Annex 4 Manual of inspection procedures at meat production and processing establishments

Table of contents

I Introduction

This manual has been prepared as an aid for food inspectors to make the fulfilment of their tasks easier and to ensure a uniform approach to the Public supervision of meat chain.

The manual provides necessary information on hygiene requirements in respect of fresh meat production as well as it lays down criteria, which can be used by a competent authority when assessing compliance of establishments involved in meat production and distribution chain with hygiene requirements.

The manual covers requirements of good manufacture practice and information on HACCP system development.

Inspection – practical checks at the establishment in order to assess its compliance with regulatory documents, documentary checks at the supervised establishments in the territory of Ethiopia (for example, if documentary inconsistencies are found out at the establishment: personal medical books, documents of self-control system, accompanying documents, etc.)

Instructions have been prepared based upon compliance with the EU Directives 64/433/EEC on health condition for the production and marketing of fresh meat; 94/65/EC laying down the requirements for the production and placing on the market of minced meat and meat preparation; 77/99/EEC on health problems affecting the production and marketing of meat products and certain; 71/118 EEC on health problems affecting the production and placing on the market of fresh poultry meat; 92/45/EEC on public health and animal health problems relating to the killing of wild game and the placing on the market of wild – game meat; 91/495/EEC concerning public health and animal health problems affecting the production and placing on the market of rabbit meat and farmed game meat; 91/119 EC on the protection of animals at the time of slaughter or killing and state standard of Denmark " DS 3027: Food safety according to HACCP – Requirements to be met by food producing companies and their subcontractors" DS 3027:1997; Codex Alimentarius " Food Hygiene – Basic texts".

II Responsibilities and rights of inspectors

II.1 Responsibilities

- to carry out checks and controls at meat production and meat processing establishments, including preparation and execution of laboratory examination plans, monitoring programs on products and environment, preparation of proposals and decisions on stoppage of the supervised establishments;
- upon arrival to the establishment, inspector shall:
- produce his/her identity card and introduce him/herself;
- clarifies the person in whose presence the inspection shall be carried out;
- familiarizes a responsible person of the establishment with the target and tasks of the inspection;
- familiarizes the establishment with the inspection results.
- food inspectors shall ensure confidentiality of information obtained in the result of the Public supervision and control. The confidentiality does not apply to information on product hazard or danger to animal health and life or environment;
- to improve regularly qualification by attending training courses and seminars;

- to provide advisory assistance to physical and legal persons;
- to carry out analysis of the supervision results, trends, to prepare summaries and reports on the accomplished assignments, proposals for performance improvement.

II.2. Rights of inspectors

The inspector shall have the following rights:

- without a preliminary notice to visit objects subjected to the State veterinary supervision, to require documents and information, to get acquainted with materials, to take copies of the documents and make excerpts of the documents as well as to carry out the necessary measures, ensuring the State supervision and control;
- in accordance with regulatory documents to take samples and send them for testing to an accredited laboratory. In case any non-compliance is found with requirements laid down in regulatory documents, the food processing establishments shall cover costs of such checks;
- to suspend operation of the object subjected to the State veterinary supervision, also to stop or prohibit races, fairs, auctions, shows and other undertakings with the participation of animals if a possible occurrence of infectious animal disease is suspected and human or animal health is at a risk as well as in cases when requirements of regulatory documents have been neglected;
- in case of infringements, to impose administrative penalties upon responsible persons as provided by legal acts;
- if necessary, to prepare materials for law enforcement institutions, to call guilty persons to account for criminal offence;
- if necessary, to invite police or any other law enforcement institution to ensure the fulfilment of the tasks;
- in accordance with the currently valid legal acts, and until the clarification of circumstances, to suspend operation of the food establishment or distribution of food stuffs, to recognize foods stuffs as unsuitable for distribution and to withdraw them from circulation if a justified suspicion as to harmlessness of the food in question to human health, life and environment, have risen;
- if any product of a certain batch of products does not comply with requirements laid down in regulatory documents, then consignments of all batches of similar type or class of products shall be recognized as non-compliant with requirements, excluding cases when a full analysis of the food in question confirms the compliance of the rest of food stuffs with requirements;
- to supervise and control periodicity and scope of compulsory health checks of the staff and how hygiene requirements are met by the staff, reading of measurement values shown by measuring devices as well as:
- premises, compounds, transport vehicles of food plants and condition and use of equipment and appliances;
- raw materials, ingredients, technological means and other products used in production and preparation of food stuffs, meat preparations, cut meat and meat products and materials, coming in touch with food;
- storage and use of chemical substances used in food chain and possible residues of chemical substances in finished products;
- internal quality control and supervision system at the food plant;

- marking and promotion of food stuffs.

