disposal should be foot-operated.
- Notices should be posted directing personnel on how to wash their hands effectively.
- Hand wash basins should be made of smooth, water-proof materials that are easy to clean and disinfect.
- Hand wash stations should be sufficient in number to maintain sanitary conditions and be easily accessible to all slaughter and processing areas.
- All stations should have hot and cold running water, with adequate pressure to allow for thorough cleansing.

Sanitisers

- Sanitisers should have overflows, and the basin must be directly connected to a floor drain.
- The temperature of hot water sanitisers must be maintained at no less than 82^0C.

Storage facilities

- Storage facilities should be provided based on the product quantity and specific storage requirements.
- Warehouses should be made of non-toxic and durable materials, with flat grounds to facilitate ventilation.
- Warehouses should be designed for easy maintenance and cleaning to prevent insect pests from hiding and equipped with devices to prevent their entry.
- Packaging materials should be arranged with different storage sites or stored in separate areas according to their properties and be clearly labelled to prevent cross contamination.
- Where necessary, warehouses should be equipped with temperature and humidity control systems.
- Stored products should be kept at an appropriate distance from walls and the ground, to improve ventilation and product handling.
- Detergents, disinfectants, pesticides, lubricants and fuel should be packaged safely and clearly labelled, and should be kept away from materials, semi-finished products, finished products and packaging materials.

Temperature control facilities

- Heating, cooling and freezing facilities, along with temperature monitoring systems, should be provided based on the characteristics of the products.
- Facilities for controlling room temperature may be arranged according to production requirements.

Equipment, machinery and utensils

- The materials used for equipment and utensils in the processing facility should be corrosion-resistant, non-toxic and non-absorbent, fully welded, washable and easy to disinfect.
- If lubricants are used for equipment, machinery or utensils, a system must be in place to prevent contamination of meat products.
- Prohibited materials used for making equipment, machinery and utensils are cadmium, copper and lead, and their compounds or paints, as well as wood, aluminium and pottery.
- The equipment, machinery and utensils must not be directly attached to the wall; a base construction should be used to prevent shaking and loud noises.
- There should be adequate space for cleaning, disinfecting and inspecting underneath and beside the equipment.
- Production equipment designed to improve productivity should be provided and maintained according to the process flow to avoid cross-contamination.
- Equipment and instruments that come into contact with materials, semi-finished products and finished products, should be made of non-toxic, odourless, corrosion-resistant materials that are resistant to shedding and easy to clean and maintain.
- Surfaces of equipment, tools and instruments that come into contact with food should be made of smooth, non-absorbent materials that are easy to clean, cure and disinfect. They should not react with food, detergents and disinfectants under normal production conditions and must be kept in perfect condition.
- The design and structure of production equipment should prevent contamination from parts, metal chips, lubricating oils or other foreign materials, and should be easy to clean, disinfect, inspect and maintain.
- Equipment should be securely fixed to the wall or floor without any gaps, or a sufficient distance should be maintained between the equipment and the ground or wall during installation to facilitate cleaning and maintenance.

Monitoring, maintenance and repair equipment

- Equipment used for monitoring, controlling and recording, such as pressure gauges, thermometers and recorders should be calibrated and maintained on a regular basis.
- A system for equipment maintenance and repair should be established to improve the routine maintenance and effectiveness of the equipment.
- Equipment should be inspected on a regular basis and the results recorded in a timely manner.

2.3 Abattoir layout

Reception and unloading area

- There should be a separate entrance for incoming poultry.
- The reception area should be equipped with washing facilities for vehicles and bird crates.
- The poultry awaiting slaughter should be kept in a shaded area.
- The unloading areas should have sufficient space for vehicles to properly move and store both full and empty bird crates and containers.
- In modern poultry processing plants, processors arrange for overhead spraying of live poultry with sanitiser to minimise microbial load.
- This area should be well ventilated.
- The unloading area should be located adjacent to the reception area. There should be sufficient space to sort stock and handle crates and containers.
- Hand wash basins should be provided for bird handlers, with easy access to equipment for handling poultry before slaughter.

Lairage

- Usually, poultry collected from the farm are slaughtered immediately. However, there may be a place intended to provide rest to poultry before slaughter, and that place is called a lairage.

Slaughter hall

- It is the part of the abattoir where poultry are slaughtered. It should be well-lit and ventilated, without any ingress of flies, poultry etc.

Poultry slaughter hall must have

- A sufficiently large area for stunning and bleeding on the one hand and plucking and scalding on the other. These activities should be carried out in separate places.
- An evisceration and preparation room large enough to be located sufficiently far from other workstations, or separated by a partition, to prevent contamination of the dispatching room.

Chilling and freezing room

- The materials in the chilling and freezing room should be able to maintain the cool temperature, the floor is durable, crash-resistant, non-absorbent, and wall surfaces should be smooth, easy to clean and disinfect.
- The cooling equipment should have a system to prevent condensation.
- The doors of the chilling room should have automatic locks and be airtight.
- A thermometer, with or without recorder, should be installed on the outside wall of the chilling room.
- If freezing is practised, a dedicated freezer room should be available which meets storage requirements.

Packaging room

- If the abattoir has a packaging room, it should be of adequate size and separated from the other operating rooms.

Offal room

- This area is connected with the slaughter, evisceration and packing sections.
- The area and subdivision depend on the processing facilities in the by-product section.
- It collects feathers, blood, heads, feet, intestines and trimmings from the other sections.
- The staff working in this room should not enter other processing rooms.

Wastewater treatment system

- The wastewater treatment units should be located away from the operations building to prevent unpleasant odours and contamination of carcasses and meat.
- A wastewater treatment system should be installed to treat wastewater in compliance with relevant laws and regulations.

Laboratory facility

- A laboratory facility should be provided in accordance with the MoA/EAA export abattoir laboratory guidelines.

3 Personnel hygiene and health

3.1 Personnel health status

- No person suffering from infectious or contagious diseases (such as infected wounds, skin infections, sores, diarrhoea etc.) should be allowed to work in the slaughterhouse or meat processing unit.
- Any person employed as a meat handler must report immediately any illness or symptoms to a person in charge.
- Biannual medical examination of all meat handlers must be done in a registered medical institution to ensure that personnel are free from infectious and other communicable diseases.
- A record of these examinations, signed by a registered medical practitioner, should be maintained for inspection.
- Staff suffering from or carrying a disease likely to be transmitted through meat, shall not be permitted to handle meat or enter any meat-handling areas.
- A medical questionnaire should be completed by all new staff, including temporary staff, prior to employment.
- Any person who is cut or injured should discontinue working with meat immediately.
- All bandages should be fully protected by a waterproof covering, of a different colour, clearly visible and securely attached to prevent accidental detachment.
- First aid facilities should be provided on the premises**.**

3.2 Personal cleanliness

- All protective clothing must be light in colour in clean and quality areas, but red in bleeding and scalding areas.
- Protective clothing, aprons, bouffant caps, masks, boots, tools and equipment should be cleaned after work and stored at designated rooms.
- Meat handlers should maintain a high degree of personal hygiene and wear adequate and suitable clean protective clothing, head coverings, face masks, gloves, gum boots etc.
- Personnel should maintain their protective clothing in clean condition, and must not sit on grass, ground, dirty walls etc.
- Personnel must not wear jewellery, watches, make up or perfume.
- Wash hands and arms thoroughly and frequently with an anti-bacterial liquid soap and warm water. The importance of clean hands and arms cannot be over emphasised.
- Laundry services should be provided in the abattoir, and personnel must not be allowed to take protective clothing home to be washed.
- All persons entering the slaughterhouse or meat processing unit must wash their hands following the steps mentioned below:

    - Wet hands with potable water.
    - Apply liquid soap and lather for at least 30 seconds.
    - Ensure the soap covers all parts of hands, including nails, between fingers, and both the sides of the hands.
    - Rinse thoroughly with potable water.
    - Disinfect or dry hands.