Inspector shall not:

- release commercial secrets they have obtained while fulfilling official obligations;
- participate personally or via third person in commercial operation of establishments subjected to supervision;
- carry out veterinary medical practice and veterinary expertise, which a respective inspector will have to check consequently.
- To enable the inspector to carry out inspection at the establishment, he/she needs adequate equipment.

Finishing inspection visit, the inspector shall fill in two copies of inspection protocol in accordance with specification of the establishment.

III Overall hygiene of the establishment

On starting inspection, the food inspector makes assessment of the overall hygiene at the establishment.

1 Compound

The compound, at all entrances of the establishment within a radius of at least 3 m, shall be covered with a hard, durable, material with a slope, securing water drainage.

Territory of the establishment shall be fenced off, to prevent unauthorized access of people and animals to the compound.

Grass shall be mowed around building of the establishment.

The establishment shall ensure compliance with construction requirements in respect of its layout and construction work as provided by regulatory documents.

There shall be a picket on the compound, controlling entering to and exit from the slaughterhouse and meat processing plant of people.

2 Waste

Waste shall be stored in a way that prevents access of pests and rodents as well as to prevent contamination of food, potable water and pollution of premises, equipment, territory and environment.

Places of waste storage shall be kept clean and waste should be regularly removed from production premises to the place specially provided for this purpose.

Waste must be collected and stored in water-proof specially market containers made from stainless material and provided with the lid. At the end of every work day containers must be cleaned and disinfected after emptying them and the waste must be regularly removed from the territory of the establishment to avoid development of smell, attraction of birds, insects and rodents. Premises and the compound must not be polluted with waste.

3 Potable water supply

The establishment must be provided with potable water complying with certain requirements. The establishment must receive water use permits as referred to in the aforementioned regulatory documents. This permit/agreement confirms rights of the water user to use water and lays down the type and term of water use as well as responsibilities of the water user in respect of water protection. The permit regulates the use of internal coastal water, fresh surface water and underground water on the territory of the Federal Democratic Republic of Ethiopia; it is mandatory and binding to every user of water.

Protective zones around water intake places are laid down to ensure restoration and conservation of water resources as well as to reduce the pollution impact. It is prohibited to store animal feeding stuffs, waste, chemical substances and timber near the protective zones around water intake places as well as to obstruct accommodation roads and to dig soil. The protective zone around underground water intake must be levelled out, fenced in and planted with greenery. The protective zone around surface water intake must be planted with greenery and fenced in.

Potable water supply must be uninterrupted, with the necessary pressure and in sufficient volumes. Potable water must not have smell and taste of detergents, disinfectants, oil or other admixtures. It must be clear and colourless. Irrespectively of the fact that potable water has been obtained from a centralized or autonomous supply system, it must be tested in order to guarantee its safety and suitability for use in food stuffs and for washing of surface, coming in contact with food. Laboratory testing of potable water obtained from any intake source must be carried out before potable water is used for production purposes. The establishment, upon starting its operation, must have chemical examinations of water made. Periodically, in compliance with legislation or if any problems have been found then more frequently, must test microbiological characteristics of water. Sampling frequency for laboratory testing is laid down by the State supervision institutions in compliance with regulatory documents. On taking samples, the sampling place must be chosen according to schedule and samples must be taken with methods provided by technical documentation. Depending on soil condition and speed of water flow through it, waste water sources and solid waste deposits must be located at least 60 km from potable water intake.

If in the process of inspection it is found out that microbiological properties of some potable water source do not comply with requirements of legislation, the situation must be properly assessed, and if appropriate, water supply from this source must be stopped until the problem is eliminated and a repeated test is carried out. The necessity to introduce additional measures should be assessed in respect of products, manufactured in the period when non-compliant potable water was used.

Possible pollution of potable water is assessed by testing samples for all kinds of coliform bacillus, including *Echerichia coli*. These bacteria are used as indicators of other possibly hazardous micro-organisms and show the pollution of potable water. The presence of these bacteria in potable water shows that there are problems with the source of water supply, water treatment or water pipes, and that water can be polluted with hazardous micro-organisms.