- Hand washing must be done:

    - At the beginning of food-handling activities;
    - Immediately after using the toilet;
    - After handling raw food or any contaminated materials, tools, equipment or work surfaces;
    - After coughing, sneezing, or smoking, to avoid contamination of food items;
    - After handling chemicals.

3.3 Personal behaviour

- The slaughterhouse management shall implement an effective personal hygiene programme that identifies hygienic behaviour and habits to be followed by personnel to prevent food contamination.
- Personal effects such as jewellery, watches, pins or other items should not be worn or brought into meat-handling areas.
- Smoking, eating, chewing or spitting is prohibited in production areas except in designated areas or in the canteen.
- Do not pick your nose.
- Fingernails must be short, clean and free of nail varnish.
- Do not sneeze into your hands.
- All meat handlers must take showers daily before and after work.

3.4 Visitors

- Proper care should be taken to ensure that food safety and hygiene are not compromised by visitors to the production area.
- The facility should ensure that visitors who visit any areas in the slaughterhouse or meat processing unit wear protective clothing and head covers and adhere to all personal hygiene provisions for maintaining food safety.
- All visitors should provide written confirmation that they do not carry any infectious diseases (see Annex V: Visitors' Log).

4 Training and awareness

The slaughtering process involves specific procedures and guidelines to ensure the humane treatment of poultry and the production of safe and high-quality poultry products. Proper training and awareness are essential for all personnel involved in the poultry slaughtering process to ensure adherence to industry standards, regulations, and best practices.

4.1 Components of training

- **Animal Welfare:**
    - Training should emphasise the ethical treatment of poultry throughout the slaughtering process. This includes proper handling, stunning, and slaughter techniques to minimise stress and pain for the poultry.
- **Food Safety:**
    - Employees should be trained on hygiene practices, cross-contamination prevention, and proper sanitation procedures to maintain the safety and quality of poultry products.
- **Regulatory Compliance:**
    - Understanding local, national, and international regulations pertaining to poultry slaughtering is essential. Training should cover legal requirements, documentation, and reporting obligations.
- **Equipment Operation:**
    - Personnel should receive comprehensive training on operating machinery, tools, and equipment used in the slaughtering process to ensure safety and efficiency.
- **Emergency Procedures:**
    - Awareness programs should include protocols for responding to emergencies such as equipment malfunctions or animal welfare incidents.

4.2 Training methods

- **Hands-On Demonstrations:**
    - Practical demonstrations of slaughtering techniques, equipment operation, and animal handling can improve understanding and skill development.
- **Interactive Workshops:**
    - Workshops that encourage participation, discussion, and problem-solving can reinforce learning and promote a culture of continuous improvement.
- **Online Modules:**
    - Using digital platforms for training modules allows for flexibility in learning schedules and can provide access to resources such as videos, quizzes, and reference materials.

- **On-Site Mentoring:**
    - Pairing new employees with experienced staff members can facilitate knowledge transfer and practical skills development in a real-world setting.

4.3 Awareness initiatives

- **Communication Channels:**
    - Establishing clear communication channels within the organisation ensures that employees are informed about updates, best practices, and regulatory changes related to poultry slaughtering.
- **Regular Audits and Feedback:**
    - Conducting regular audits of processes and providing constructive feedback to employees fosters a culture of accountability and continuous improvement.
- **Employee Engagement:**
    - Involving employees in decision-making processes related to animal welfare, safety protocols, and operational improvements can increase their sense of ownership and commitment to best practices.

Effective training and awareness initiatives are essential for promoting responsible poultry slaughtering practices that prioritise animal welfare, food safety, and regulatory compliance. By investing in comprehensive training programs and fostering a culture of awareness, poultry processing facilities can uphold industry standards while ensuring the well-being of both workers and animals.

5 Animal welfare

5.1 Handling of live birds

- Bird handlers should be trained and competent.
- Poultry should be handled as little as possible up to the point of slaughter.
- Poultry should be slaughtered within two hours of arrival at the slaughter plant.
- Poultry should be unloaded from crates in a dimly lit room.
- If poultry are placed in cones, these must be the correct size for the type of bird.
    - Poultry must not be lifted, carried or dragged by the head, neck, wings or tail; nor should they be tied or bound by the neck, legs or wings.
    - Always use both hands when catching, lifting or carrying poultry.
    - Excessive or rough handling of poultry is NOT acceptable.

5.2 Live bird transportation

- Poultry should always be transported smoothly, slowly, and without causing injury or distress.
- Poultry should be transported in a manner that does not have an adverse impact on the safety and welfare of the birds.
- Poultry should be assessed for fitness to travel before being crated and loaded for transport.
- Poultry should be transported for no longer than the following durations, after which provision of water and food is required; 12 hours for adult poultry.
- 24 hours for chicks, once loading starts, the transporter is solely responsible for the welfare of poultry until they are unloaded.
- Vehicles should be thoroughly disinfected with a suitable disinfectant.
- The vehicle and its loading and unloading facilities must be designed, constructed and maintained to avoid injury and suffering, and to ensure the safety and welfare of the poultry.
- Poultry are particularly prone to thermal stress during transport and prompt remedial action may be required if unsuitable conditions arise during the journey.
- All transported poultry must be healthy and fit for transport.
- Poultry should not be transported in bags or with their legs tied.
- Poultry should not be placed in vehicles in the hot sun or in the boot of a car.
- Cages must be of sufficient height to allow poultry to sit comfortably during transport.
- Sufficient space should be provided to allow all poultry to rest on the floor at the same time and remain evenly distributed.
- Consider weather conditions when determining loading densities, allowing additional space on hot or humid days.
- Cages and crates should be designed to prevent injuries, with doors as large as practicable.
- All cages or crates should be well ventilated.
- All poultry should be provided with adequate shade during transport to protect from adverse weather conditions (e.g., direct sunlight, heat, wind, rain and hail).
- During loading and unloading, containers should be moved in a horizontal position whenever possible. Avoid tilting, dropping or sudden jolting of loaded or unloaded containers.
- Avoid overloading the vehicle, as this may compromise ventilation and temperature control. Double-check the bird quantity during loading.
- Unloading should be conducted quickly to minimise exposure of poultry to outside weather conditions.
- The transportation, movement and fitness of poultry should be approved by the competent authority or veterinarian.
- Documentation should be provided showing the following: origin and ownership of animals, place of departure and destination, date and time of departure, and expected duration of the poultry transport.

5.3 Stunning and slaughtering

- Stunning must render poultry immediately insensible to pain on the first attempt.
- Stunning should ensure that poultry remain insensible to pain until death occurs due to slaughter or blood loss.
- Poultry should be rendered insensible to pain prior to being cut.
- If any sign of sensibility is observed at any time after stunning, the poultry must be re-stunned immediately.
- Equipment used to shackle, stun, bleed and kill poultry must be kept and maintained according to the manufacturer's instructions.
- Equipment used to shackle, stun, bleed and kill a bird must only be used within the design parameters specified by the manufacturer.
- All stunning equipment must have either a manual back-up or reserve equipment for use in case of emergency or breakdown. Alternatively, there must be a protocol to shut down the line or stop slaughtering and remove any live poultry from shackles or cones.
- Staff performing stunning and bleeding must be trained and competent in using the available equipment.
- Stunning is not an option for religious slaughtering, such as Halal slaughtering.

6 Slaughtering process

6.1 Reception and pre-slaughter handling

Poultry should be received from a certified farm as per the national poultry biosecurity guidelines. The welfare of poultry should be maintained according to the following standards during transportation to the abattoir:

- The distance should be as short as possible from the farm, to minimise the travel time for the poultry.
- Poultry should be transported in specially designed vehicles with trained drivers, providing adequate ventilation, and using purpose-built crates to prevent injury to the poultry or others. This helps maintain the quality of the meat.
- Transport crates must not be over-crowded and should provide enough space for poultry.
- Damaged crates should not be used to avoid injury to poultry during transportation.
- Crates and vehicles must be thoroughly cleaned and disinfected for further use.
- The poultry should be transported early in the morning or late in the afternoon to avoid exposure to sunlight.
- Trained workers should carefully unload the poultry with the cage or coop (in a horizontal and upright position) upon arrival at the abattoir, allowing them to rest in a holding pen or resting area for at least 1 hour.