Potable water pollution problem can be caused by *Hepatitis A* viruses. These viruses and micro-organisms can be inactivated by chlorination of water.

Disinfection of water supply equipment must be carried out before starting of operations, after emergency repairs and for prophylactic purpose no less than twice a year as well as if pollution has occurred. Disinfection of boring well before starting of operations is compulsory.

4 Potable water supply system

Potable water supply system must be made of water-proof material, painted. Pipes and taps of technical water and potable water must be painted in different colours and this is shown in layout of water supply system of the establishment.

Undesirable connections in potable water supply system can be connecting pipes between potable and technical water lines as well as unprotected nozzles of pipes (those, which lack valves cutting off water backflow).

Water backflow problems arise if in the result of pressure difference, pollution can get into water supply system in cases when there are differences in size of pipelines, speed of water flow and water level. If the pressure in potable water supply system is lower than the atmospheric pressure, counter-pressure occurs that pushes pollution into potable water supply system.

Waste water drainage system must be fully isolated from potable water supply system of the establishment.

5 Sewerage system

The sewerage system must have an adequate capacity and safe, preventing possibility of food and environment pollution.

The establishment shall have in place:

- External and internal waste water drainage system, build in compliance with requirements laid down by regulatory documents;
- Internal waste water collection system.
- Internal sewerage system consists of waste water collectors, network of pipes as well as waste water treatment plant and pumping equipment.
- Waste water collectors must be made of water-proof, mechanically and chemically resistant materials. The collectors must be equipped with sieves, preventing large particles of solid waste from getting into pipelines. Under waste water collectors (excluding precipitation collectors) hydraulic siphons have been installed, preventing gases and smell of sewerage system from getting into premises. To collect waste water from the floors special ladders must be installed.
- The network of pipelines consists of horizontal (drain pipes and exhausts) and vertical (standpipe) sections.
- For internal sewerage system pipes of 50 to 500 mm in diameter are used. There are places provided in sewerage pipelines for cleaning – inspection and cleaning manholes.
- Rather often it is necessary to install internal waste water treatment systems at establishments. The internal sewerage systems are then equipped with pumps if it is not possible to drain waste water by its gravity flow into external networks.

6 External sewerage system

The external sewerage system consists of the courtyard, quarter and the establishment own network (here also precipitation collectors are installed on the territory of the establishment) and the collector network. This system can include also pump stations and waste water treatment equipment. Gravity flow sewerage pipes are 150 to 2500 mm in diameter. Canals, ditches and gutters are intended for draining of precipitation water.

Sewerage pump stations are installed to raise waste water level thus, reducing the depth of pipe depositing and waste water is drained into treatment equipment.

The choice of waste water treatment methods is based on the nature of water pollution and the consequent type of use of the treated water. There are mechanical, chemical and biological waste water treatment methods.

The layout of sewerage systems must show the network of sewerage streets (separated, combined, rain water and industrial sewerage network), sewerage pump stations, waste water treatment stations, (explanations of equipment and buildings).

7 Ventilation system

To prevent accumulation of condensate, a ventilation system must be installed at the establishment. Natural, forced ventilation must be ensured at the establishment and if the specificity of the establishment requires so then also a steam catching equipment.

Air supply system of the forced ventilation consists of:

- Air supply equipment;
- feeding camera where ventilator with engine is located as well as air treatment equipment (filters, air heaters);
- network of air supply pipes, supplying fresh air to separate rooms or work stations;
- supply opening with gratings through which air is flowing into the room;
- adjustment appliances.

Air exhaust system of the forced ventilation consists of:

- air exhaust openings;
- network of air pipes;
- exhaust camera with ventilator and engine;
- air treatment equipment (if needed);
- exhaust shaft through which air is exhausted into atmosphere
- adjustment appliances.

Only clean, unpolluted air is suitable for supply. If it is not available then outside air must be cleaned. It is admissible to source the air at least 2, 00 m high from the ground (if taken in a green belt – then at least 1, 00 high).

Premises of the establishment must be provided with an adequate ventilation system, preventing an air flow from relatively sterile area to relatively dirty area, avoiding pollution. Ventilation manholes must be equipped with an easily cleaned and replaceable protective sieve made of stainless material.

Ventilation canals must be kept clean. It is recommended to clean them no less than once a year.

8 Production premises

Production premises must be sufficiently large and convenient, allowing free access to equipment and work stations. Technological equipment must be designed and situated so as to ensure compliance of technological process of production with relevant requirements.

Production premises are intended for three basic operations:

- Relatively dirty area – area for keeping of animals and pre-slaughter area;
- Clean area – slaughter room and area for processing, mincing and production of meat products;
- Relatively sterile area – the place where meat and meat products are treated with cold, packed, wrapped, stored and distributed. (meat product)

Layout of production premises must ensure separation of clean, passage and dirty areas. Premises of the establishment must be situated and furnished so as to meet requirement of production flows and avoiding the crossing of production flows. There must be a separate staff entrance into production premises (equipped with appliance for cleaning and disinfection of footwear) that is separated from entrances and exits intended for movement of finished products, raw material and other production elements during technological process.

8.1 High - capacity slaughterhouse shall be provided with:

- a room for animal slaughter and treatment of slaughtered animals with a special place intended for stunning and bleeding of animals allowing a free access to stunned and slaughtered animals. If animals of different species are slaughtered simultaneously then for slaughtering and treatment of pigs a separate technological line must be provided;
- a place intended for scalding, depletion, scraping and singeing must be situated no further than 5 m from slaughter line or separated from the slaughter line with a 3 m high partition (if pigs are slaughtered at this slaughter house);
- a separate room intended for emptying of stomachs and casings or a closed equipment for cleaning of stomachs and casings separated with at least 3 m high partition and provided with a forced ventilation, preventing accumulation of water condensate and hazardous gases, and a pipeline intended for drainage of waste water left after washing of stomachs and casings, channelling this water to waste water treatment system;
- a separate room intended for processing of casings. It is permitted to process casings in a room intended for cleaning of stomachs and casings if their pollution risk is avoided (for example, separated with 3 m high partition);
- a separate room intended for processing of by-products (if production technology of the slaughter house in question does not envisage the processing of by-products on the technological line). Animal heads and legs must be processed separately in places specially equipped for the purpose. The above-mentioned requirements are not compulsory if the slaughter house does not process by-products at all;
- a room for storage of technical source materials (hides, hoofs, bristle, horns, etc.);
- a separate room intended for wrapping and/or packing of fresh meat and by-products (if the slaughter house deals with wrapping and/or packing of fresh meat and by-products;
- a lockable room where the gear necessary for veterinary supervision, control and for veterinarian is stored;

- laboratory for testing trichinosis or a separate room to carry out trichinoscopy (if horses or pigs are slaughtered at the slaughter house);
- an equipment by means of which the animal is placed in a vertical position, hanging in chains after stunning;
- a separate room for storing unidentified carcasses, provided with refrigerating equipment;
- means for moving of carcasses along ceiling rails that must be installed so as to prevent carcasses from touching the floor or walls;
- equipment;
- chilling room with refrigerating equipment and the thermograph in the warmest place of the room;
- cold store with freezing equipment (if production technology of the slaughter house envisages freezing of fresh meat and by-products) and the thermograph in the warmest place of the room.

8.2 Low - capacity slaughterhouses shall be provided with:

- a room for animal slaughter and pre- slaughter treatment of animals with a special place intended for stunning and bleeding of animals allowing a free access to stunned and slaughtered animals.
- an equipment by means of which the animal is placed in a vertical position after stunning;
- a separate room for collection and emptying of stomach and casings. Cleaning of stomach and casings may be carried out in the slaughter room while slaughtering and animal pre-slaughter treatment is not carried out;
- a sufficiently large(corresponding to the capacity) chilling room or cold store with partitioned area for storing the detained meat, except the case when such meat, under surveillance of the authorized veterinarian, is transferred to another establishment for additional testing.

8.3 Poultry slaughterhouse shall be provided with:

- a lockable room where the gear necessary for veterinary supervision and for the authorized veterinarian is stored;
- a room for storing packing and wrapping materials if the establishment is dealing with packing and wrapping of meet;
- a lockable room or a cabinet for storing detergents and disinfectants;
- an easily washable and disinfect able room or shed for pre-slaughter examination of poultry or rabbits;
- a slaughter room where a special place is provided for:
- stunning and bleeding of poultry or rabbits;
- plucking and scalding of poultry or skinning of rabbits;
- evisceration of slaughtered poultry or rabbits (separation of internal organs from the carcass) and processing of by-products (internal organs as well as heads and legs if they have been separated from the carcass) with a separate place for evisceration to avoid pollution of by-products.
- automatic door between the rooms referred to in subparagraphs a), b), c);

- a room for dispatch of meat. At small-size slaughter houses it could be a separated place;
- a room or place for collection of feathers or rabbit skins if they are intended for processing;
- a chilling room if other than immersion method is used for chilling of meat;
- one or more lockable chilling or freezing rooms for storing of detained meat (meat, which veterinary expertise has not yet been finished to and which must be subjected to additional tests);
- a room for storing of finished products with thermographs or telethermometers in the warmest place of the room and refrigerating equipment, ensuring inner temperature regime of meat. The refrigerating equipment must have appliances removing condensate development.