6.2 Stunning

- Broilers are moved in transport cages from the resting areas to a dimly lit room by workers trained in the humane handling of poultry. Broilers are then hung upside down to shackle and attach them to an automated processing line.
- Within seconds on the moving line, the chickens are calmed by "rub bars," which provide a gentle pressure to their chests. This, combined with low lighting, helps to keep the broilers calm and adheres to animal welfare standards.
- In modern poultry processing plants, every attempt is made to slaughter chickens quickly and painlessly. Prior to slaughter, they are rendered unconscious to ensure they are unaware of pain.

Types of stunning

- The stunning process should follow standard protocols regardless of the stunning method used, before bleeding.
- Stunning equipment should be properly maintained and calibrated to ensure that poultry are unconscious prior to slaughter.
- Stunning efficiency must be ensured so that the birds' recovery time is kept within 150 seconds.
- For the electrical water-bath stunning method, the current should comply with the minimum recommended current per bird (120 mA per bird). For Controlled Atmospheric Stunning (CAS), the concentration of carbon dioxide should meet the required standard and specified stunning time.
- Poultry may be slaughtered without stunning in small-scale abattoirs processing up to 200 chickens per day.
- If the Halal slaughtering method is used, stunning may not be required.

6.3 Bleeding

- Most of the blood should be drained out from the carcass.
- In case of missing or improper bleeding for any reason, trained workers should be on standby to quickly bleed any missed birds, or, in the event of machine failure, bleed the remaining poultry.
- Proper maintenance of equipment is required.

- Blood collected in the bleeding tank must be removed at regular intervals to avoid contamination.
- A qualified and trained veterinarian should be appointed to check that poultry are properly slaughtered.
- After slaughter, sufficient time (at least 2 minutes) should be allowed for the poultry to bleed out effectively before entering the scalder.
- Bleeding equipment, tools and floors should be cleaned after the bleeding process.
- No live birds should enter the scalder.

6.4 Scalding

- Scalding loosens the feather attachments in the follicle roots to facilitate their removal. Slaughtered broilers are submerged in a scalder tank containing water heated to 58^0C or higher to loosen the feathers from the skin.
- Scalding process efficiency is determined by the combination of time and temperature, which may vary according to the machine manufacturer and line speed, and must be strictly followed.

6.5 Picking or de-feathering

- Care should be taken to maintain the softness of the rubber fingers to ensure better de-feathering quality and prevent skin rupture.
- After the de-feathering process, poultry carcasses should be inspected for incomplete de-feathering. If pinfeathers are visible, forceps should be used to remove them.
- Wax or adhesive substances used in the de-feathering process must be approved, food-grade, and be removed from all equipment and tools after use.

6.6 Removal of feet, head and neck

- Head removal and shank cutting should be done before entering the evisceration area. In exceptional circumstances, the head and shank may remain intact.
- Head removal should be done using head-removal devices. If head removal devices are not available, cutting at the neck is permitted.
- Shank cutting should be done using an electric saw or knife.
- Head removal and shank cutting devices or tools must always be maintained in proper working condition.
- Postmortem by visual inspection should be done by a qualified meat inspector (refer to section 13.2).

6.7 Evisceration

- Evisceration should be done using an automatic sucker, or manually after cutting the vent, which can facilitate the easy removal of internal organs.
- The evisceration process should be carried out in a manner that minimises rupture of internal organs to prevent contamination.
- After offal is removed, both the offal and carcass should be placed together for inspection.
- Inedible offal should be removed regularly from the evisceration section to prevent contamination.
- Edible offal should be separated from inedible offal.
- Edible offal should be cleaned and chilled immediately and the temperature should not exceed 7^0C.
- The inedible viscera consist of the spleen, oesophagus, lungs, intestines and reproductive organs.
- The edible viscera, or giblets, consist of the heart, liver, and gizzard. Giblets may be packaged with the carcass or sold separately.
- Postmortem inspection should be done by a qualified meat inspector (refer to 13.2 section).

6.8 Cleaning

- After the internal organs are removed, the carcasses should be thoroughly washed with streams of potable water, both inside and out.
- As an added measure to further reduce bacteria, an organic acid rinse at a 2.5 to 3% may be applied to the outer and inner surfaces of each carcass to improve the shelf life and wholesomeness of the finished products.
- Any organic acid used for this purpose must be closely regulated by the public meat inspector of the controlling authority and certified as approved for use in food production.

6.9 Chilling and freezing

Chilling

- The carcass temperature should be reduced to prevent microbial growth as soon as cleaning is finished. The specific amount of chilling time required for specific bird sizes might vary slightly, but poultry should be cooled to at least 2 to 5^0C within 4 to 6 hours, which should be maintained until cooking.
- Chilling methods may vary, such as immersion chilling, spray chilling or air chilling. Air chilling is generally recommended, provided the chiller room is well designed and installed with stainless steel shelves to hold more carcasses in plastic racks.
- Grading of chilled carcasses may be done manually or with an automatic grading machine.

Freezing

- Carcasses or cut parts may be frozen in a blast freezer according to need and market demand, but the temperature should not drop below minus 18^0C at any time until they are used by consumers.

6.10 Cutting, portioning and deboning

- After proper chilling, the carcasses should be transferred to a processing hall, where they are typically cut, portioned or deboned to produce a variety of products according to market and customer requirements.
- The processing hall should be maintained at an appropriate temperature to ensure product quality.
- Knives and other accessories should be properly sanitised or sterilised, at regular intervals, before and after use. All storage bins, crates, and other storage materials should be cleaned and sanitised before and after use.

7 Cleaning and sanitation

Cleaning and sanitation in a poultry slaughtering house are crucial steps to ensure food safety and prevent the spread of diseases. The following procedures should be followed to maintain proper hygiene and sanitation in a poultry slaughtering house:

- **Preparation Before Cleaning**
    - Before the cleaning process starts, it is essential to remove all poultry from the area to be cleaned. This includes removing any remaining live poultry or carcasses.
    - All equipment, including knives, saws, and other tools, should be removed and cleaned separately.
- **Personal Protective Equipment (PPE)**
    - All personnel involved in the cleaning process should wear appropriate PPE, such as gloves, aprons, boots, and eye protection, to prevent contamination and ensure worker safety.
- **Dry Cleaning**
    - Dry cleaning which involves removing feathers, dust, and other dry materials from surfaces using brushes, scrapers, or compressed air, should be done to prepare the surfaces for wet cleaning.
- **Wet Cleaning**
    - Wet cleaning involves using water, detergents, and sanitisers to remove organic matter and microbial contaminants from surfaces.
    - High-pressure hoses or foaming equipment can be used to apply detergents effectively.
- **Sanitisation**
    - After cleaning, all surfaces should be thoroughly sanitised and sterilised using approved sanitisers and sterilisers to kill any remaining bacteria or pathogens. This step is critical for preventing cross-contamination.
- **Drainage and Drying**
    - Proper drainage systems should be provided to remove excess water after cleaning.
    - Surfaces should be allowed to air dry completely before equipment is returned to the area.
- **Record Keeping**
    - It is important to maintain detailed records of all cleaning and sanitation activities, including dates, times, products used, and personnel involved. This documentation is essential for regulatory compliance and traceability.
- **Regular Inspections**
    - Regular inspections should be conducted to ensure that cleaning procedures are being followed correctly and that all equipment is in good working condition.
- **Employee Training**
    - All personnel involved in cleaning and sanitation must receive appropriate training on proper procedures, chemical handling, PPE usage, and hygiene practices.
- **Regulatory Compliance**
    - The poultry slaughtering houses must comply with the national regulatory and industry standards regarding cleaning and sanitation practices.