8.4 Meat cutting plant shall be provided with:

- a room or a partitioned place for reception of meat;
- a room or a partitioned place for dispatch of meat;
- a room for reception, evisceration, skinning or plucking of game as well as for veterinary expertise;
- a room for storing of meat;
- a room for cutting, deboning and mechanical deboning;
- a room for packing and wrapping of meat;
- a lockable room for storage of meat not suitable for human consumption, bone splinters and blood clots;
- a room for washing and disinfection of meat storing containers and multiple use packing;
- a room for storing packing and wrapping materials;
- a lockable room or cabinet for storing of detergents and disinfectants;
- a lockable room or cabinet for storing of disinfestations and deracination means;
- a room or cabinet for storing of cleaning utensils.

8.5 Establishment for manufacturing meat products shall be provided with:

- a room or a place relevantly equipped for reception and inspection of raw material;
- a room or a place relevantly equipped for dispatching of finished products;
- separate rooms or storage of raw materials and finished products where the temperature regime is ensured as provided by relevant regulatory documents;
- one or several rooms (depending on their size and construction) for production and wrapping of meat products, arranging the production flow so as to avoid contamination of raw material and products;
- a room or lockable cabinet for storing of food additives and salt;
- a room for the packaging of meat products. The products are allowed to pack in production premises if containers used for this purpose are made of ceramics, glass, plastics or stainless material, which after cleaning and disinfection are allowed to use

repeatedly or if the production room is large enough and furnished in a way that prevents products from contamination;

- a room for the storage of packing and wrapping materials.

8.5.1 Depending on the type of meat products manufactured at the establishment, in addition to the aforementioned rooms, the establishment shall provide for:

- a separate room or if there is no contamination risk for products, a place for unpacking of raw materials;
- a separate room for thawing of frozen raw materials;
- a room for the cutting of meat;
- a room or equipment of drying or maturing of products (treatment of fresh salted meat at a relevant temperature regime that by slow and gradual reduction of humidity causes processes of natural fermentation as a result of which the product acquires specific organoleptic characteristics and the product may be stored at room temperature);
- a room or equipment for smoking and thermal treatment of products;
- a room for soaking (particularly casings) and other chemical or physical treatment processes (for example, heating, smoking, salting, marinating, saturation, drying) with a view to extending the product shelf life if these treatment processes have not been performed at the establishment manufacturing raw material;
- a room for cleaning of raw material necessary for manufacturing of meat products (for example, for cleaning of garnish);
- a room for salting where air conditioning is installed if needed, and the temperature regime is ensured as provided by relevant normative;
- a room for cleaning of meat products before their cutting into pieces or slices and before packing;
- a room for cutting of meat products into pieces or slices and their packing in consumers packs;
- rooms for manufacturing of other products of animal origin if such products are manufactured at the establishment;
- a room or place for washing of internal inventory;
- a room for washing of returned containers.

8.5.2 The establishment, manufacturing pasteurized and sterilized meat products (filled in hermetically sealed containers), shall provide for such additional premises and equipment:

- an equipment for hygienic transfer of empty cans to production premises;
- an equipment for the cleaning and washing of cans before filling;
- equipment for washing containers in potable water hot enough to remove grease after they have been hermetically sealed and before retorting;
- a suitable room, area or installation for cooling and drying containers after heat treatment;
- facilities for the incubation of samples taken from meat products packed in hermetically sealed containers;

- adequate facilities for checking whether containers are hermetically sealed and undamaged;

The establishment, dealing with meat preparations, shall provide for an additional room for production and packing of such products.

8.5.3 The establishment, producing rendered animal fat and greaves shall provide for:

- a room or place and equipment for reception of raw material;
- an installation to facilitate the visual inspection of raw material;
- if necessary, an installation to crush raw material;
- an equipment for the rendering of raw material by heat or pressure or other appropriate method;
- containers or tanks in which the fat can be kept in liquid state;
- apparatus for plasticization or crystallization of the fat to facilitate market preparation and packing, unless the establishment dispatches liquid rendered animal fat only;
- a room or place for dispatching of the product, unless the establishment dispatches melted animal only by means of tankers;
- if appropriate, suitable equipment for the preparation of products consisting of rendered animal fat mixed with other foodstuffs and/or seasonings;
- an equipment for collection, packing, wrapping and storing of greaves (if the establishment is manufacturing greaves for human consumption).
- a cold store, except in cases where raw materials are processed within 12 hours after they have been obtained.

8.5.4 Establishment manufacturing minced meat and meat preparations shall provide for:

- A room for production and packing of minced meat or meat preparations, and which is equipped with thermograph or tele-thermometers. If minced meat or meat preparations are produced at the meat cutting plant then minced meat or meat preparations are allowed to produce and pack in meat cutting premises if only mincing area is clearly separated. Whole poultry carcasses are allowed to treat with spices at the slaughter house in a room specially provided for this purpose;
- a room or cabinets for storing of additives and salt;
- a room for packing, except the cases when easily washable and stainless containers, which have been cleaned, washed and disinfected prior to being brought into minced meat or meat preparation production room, are used for packing;
- a room or a separated place with relevant equipment for cleaning, washing and disinfection of tools and appliances;
- a separate chilling or freezing room for storage of fresh meat;
- a separate chilling or freezing room for storage of minced meat or meat preparations;
- a room for storage of packing and wrapping material;
- refrigerator equipment to ensure the temperature provided by relevant regulatory documents;

- a lockable room or cabinet for storage of equipment and materials needed for the Food and Veterinary Service to carry out the State supervision at the establishment;
- a room or place for reception and despatch of products;
- a lockable room or cabinet for storing detergents and disinfectants.

8.6 Floors

Floors must made of hard, water proof, non-absorptive, non-slippery and non-toxic and very dense covering that can be easily washed, disinfected; the floor covering must not be damaged.

The angle of slope against drains must be 1:100. There can be special shallow hollows made for water runoff. All the hollows and manholes must be covered with removable stainless gratings.

There must be built in waste water collection manholes and slopes for drainage of liquids in the floors. Chillers and refrigerators as well as passages and squares where carcasses are transported can be without waste water collection manholes but the slope of floors must ensure the draining of waste water away to the nearest waste water collection manhole.

Connection between floor and walls must be with a curve (rounded) to make washing easier and to prevent from accumulation of dirt (recommended ≈ 4 cm in radius).

8.7 Walls

The walls must have smooth surface, resistant against decay and prevent rodents from getting into the room. Walls must be covered with a light, smooth, water proof material, resistant against detergents and disinfectants no less that 2 m high (in chillers and refrigerators – up to the ceiling, in slaughter premises - 3 m high). Wall paint must be non-toxic, durable and in light colour.

Connection places of wall covering materials must be filled with water proof component.

8.8 Windows

It must be possible to open windows in production premises and they must be covered with removable sieve preventing insects, birds and rodents from getting into the room.

Window sills must be narrow with the slope of 45° precluding placing any items on them.

Window frames must be made of smooth, water proof material. Window frames can be also made from light coloured wood.

8.9 Doors

The doors connecting rooms and which carcasses are moved through must be either opened automatically or provided with plastic curtain.

Surface of the doors must be smooth, made of water proof, durable and washable material. Wooden doors must be covered with metallic and water proof material on both sides, metal doors must be made of stainless material.

8.10 Ceilings

Construction elements of the ceilings must be smooth and in light colour. The ceilings must be designed and constructed so as to reduce accumulation of dust and dirt and provide access for cleaning. There must not be uncovered connections or gaps in the ceilings; they must be water proof, washable with a minimal height of 3 m.

It is recommended to install suspended ceilings in the buildings with steep roof.

8.11 Lighting of premises

In all premises of the establishment must be either daylight of artificial light. In production premises the intensity of light must not be less than 220 lux but in the places where veterinary expertise of carcasses is carried out – 540 lux. Lighting must not alter perception of colours. Lighting appliances must be clean.

Both artificial daylight and incandescent bulbs must be protected with plastic covers (plafond) so as broken pieces of glass don't get into production premises.