8 Pest control measures

Excluding pests is essential to ensure effective implementation of procedures and the production and storage of safe, high-quality products.

8.1 Physical exclusion of pests

- **Site perimeter**
  - The abattoir site perimeter should be fully fenced and have a controlled entrance with security guards, to prevent unwanted visitors and domestic or wild animals from entering.

- **Neighbouring Environment**
  - The immediate external areas should be designed to drain stagnant water and other waste, preventing pests from finding food and breeding sites.

- **Building Integrity**
  - Buildings should be kept in good repair and condition to prevent pest entry and eliminate potential breeding sites.
  - Good housekeeping practices should be in place to eliminate factors that attract pests to the food processing and storage areas.

- **Inward Goods**
  - All incoming goods should be checked prior to unloading for evidence of pests.
  - Goods should be dry, clean, and free from vermin, birds, insects and other potential contaminants.

- **Personnel**
  - All staff should be aware of the importance of pest control on the site.

- **Identification of Pests**
  - The factory must identify pests (vertebrates and invertebrates) that are likely to require monitoring and control.

- **Pest Management**
  - The Pest Control Team (PCT) should identify all vertebrates (e.g., rats, mice, poultry, dogs and cats) and invertebrates (flies, spiders, mites, cockroaches, crickets, beetles and mosquitoes).

8.2 Mechanisms for Pest Control and Monitoring

- **Glue boards** should be located inside the compound to target vertebrate pests like rats, mice, lizards, and crawling insects like cockroaches and spiders.
- **Mechanical Traps** should be located inside and outside the perimeter walls.
- **Poison baits**, an effective treatment for rats and mice, should be applied outside the perimeter walls when necessary.
- **Insect Light Traps** should be placed inside the factory and around door entrances, except in processing areas, to trap flying insects.
- **Regular pest monitoring** should be conducted to accurately assess the pest status of various environments impacting food production, rather than for appearance purposes.

9 Packaging and labelling

9.1 Packaging

- The packaging should be designed to prevent contamination, protect the product from physical damage and maintain its freshness.
- It should be leak-proof to prevent any spillage or cross-contamination during transportation and storage.
- Packaging materials should be food-grade and approved by the regulatory body for use with poultry products.

9.2 Labelling

- Proper labelling is essential for providing consumers with important information about the poultry products they are purchasing.
- Labels should include details such as the product name, ingredients, net weight, handling instructions, production date, expiration date, producer name, and any allergen information.
- Labels must comply with government regulations regarding food labelling to ensure transparency and consumer safety.

- **Compliance with Regulatory Standards:**
    - The packaging and labelling must comply with regulatory standards set forth by the government authorities responsible for food safety.

10 Storage and transportation

10.1 Storage

- **Temperature management:**
  - Poultry meat products should be stored at recommended temperatures to prevent bacterial growth and maintain product quality.
  - For fresh chilled poultry products, the temperature should be between 2°C and 5°C, with an expiry date of 14 days from the production date.
  - For frozen poultry meat products, the temperature should be maintained at minus 18°C, with an expiry date of 6 months from the production date.

- **Hygiene practices:**
  - Good hygiene practices (GHP) should be applied to the storage facilities to prevent cross-contamination and ensure the safety of poultry products.
  - Regular cleaning and sanitation of storage areas are crucial in maintaining a hygienic environment.

- **Air circulation:**
  - Storage facilities should provide adequate air circulation to maintain uniform temperatures and prevent moisture build-up, which can lead to bacterial growth and product spoilage.

- **Separation of products:**
  - Different types of poultry products should be stored separately to prevent cross-contamination.
  - Raw poultry should be stored separately from cooked or processed products to prevent any risk of contamination.

- **Monitoring and control:**
  - Storage temperatures and conditions should be monitored regularly to identify any deviations that could compromise the quality and safety of poultry products.
  - Proper temperature control systems should be installed to maintain optimal storage conditions.

10.2 Transportation

- Poultry meat products should be transported in specially designed vehicles operated by a responsible and trained driver.

- **Temperature control:**
  - Poultry products should be transported under controlled temperature conditions to prevent bacterial growth and spoilage.
  - The recommended temperature for transporting fresh poultry products is below 4°C to inhibit bacterial growth.
  - Frozen poultry products should be transported at minus 18 °C.

- **Handling procedures:**
  - During transportation, poultry products should be handled with care to avoid physical damage and contamination.

- **Sanitation:**
  - Transport vehicles should be regularly cleaned and sanitised.

- **Compliance with regulations:**
    - The transportation of poultry products should comply with local, national, and international regulations regarding food safety, transportation, and handling practices.
    - Regular inspection of transport vehicles and their temperature control systems should be conducted by the designated regulatory bodies.

11 Traceability system

11.1 A traceability system procedure

A traceability system procedure refers to the process of tracking and documenting the movement of products or materials through various stages of production, processing, and distribution.

- This system is crucial for ensuring transparency, quality control, and compliance with regulations.
- The traceability tool, when combined with appropriate measures and requirements, improves food safety outcomes, as well as the effectiveness and efficiency of the actions of the competent authority.
- Farm-to-fork traceability requires the effective implementation of both on-farm and off-farm tracking processes.
- Adopting uniform traceability requirements ensures agreement between parties about the identification of traceable items.

11.2 Key components of traceability

- A documentation system must be in place to retain records of data generated, ensuring that poultry products are traced from the farm to the distribution centres.
- Personnel should be trained on the principles of identification and traceability systems and how to implement them with dedication and honesty, as this is essential for accurate record-keeping and documentation.
- Suppliers or distribution centres should, if possible, mark cases with human-readable data. Hard copies of traceability records should be maintained from farm to distribution, particularly in poultry abattoirs where systematic implementation and the use of all necessary records and documents are required for verifications.
- The traceability system should be audited periodically to overcome any deviations or non-conformities within the supply chain.

11.3 Paper-Based Traceability System

Table 1: Paper-based traceability

Actor type /location	Recommended data need
At poultry farm level	• Name of farm or association of farms • Farm registration Number • Poultry Batch Number • Site location • Date and starting time of transportation (to abattoir) • Vehicle plate number and Driver's name • Number of poultry transported • Initial Ante-Mortem Inspection results • Responsible person's name and signature
Poultry abattoir (processing)	• Farm registration number for transported poultry • Poultry batch number • Date and receipt time of the poultry • Ante-Mortem Inspection results • Date of slaughtering or packing • Post-Mortem Inspection results • Veterinary Certificate records, if available • Labelling records

	• Date and name of the supplied company or person, with the product type and amount • Net weight of product • Gross weight of product • Number of bags per container/truck • Date of transportation to local or export market
Transporter	• Cold trucks (vehicles in clean condition) • Departure and arrival date and time • Transporting company (if applicable)

12 Product recall

A product recall is a firm's voluntary or mandatory withdrawal of distributed poultry meat and egg products from the market when there is reason to believe they are adulterated or misbranded under the provisions of the regulatory authority's act.

Withdrawn products should be secured or held under supervision until they are either destroyed, repurposed for non-original uses, confirmed safe for the same (or other) use, or reprocessed to ensure safety.

For non-conforming products, establish a documented procedure as follows:

1) Identify the batches or lots affected.
2) Prepare documentation for managing and recording non-conforming products.
3) Evaluate the cause of the non-conformance.
4) Segregate the batches affected.
5) Communicate with relevant parties.
6) Take preventive or corrective action to avoid repetition of the non-conformance.
7) Follow the risk analysis framework (risk assessment – risk management – risk communication).

13 Regulation, inspection and certification

In the poultry industry, regulation, inspection, and certification play crucial roles in ensuring the safety and quality of poultry products, including meat and eggs, whether for domestic consumption or export purposes. These processes are essential for safeguarding public health, animal welfare, and maintaining consumer confidence in poultry products.

13.1 Regulation

Implementing regulations for poultry meat and egg safety is essential. These regulations cover various aspects of production and distribution to ensure compliance with food safety standards.
Regulations typically cover areas such as hygiene practices, sanitation standards, waste management, animal welfare, labelling requirements, and the use of additives or veterinary drugs. They also set specific guidelines for the slaughtering process itself to minimise contamination risks and ensure humane treatment of animals.