8.12 Hand washing facilities

Production premises must be provided with an appropriate number of hand washing facilities, corresponding to the number of staff. If the number of staff is 1 – 9 persons then there must be 2 hand washing facilities, if 10 - 24 then 3, if 25 – 49 then 4, if 50 – 99 then 6, if > than 100 then for each 20 staff members the number of hand washing facilities must be increase by 1. The hand washing facilities must be located near work stations. In a small-scale slaughter house the hand and tool washing and disinfecting facilities can be located in the adjoining room and not near the work stations.

Water sinks must be provided with hot and cold running potable water or water to be mixed to the necessary temperature.

Water taps must be operated without hands (by means of foot, knee or photo-element). At a low - capacity slaughter house water taps can be also hand operated.

The hand washing facilities must be provided with had detergents and disinfectants, hygienic hand drying means (disposable paper towels, hot air). Near sinks must be placed waste containers provided with lids that are not opened with hands.

The hand washing facilities in the production premises must be checked at least once a day to ensure that they are clean, well functioning, hot water, detergents and disinfectants are available, stocks of disposable towels are sufficient as well as that there are waste containers. Checks on concentration of hand detergents depend on the type of the detergent.

8.13 Location of utilities (cables, pipelines)

Utilities (cables, pipelines) must be located in such a way (about 4 cms from each other) as to allow cleaning of the premises and equipment in compliance with relevant requirements. Water pipes must be built in or must be located in some distance from the wall allowing to clean the wall as well as the water pipe.

8.14 Equipment and facilities

The establishment must be provided with technological equipment, facilities, inventory, containers for carcasses, meat processing and laboratory tests as referred in legislation.

Equipment and facilities must be designed in such a way as to protect products from dirt and contamination with toxic substances. Equipment must be possible to dismantle in order to wash and disinfect them.

When acquiring the equipment, location of the electric engine and control panels should take into account. Engines must be fastened on the equipment or a special pallet. They should not be placed on the floor or above product processing line. Connection of electric appliances must be water proof. Electricity wires must group in bunches and insulated making the cleaning easier. Transfer boxes must be placed in a sufficient distance from production equipment so that it is easy to clean them.

When choosing conveyor belts, it is important to take account of possible temperature variations as there are many polymer materials that are not durable at low or high temperatures. Engines and lubricated bearings must be situated in places where oils and lubricants cannot contaminate food stuffs. Tools and gear used when handling meat must be in operational condition and kept clean.

8.15 Contact of food with surface

For interior decoration of production premises it is allowed to use tiles if gaps between them are filled in with air tight substance, making the surface of tiles smooth and preventing dirt and liquids from getting into gaps.

Contact surfaces of the gear and equipment must be made in such a way as to allow easy cleaning and disinfection. All joints and connections must be smooth without sharp angles that hinder cleaning and disinfection. Equipment and gear must be located in a sufficient distance from the walls of processing premises. Equipment may be placed on legs, allowing for easy cleaning and technical maintenance and disinfection. If necessary they may be fixed on a pallet mounted specifically for this purpose, but the connection between floor and the pallet must be rounded and dense.

Instruments and work equipment (containers, conveyor belts, saws, cutting tables) that come in contact with meat, must made of stainless material resistant against disinfectants, and which does not influence meat quality. Surfaces (excluding walls and floors) actually or possibly coming in contact with fresh meat, must be smooth (including welding joins and connections).

Wooden pallets can be used only for transport of packed meat and meat products.

9 Detergents and disinfectants, cleaning inventory

The food processing establishment shall have all necessary detergents and disinfectants to maintain a constant cleaning and disinfection regime as well as a person responsible for fulfilment of this regime must be appointed.

The packing and accompanying documents of detergents and disinfectants must contain the name of manufacturer or importer and information on the composition of the product. If such information is not indicated on the packing it must be in the accompanying document.

As even small amounts of preparations used for washing and disinfection when getting into human organism can be dangerous for human health, life or environment, the user shall strictly adhere to the user instruction provided by the manufacturer and he/she is responsible for preventing any harm to human, health, life or environment.

Detergents and disinfectants must be stored in their manufacturers' packing with relevant labels.

There must be relevant inventory for washing and disinfection of tools and technological equipment. The previously mentioned inventory must be made of corrosion resistant materials and easily cleaned.

Detergents, disinfectants, infestation and deracination mean must be stored in lockable rooms or cabinets. The cleaning inventory must be marked and it must store in a separate room.

10 Storing of auxiliary materials and containers

There must be a special room at the slaughter house furnished for storing of packing and wrapping materials if the establishment handles packing and wrapping of meat. The room for storing of auxiliary materials and inventory must be clean.