13.2 Inspection

Inspection processes are carried out by trained professionals to verify that poultry slaughtering houses comply with regulatory standards. These inspections may be conducted by competent, authorised meat inspectors or by third-party organisations approved by the relevant authorities.

Inspections involve thorough assessments of facilities, equipment, and procedures to identify any potential risks to food safety or animal welfare. Regular inspections are crucial for detecting and promptly addressing any issues to prevent the distribution of unsafe products.

- **Types of inspection**

There are different types of inspections in slaughterhouses and egg production facilities, such as:

  - Approval for newly constructed poultry abattoirs
  - Renewal audits for existing poultry abattoirs
  - Ante-mortem inspection (AMI)
  - Post-mortem inspection (PMI)
  - Sanitation and hygiene inspections

- **Approval inspection of new poultry abattoir**
  - A newly constructed poultry abattoir should be inspected in accordance with the pre-established requirements set by the competent authority for approval.
  - This inspection covers structural, functional, and managerial compliance, including testing the functionality of all machinery necessary to commence proper operations in the abattoir.
  - A structured and comprehensive audit inspection checklist (Annex VI), prepared by the competent authority, is used for this inspection.

- **Renewal audit of the existing poultry abattoir**
  - This audit provides assurance that the structures and functionality of the abattoir are still in compliance with the established inspection criteria.

- **Ante-Mortem Inspection (AMI)**

There are two subcategories of AMI, namely initial and final AMI.

- **Initial** a**nte-mortem inspection**
  - The initial ante-mortem inspection (Annex III) should be conducted at the farm level immediately prior to transporting the poultry to the abattoir, usually within one hour before transportation.

- It is conducted by trained public meat inspectors responsible for the district, trained private veterinarians responsible for the poultry farm, or by veterinarians delegated for this purpose by the competent authority.
- Only physiologically active and apparently healthy poultry should be approved for slaughter, then caged and loaded onto cleaned and sanitised vehicles for transport.
- All necessary documents and records, completed and signed by the appropriate responsible persons, should accompany the poultry to the abattoir.

- **Final ante-mortem inspection**
  - The public meat inspector responsible at the abattoir should conduct the final ante-mortem inspection according to the prescribed procedures as soon as the poultry reaches the abattoir.
  - This inspector supervises and controls the humane handling and proper unloading of the caged poultry from the vehicle, placing them in a resting room or lairage for this purpose, while verifying the records or documents sent from the farm of origin with the vehicle, such as:

    - Full address of the farm of origin
    - Ownership of the poultry
    - Number of poultry sent, with the vehicle plate number and driver's name
    - The initial ante-mortem inspection records.

  - Resting room(s) or holding pens for uncaging and storing the incoming broilers should be provided in order to conduct the inspection.
  - The condition of the poultry upon arrival should be visually inspected as a flock, and any abnormal conditions observed should be closely examined.
  - Upon close inspection, any dead, moribund or diseased poultry should be condemned immediately and sent to the incinerator for burning or buried.
  - No broiler which has been brought to the abattoir compound for the purposes of slaughter shall be removed from the abattoir unless written permission is granted by the inspecting officer.
  - The remaining broilers found to be normal can proceed to slaughter, with a record kept of all findings, including the number condemned and the number passed, in the final ante mortem inspection format (see Annex IV).

- **Postmortem inspection**
  - After slaughtering, each carcass and its offal are inspected for wholesomeness, quality, and safety by competent authority inspectors who oversee, verify and check the entire process, assisted by the company's quality control experts.
  - During the evisceration process, each carcass and its viscera are inspected visually and by palpation to assess disease conditions, contamination or bruising.
  - The internal organs should be drawn out, either remaining connected to the body or examined separately on a tray.
  - The external carcass inspection should cover the entire surface of the body as well as the head, tail, wings and legs.
  - Upon postmortem inspection, any carcasses found to be contaminated, bruised, or affected by pathological, or disease conditions must be totally condemned, in compliance with the relevant national regulations and standards.
  - For diagnostic confirmation of some pathological conditions identified during postmortem examination, samples may be sent to the in-house laboratory, if available, or to a larger accredited laboratory for analysis. Corrective actions should then be taken as necessary based on the findings.
  - When applying the meat inspection legend by marking or stamping the carcasses, their parts or packaging, the following points should be observed:
  - All stamps should be constructed of a non-toxic, non-corrosive material and be easy to clean.
  - The stamps should contain the abattoir registration number, and the wording "Inspected and Passed" should be written in accordance with the laws of the competent authority.
  - If the meat product is being sent from the abattoir to the domestic or export market, a Veterinary Health Certificate should be issued in accordance with national or international regulatory requirements.

- **Control of hygienic dressing and sanitation**

During dressing, the carcass is exposed to contamination from:

- The abattoir environment, including implements used, and the hands of operators,
- Poultry feathers, and

- Gastrointestinal contents.

Therefore, during meat inspection, it is important for the inspecting officer to ensure that:

- The implements used during slaughtering, dressing and meat inspection are well cleaned and sanitised periodically or whenever they are likely to be contaminated during work.
- The viscera are not accidentally opened during the dressing procedures or during evisceration.

Pre-requisite programs such as good manufacturing practices (GMP) and good hygienic practices (GHP) must be implemented to ensure safe and high-quality production at all times.

- **HACCP and other food safety management systems for poultry slaughtering**

Hazard Analysis and Critical Control Points (HACCP) is a systematic preventive approach to food safety that focusses on controlling physical, chemical, and biological hazards rather than relying solely on finished product inspection. Following HACCP procedures in poultry slaughtering is crucial to ensure the safety and quality of poultry products.

- **Preliminary steps**
  - Conduct a hazard analysis to identify potential hazards associated with poultry meat production. This includes assessing biological, chemical, and physical hazards that may be present at each stage of the process. Analysis of these hazards should consider both their severity and frequency of occurrence, and they should be categorised according to their level of criticality.

- **Establishing Critical Control Points (CCPs)**
  - Critical control points are specific points in the poultry slaughter process where measures can be applied to prevent, eliminate, or reduce identified hazards to acceptable levels. These points may include operations such as stunning, bleeding, scalding, de-feathering, evisceration, and chilling or freezing.

- **Monitoring procedures**
  - Once critical control points are established, monitoring procedures must be put in place to ensure they are effectively controlled. This involves conducting regular checks and measurements to verify that the process is within safe limits at each point.

- **Corrective actions**
  - If monitoring indicates a deviation from an established critical limit at a CCP, corrective action must be taken. Any action taken should be predetermined and documented in the HACCP plan.

- **Verification**
  - Verification procedures are essential to ensure that the HACCP system is functioning effectively. This may involve reviewing records, conducting periodic audits, and testing samples to validate the effectiveness of the system.

- **Record keeping**
  - Maintaining accurate records is a fundamental requirement of HACCP in poultry slaughtering. Records should include reports of hazard analyses, CCPs, monitoring results, corrective actions taken, verification activities, and other relevant documentation that provide evidence of compliance.

- **Training**
  - Proper training of personnel involved in the poultry slaughtering process is crucial for the successful implementation of HACCP guidelines. Employees should receive training in food safety practices, HACCP principles, and their specific responsibilities within the HACCP plan.

By following these HACCP guidelines, producers can ensure that their products meet stringent food safety standards and provide consumers with safe and high-quality poultry products.

The Food Safety Management System (FSMS, ISO 22000) and Quality Management System (QMS, ISO 9001) are international standards that should be customised, documented and implemented, particularly in large poultry abattoirs intending to export their products to international markets.

The implementation and effectiveness of HACCP and FSMS are controlled, monitored and verified by the competent authority, with corrective actions taken as necessary.

13.3 Certification

Certification serves as formal recognition that a poultry slaughtering house complies with relevant regulations and meets specified quality standards. Certification may be voluntary or mandatory depending on the jurisdiction and market requirements. Certifying bodies assess compliance through audits, documentation reviews, and on-site visits.

Once certified, poultry products may bear labels or seals indicating their compliance with specific standards, providing assurance to consumers and facilitating access to certain markets.

- **Abattoir certification**
  - The newly constructed poultry abattoir must be granted a certificate of competence (Certificate of Approval for Abattoir) after inspection, provided it meets the pre-established requirements set by the competent authority, ensuring it is fit to start production.
  - The certificate of competency should be renewed annually after monitoring and inspection of the abattoir.

- **Product certification**
  - After all inspections are completed and the competent authority's meat inspector is satisfied that carcasses and other products are free from defects, abnormalities and diseases, the abattoir is issued a Veterinary Health Certificate, certifying that the meat and other products are safe for human consumption.
  - Meat, whether packaged or not, must be stamped systematically to show the results of the inspection. This provides consumers with an official assurance or guarantee of the safety and wholesomeness of the meat.

- **ISO-Standard certification**
  - The Food Safety Management System (ISO 22000) and other ISO Standards can be certified by recognised certification bodies, so that the production system is acknowledged nationally and internationally for its quality and safety.

- **Other religious certification**
  - Halal certification for both the product and the establishment may be granted upon compliance with Islamic Sharia laws.

14 Waste management

Slaughtering house waste management is a critical aspect of the meat processing industry. Proper waste management is essential for environmental sustainability, public health, and compliance with regulations. There are several key components to consider when addressing slaughtering house waste management.

- **Waste segregation and handling**
  - Slaughtering house waste management should involve the segregation and proper handling of solid, liquid, and organic waste.

- **Treatment and disposal**
  - After segregation, appropriate treatment and disposal methods should be used for different types of waste.
  - It is crucial to comply with local regulations for the disposal of slaughterhouse waste.

- **Re-cycling and re-use**
  - If possible, recycle and reuse materials from slaughterhouse waste. For example, animal by-products can be used in the production of pet food, fertilisers, and industrial products.
  - Wastewater can be treated and reused for non-potable applications, reducing overall water consumption.

- **Energy recovery**
  - Slaughterhouse waste management should be made more efficient by recovering energy.
  - Biogas generated from organic waste can be harnessed as a renewable energy source for on-site use or fed back into the grid.
  - These practices not only reduce the environmental impact but also contribute to cost savings for the facility.

- **Regulatory compliance**
  - Compliance with environmental regulations is paramount in slaughterhouse waste management.
  - Facilities must comply with the standards set by national and regional environmental agencies regarding waste disposal, emissions control, and wastewater treatment.

15 Emergency preparedness and response

15.1 Emergency preparedness and response plan

A comprehensive emergency response plan is crucial for poultry slaughterhouses. The plan should outline specific procedures for different types of emergencies.

Emergency prevention for poultry slaughtering
Implementing effective prevention measures and emergency preparedness is crucial to mitigating risks and ensuring a swift, efficient response in case of an emergency.

- Conducting a comprehensive risk assessment is essential to identify potential hazards in poultry slaughterhouses.
- Properly trained employees are essential in preventing emergencies in poultry slaughterhouses.
- Regular machinery and equipment maintenance is vital to prevent malfunctions that could lead to emergencies.
- Strict biosecurity protocols are essential to prevent the spread of disease among poultry flocks.
- Establishing strong communication channels with local authorities, emergency services and regulatory agencies is important for effective emergency preparedness.
- Poultry slaughterhouses must comply with environmental protection regulations to prevent pollution incidents.
- Regularly reviewing and updating prevention measures, emergency response plans and safety protocols is crucial for continuous improvement.

Emergency preparedness for poultry slaughtering
For emergency preparedness in poultry slaughterhouses, a comprehensive plan must be put in place to ensure the safety of both workers and animals. Here are some key aspects to consider:

- Training and Education: Proper training and education of all personnel involved in the slaughtering process is essential. This includes training on emergency procedures, such as actions to take in the event of equipment failure, power outages, or other unforeseen circumstances.
- Equipment Maintenance: Regular maintenance and inspection of all equipment used in the slaughtering process is vital to prevent malfunctions that could lead to emergencies. This includes maintaining sharp knives, ensuring proper functioning of stunning devices, and regularly checking the condition of electrical systems.
- Emergency Response Plan: Developing a detailed emergency response plan specific to poultry slaughterhouses is critical. This plan should outline procedures for various emergency scenarios, such as fires, chemical spills, equipment malfunctions, and natural disasters. It should also include evacuation routes, assembly points, and communication protocols.
- First Aid and Medical Facilities: Having adequate first aid supplies on-site and trained personnel to administer first aid is essential. Additionally, access to medical facilities or emergency medical services should be readily available in the event of a serious incident.
- Animal Welfare Considerations: In the event of an emergency, ensuring the welfare of the animals being slaughtered is important. Plans should be in place for humane handling and care of animals during any emergency situation.
- Regulatory Compliance: Adhering to all relevant regulations and standards set by local authorities and regulatory bodies is crucial to ensuring that the facility is prepared for emergencies.

15.2 Poultry slaughtering emergency responses

In the event of a poultry slaughtering emergency, it is crucial to have a plan in place to ensure the safety of employees, animals, and the public. The following are some emergency responses for poultry slaughtering operations:

Evacuation procedures:

- In the event of a fire, explosion, or other hazardous situation, all personnel must be evacuated immediately. Ensure that everyone knows the location of the nearest emergency exits and assembly points outside the building.

Emergency shutdown:

- If there is an electrical or mechanical failure, shut down the equipment and notify the appropriate personnel. Do not attempt to repair the equipment yourself, as this can be dangerous.

Hazardous materials spill:

- In the event of a hazardous materials spill, immediately notify local authorities and follow their instructions. Do not touch or attempt to clean up the spill yourself, as this can be dangerous.

Injuries and illnesses:

- In the event of an injury or illness, call for immediate medical attention. If the injury or illness is severe, call your local emergency number.

Power outage:

- In the event of a power outage, check the facility's backup power sources, such as generators or battery systems. If the backup power sources are not functioning, contact the utility company to report the outage and arrange for repairs.

Animal welfare concerns:

- In the event of an animal welfare concern, such as an injured or distressed animal, contact a qualified veterinarian or animal welfare expert immediately.

Communication plan:

- In the event of an emergency, establish a communication plan to ensure that all personnel are informed of the situation and necessary actions. Use reliable communication methods, such as two-way radios or cell phones, to contact everyone quickly and effectively.

Emergency response plan:

- Develop an emergency response plan that outlines procedures for handling emergencies such as fire, explosions, hazardous materials spills, and animal welfare concerns.

Training and drills:

- Provide regular training and drills for all personnel on emergency response procedures, including evacuation, emergency shutdown, and hazardous materials spill response.

Emergency equipment:

- Ensure the facility has the necessary emergency equipment, such as fire extinguishers, first aid kits, and spill response supplies, and that all equipment is regularly inspected and maintained.

16 Egg quality and safety

Egg quality and safety are crucial throughout the egg production process, from harvesting to distribution. Several factors contribute to maintaining egg quality and safety, including proper handling, storage, and transportation.

Harvesting eggs

- The process of harvesting eggs involves collecting them from the laying hens.
- Ensure that eggs are clean and free from any contaminants during this stage.
- Proper hygiene practices, such as handwashing and the use of clean collection equipment, are essential for maintaining egg quality and safety.

Storage and handling

- After harvesting, eggs need to be stored at the appropriate temperature to maintain their quality.
- Proper handling techniques, such as avoiding sudden temperature fluctuations and preventing physical damage, are essential for preserving egg quality.
- Additionally, storing eggs in a clean, sanitised environment helps prevent contamination.
- Eggs placed in storage must be clean, but they should not be washed or wet.
- Packaging materials should be new, clean and odourless.
- Water loss due to evaporation should be minimised.
- The storage room must be free of tainting products and materials, and it should be cleaned regularly with odourless detergent and sanitisers.
- The storage room must be kept at a constant temperature with humidity levels closely monitored.
- The storage room should be well ventilated.
- Eggs should be stored in a way that allows them to breathe.
- Interior product quality should be monitored as much as possible; the egg white should be thick, the yolk should stand up well, and both the white and yolk should retain good flavour.

Transportation

- It is crucial to protect eggs from breakage and temperature fluctuations during transportation.
- Specialised packaging and transportation methods are used to ensure that eggs reach their destination without compromising their quality and safety.
- The containers and packaging materials must protect the eggs from mechanical damage.
- Care should be taken during all stages of handling and transport. Workers should be trained to understand the importance of careful handling. Providing convenient loading platforms at packing stations, loading depots and railing stations, along with handling aids, such as hand trucks and lifts, are of great help.
- Eggs must be protected at all times from temperatures that may cause quality deterioration, as well as from contamination, especially tainting.
- The permissible temperature range during loading and transport depends on local climatic conditions and the duration of the journey.

Quality control measures

- Quality control measures play a significant role in ensuring egg safety.
- Egg grading typically considers both external and internal parameters, such as shell features (e.g., cleanliness, strength, texture, and shape), albumen viscosity, and yolk shape and firmness.
- These measures include regular testing for contaminants, such as *Salmonella*, as well as monitoring of overall egg quality throughout the production process.

Distribution

- During distribution, proper handling and storage practices must be followed to maintain egg quality.
- Timely delivery and appropriate storage conditions at distribution centres help in ensuring that consumers receive fresh and safe eggs.

17 Marketing

Poultry products encompass a wide range of items, including whole carcasses, deboned meat cuts, various bone-in parts, and meat products from chicken, turkey, duck, and eggs. Marketing these products requires a comprehensive understanding of consumer preferences, industry trends, and regulatory requirements. The following are detailed guidelines for marketing poultry products:

Understanding the market

- Before developing a marketing strategy for poultry products, it is crucial to understand the market dynamics. This involves conducting thorough market research to identify consumer preferences, purchasing behaviours, and industry trends. Understanding the target audience is essential for tailoring marketing efforts effectively.

Product differentiation

- In a competitive market, it is important to differentiate poultry products from those of competitors. This can be achieved by emphasising quality, organic or free-range attributes, nutritional value, or unique processing methods. Highlighting these unique selling points helps set your poultry products apart in the market.

Branding and packaging

- Effective branding and packaging play a significant role in marketing poultry products. A compelling brand identity and packaging design can attract consumers and communicate the product's quality and values. Ensure that branding aligns with the target market's preferences and values.

Promotional strategies

- Promotional strategies are essential for creating awareness and driving sales of poultry products. This may include advertising across various media channels, promotional offers, participation in trade shows or food fairs, and leveraging social media platforms to engage consumers.

Compliance with regulations

- Marketing poultry products requires strict adherence to regulations on food safety, labelling, and animal welfare standards. Compliance with these regulations is essential for maintaining consumer trust and meeting legal obligations.

Distribution channels

- Identifying effective distribution channels is crucial for reaching consumers with poultry products. This may involve partnerships with supermarkets, restaurants, wholesalers, or direct-to-consumer sales through e-commerce platforms. Each channel requires a tailored marketing approach.

Consumer education

- Educating consumers about the nutritional benefits, cooking methods, and versatile uses of poultry products can enhance their appeal. Sharing recipes, cooking tips, and nutritional information through various channels helps increase consumer confidence in purchasing poultry products.

Sustainability and ethical practices

- Incorporating sustainability practices and ethical considerations into the marketing strategy can resonate with environmentally conscious consumers. Emphasising sustainable farming practices, animal welfare standards, and eco-friendly packaging can be compelling selling points.

Market expansion strategies

- For established brands or companies looking to expand their market reach, strategies such as product diversification, entering international markets, or collaborating with celebrity chefs or influencers can create new marketing opportunities for poultry products.

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Annex I Findings from GMP, GHP, PRP, and HACCP audits of poultry abattoir

Manufacturer's Name _____

Phone/Fax _____ /_____ P.O. Box: _____Email_____

Country _____Region/State _____ City/Town _____ Zone/Province

_____ Woreda/Kebele _____ Date of inspection (DD/MM/YYYY) _____

Product type _____

Inspection type _____

Total number of workers: Temporary – Male ___, Female ___; Permanent – Male __, Female ___

Total number of food handlers: Temporary – Male ___, Female ___; Permanent – Male __, Female __

Status of the plant/abattoir on the date of visit: Working _____ Not working_____

Daily production capacity _____

Number of shifts: [1] / [2] / [3]; Number of working days per week: [5] / [6] / [7]_____

Certifications (National, HACCP, ISO, GMP or other) _____

Person responsible for the plant:

Name _____ Title _____ Position _____

E-mail _____ Fax _____ Tel. _____

Annex II Structural requirements and maintenance

Location	Criteria/Control procedures	Compliant (C)	Non-Compliant (NC)	Not Applicable (NA)	Objective evidence / Remarks
Abattoir site construction	Located at least 500 meters from residential areas At least 500 meters from rivers, or other surface water bodies, and trees At least 1 km from odour-, ash- or smoke-emitting industries (cement, paint and tannery) At least 500 meters from fattening/poultry farms, quarantine stations, other abattoirs, or rendering plants				
Main Entrance	Secure, lockable gates at main entrance Tyre bath: dimensions 3m x 2.5m x 0.3m; disinfectants to be changed regularly Tyre bath: disinfectant with proper water supply and drainage system Presence of guards and guardhouse Vehicle entry records maintained				
Visitors' reception and changing rooms	Room available with chairs and a cupboard Clean, protective clothing available in a range of sizes Health declaration record form available and recorded at the entrance Visitor records: name, reason for visit, institution, and person or area to be visited				
Main campus buildings	Perimeter fence: intact masonry wall, at least 2 meters high Premises and yard design: structure and layout permit easy cleaning and sanitation Sound construction and well maintained Green areas: free of refuse Internal roads or walkways: constructed of asphalt or cobblestones, with proper drainage Building layout: physically separated into clean and dirty sections No large trees on the premises				
Location	Criteria/Control procedures	Compliant (C)	Non-Compliant (NC)	Not Applicable (NA)	Objective evidence / Remarks
Poultry reception entrance gate	Secure lockable gate Standard tyre bath: dimensions 3m x 2.5m x x0.3m				

Location	Criteria/Control procedures	Compliant (C)	Non-Compliant (NC)	Not Applicable (NA)	Objective evidence / Remarks
Transport, off-loading, holding & welfare	Tyre bath: disinfectant or chemical provided with water supply and drainage system Presence of guard(s) and guard house Vehicle entry records maintained Humane poultry handling during transport, offloading & holding (provide shade and ventilation). Poultry slaughtered within 4 hours of arrival Removal and washing of crates at designated sites Correct handling of dead-on-arrival (DOA) and injured poultry: handled according to established protocols Humane handling during stunning				
Personnel changing rooms	Clean rooms: suitable and adequate in size for each gender Lockers for each worker Clean protective clothing provided				
Personnel toilet and showers	Showers and toilets maintained in good condition Sufficient number of toilets and showers for personnel: one per 15 males and one per 10 females. Urinals for males (one per 25 males) Automatic hand-washing basin, equipped with accessories such as liquid soap and electric hand dryers Walls and floors finished with appropriate ceramics Partitions and doors made of smooth non-absorbent aluminium or hard plastic Cleanable bins provided in each toilet				
Meat inspectors' office	Enough rooms provided for inspectors: 11 m^2 per inspector, and an additional 1.4 m^2 for each additional inspector Furnishings: equipped with office materials and shelf lockers Separate adjoining showers and toilets with handwashing facilities				
First aid room	Dedicated room provided First aid facilities provided according to Ministry of Health standards Trained first-aid provider available				

Location	Criteria/Control procedures	Compliant (C)	Non-Compliant (NC)	Not Applicable (NA)	Objective evidence / Remarks
Laboratory	At least two rooms provided: office and lab Trained Lab technician available Floor finished with cement tiles; walls painted in white oil paint Microbiological testing: basic tools, equipment and reagents or chemicals provided Water supply: hot- and cold-water systems provided Standard methods of analysis (MoA lab manual) followed, with lab test records maintained Chemicals and reagents: labelling and expiry dates checked frequently External Lab Agreement: contractual agreement in place with an accredited laboratory for microbiology and residue monitoring, with periodic feedback given				
Canteen	Room available, adequate in size for the number of workers Furnished with necessary materials (chairs and tables) Maintained for cleanliness and hygiene, with hand washing facilities				
Fire protection equipment	Located in strategic and accessible areas Functional and within valid expiry date				
Backup generators	Appropriate diesel generators available Functional				
Sterilisation room	Room located adjacent to slaughter hall Walls painted with oil paint and floors finished with cement screed Equipped with at least an autoclave or an electric water heater container				
Equipment storage room	Room available and attached to the slaughter hall Walls finished with light-coloured plastic paint and doors with cement tiles				

Location	Criteria/Control procedures	Compliant (C)	Non-Compliant (NC)	Not Applicable (NA)	Objective evidence / Remarks
	Furnished with metal shelves coated with synthetic anti-rust paint				
Car washing area	Standard designated area provided Pressurised water provided Proper drainage installed				
Maintenance workshop	Workshop provided Clean and functional Clean and free from moisture				
Waste management	All inedible and condemned materials handled and disposed of according to protocol Waste handling: adequate facilities to handle all categories of waste material Waste containers: sufficient for general refuse and inedible materials Refuse storage areas: provided to store refuse until it is removed; kept clean and tidy Waste containers: all containers enclosed or fitted with tight-fitting lids Traps for solids, fat, and feathers: effective and cleaned continuously. Feather disposal: standard operating procedures (SOP) in place for effective handling and disposal Effluent disposal: system effectively managed according to SOP Wastewater treatment provided Incinerator: installed and in proper working condition				

Annex III Inspection procedures for poultry slaughterhouse production line (GMP, PRPs-GHP, and HACCP findings)

Location	Criteria/Control procedure	Compliant (C)	Non-Compliant (NC)	Not Applicable (NA)	Objective evidence / Remarks
Staff entrance to production hall	Doors must be self-closing, lockable, smooth and non-absorbent Footbath with chemical solution and drainage located at the doorway Insect-control lamp mounted above the inside door Hand-wash basins (hot and cold water, automatic sensors) provided in sufficient number for personnel Liquid soap, disinfectant solution, and hand drying system provided Notices or instructions on handwashing and disinfection Supervisor present				
Cold trucks	Number of trucks matches daily maximum production capacity Instruments: functional with temperature gauge display Walls and floors: smooth, white, and free of cracks Doors: airtight and lockable Trucks: clean and hygienic				
Dispatch	Packaging and labelling in accordance with relevant protocols Temperature maintained at 10 ^{0}C Door: fitted to the truck only Clean and hygienic No mixing of rough offal with red offal and carcasses Stainless steel tables and hard plastic containers				
Chilling/freezing rooms	Number matches daily maximum kill, with proper temperature management Walls, floors and ceiling are smooth, impervious, with no cracks Standard airtight doors Floors are non-slippery Temperature gauge and thermograph installed Stainless steel or plastic equipment for carcass chilling				
	Trimming: unwanted portions collected in plastic receptacles				

Quality control	Steriliser available, knives exchanged regularly
	Handwashing basins provided with necessary accessories
	Weighing
	Carcasses washed if necessary, and graded
Slaughter hall	Floors free of cracks, finished with strong whitish epoxy or ceramic tiles
	Walls free of cracks, finished with strong white ceramic
	Corners curved at 45^0 angles
	Roof free of cracks, condensation, and flakes
	Line rails automatic and free of rust
	Insect traps installed in necessary locations
	Drainages (from clean to dirty with no stagnant water)
	Cleaning and disinfection implemented
	Equipment and building maintained in good condition
	Lighting: adequate natural or artificial lighting (200 lux generally, but 500 lux at inspection sites)
	Temperature at a minimum of 12 ^{0}C
	Hooks and hangers made of stainless steel
	Good ventilation
	Hot and cold-water supply system available at every subsection of the abattoir
Offal processing	Red offal (giblets) handled and packaged properly
	Rough offal (head, feet, and intestines) handled and packaged properly
	Gizzards cleaned effectively
	Packing and wrapping materials handled properly
	Offal dispatched appropriately
Detention room	Provided
	All accessories installed (hand wash facility with sterilisers, stainless steel tables)
Condemnation room	Available with lockable gate open to the outside
	Clean, with handwashing facility provided
Meat inspection and marking	Primary carcass inspection conducted
	Detained or condemned materials properly handled and secured in identifiable receptacles
	Adequate lighting installed at inspection points
	All outgoing products marked with approved stamps or labels
Slaughtering & processing	Performed on the hanging hooks conveyor (hooks made of stainless steel)
	Washing carcasses

	Steriliser maintained at 82°C and used appropriately
	Automatic evisceration (if available)
	Rinsing process performed before evisceration
	Wash basins equipped with warm water and soap
	Effective scalding procedures using scalding machine
	Effective de-feathering procedures
	Correct bleeding procedure followed
	Correct stunning equipment and procedure used
	Slaughter floor, hygiene, including continuous cleaning
Reception of poultry for slaughter	AMI done at the farm, and poultry history provided together for verification
	Poultry transported to the slaughter facility in clean crates
	Dead-on-arrival poultry are immediately removed from the flock and buried at a designated site away from the river and lakes
	Trained handlers carefully suspend poultry by their feet on a moving rail line
	Rub bars in dimly lit section located just after the poultry are hanged
Maintenance and calibrations	Temperature gauges or logs
	Sterilisers
	PH meters
	Back-up generator
	Water pumps
	Chillers or freezer rooms
	Cold trucks
	Maintenance records
Standard Operating Procedures	Sanitation of each production line location
	Personal hygiene
	Dilution and handling of chemicals
	Poultry reception and handling
	Slaughter and bleeding
	De-feathering
	Scalding
	Evisceration

	Red offal removal Red offal preparation Washing of carcasses Chiller loading Packaging and dispatch
Planned training programs **Personnel records**	Training provided for each personnel Records kept Date of employment Biannual medical check-ups, or as deemed necessary Routine weekly health declaration records
Records for verification	Chiller and carcass temperature log records Daily sanitation checks Chemical dilution checks Water chlorination Pest control
Pest control	Pest control procedures and programmes are provided Prevention of pest access, harbourage and infestation, along with monitoring, detection and eradication, are conducted according to established protocols If pest control is outsourced, a legal agreement certificate and feedback report on implementation are provided
Self-Audit	Regular self-inspection program implemented Self-inspections conducted Corrective actions taken based on findings of self-inspections
Water supply system	Deep borehole water supply system sufficient for continuous intended use, or municipal water connection Water boreholes and water storage tanks should be 100 meters away from wastewater septic tanks and treatment plants Quarterly microbiological and chemical testing for potability is conducted by a public health laboratory in accordance with drinking water standards in Ethiopia Stand-by water pumps are available in case of failure Water is distributed to all sub-sections of the abattoir Water storage system (plastic, fabric or stainless steel) sufficient for daily use A chlorination injection system should be installed and properly regulated

Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE FS)

www.raise-fs.org

Stichting Wageningen Research Ethiopia

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Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE-FS) is a four-year program funded by the Dutch Embassy in Addis Ababa and hosted by Stichting Wageningen Research Ethiopia based in Addis Ababa, to bring about transformation in the Ethiopian food system. RAISE-FS will develop and implement a demand-driven and interdisciplinary approach to Research for Food System Transformation (R4FST) and as such contribute to the Government of Ethiopia's transformational agenda.