11 Staff hygiene

Persons, who are employed or will eventually be employed in any of the food chain stages, shall undergo compulsory health examinations.

The employer enlists and approves these persons who are subjected to the compulsory health examinations. This list must revise every year. The employer sends employees to the compulsory health examinations at a medical institution (also prior to signing the contract).

The compulsory initial health examination and the compulsory periodical health examinations are carried out on persons whose operational functions (training) are directly associated with a possible risk to human health. The health examination is carried out by the initial health care physician who gives permission for an employee to work at the food chain establishment and confirms this decision by making notice in the medical book, which must be available to the controlling institution at any time. Annexes show test types, periodicity of the health examinations (once a year) and contents of the medical book.

It is prohibited to employ in the food chain the persons who can directly or indirectly contaminate food with pathogenic organisms, ectoparasites or endoparasites as well as having wounds, which are not dressed with water proof protective dressing.

It is prohibited to employ in the food chain the persons who have been infected with A and E hepatitis, acute infectious enteric diseases, enterobiosis, hymenolepidosis, paratyphoid, salmonellosis, dysentery, abdominal typhus, tubercullosis of lungs, any diseases of skin and mucuous membrane with festers on uncovered parts of the body, diptheria. If the person has a justified suspicion of having fallen ill with one of the previously mentioned diseases, he/she must immediately address the initial health care physician. The employer shall not engage such person in fulfilment of tasks associated with the risk of transmitting infection on other persons.

The employee must immediately notify the employer on the following symptoms: diarrhoea, jaundice, fewer, pain in the throat, rash on the skin, damaged skin on uncovered parts, and discharge of matter from eyes, ears, and nose.

Requirements to observe personal hygiene must be understandable and put in clearly visible places. Notices, reminding the staff to wash and disinfect hands after toilet must be put in clearly visible places.

Persons employed at the food processing plant are responsible for fulfilment of personal hygiene requirements and for actions taken in compliance with these requirements on specific stages of the food chain.

On starting to work, after toilet and if needed during the work hours to wash and disinfect hands; it is prohibited to eat, drink, smoke and to perform other actions that might contaminate meat; after contacts with sick poultry, rabbits or infected meat one must immediately wash and disinfect hands.

The employees who handle directly slaughter products must wear headgear, footwear and over light coloured overall. If necessary, it must be changed during working hours.

There must be staff cloak room at the slaughter house with separate areas for clean and used overalls;

The establishment must ensure a centralized washing of overalls. It is not admissible that employees wash their overalls themselves at home.

11.1 The first aid kit

There must be the first aid kit at the establishment, containing sterile water proof wound dressings, antiseptic ointments, disinfectants and other pharmaceuticals necessary provide the first aid.

The pharmaceuticals at the disposal of employees of the establishment must be in their original packing and placed in such a way as to avoid contamination of food, equipment and packing material.

11.2 Washing and disinfecting of hands

Everybody, upon entering production premises of the establishment, must wash hands in warm water with detergents and disinfectants, flush footwear at the place specifically provided for this purpose, applying disinfectants or to clean footwear on a special mat soaked with disinfectants. It is necessary to wash hands in all food processing premises to prevent dirt and pathogens from getting into finished products.

If hands have not been thoroughly washed and disinfected before starting work, they may become a source of pathogen organisms or chemical contamination. An efficient hand washing regime must be introduced in all production premises, including actions of employees, maintenance of hand washing appliances in a sufficient order and training of the staff.

Hand washing and disinfectants must be placed in a sufficient distance from production lines to avoid accidental contamination of products.

It is compulsory to wash hands upon starting or resuming to work after toilet.

The temperature of water used for hand washing must be 43°C. Hands must be soaped and rubbed and afterwards thoroughly flushed with clean water. Here the most suitable is good alkaline soap and detergents. Using soap or detergents with antibacterial effect, it is possible that some types of such soap may cause skin inflammation. After washing of hands they must be disinfected. Hands must be immersed into diluted disinfectant. Micro organisms are protected from disinfectants by dirt, fat and other dense and not easily removable stuff. Hand disinfectants must be harmless for persons using them and they must not contaminate

products. After using detergents and disinfectants they must not leave any smell on the hands.

When using blends of hand detergents and disinfectants, no other disinfectant is needed.

After washing hands must be thoroughly dried or rubbed in towel. It is not admissible to rub hands in dirty towel. Hand care creams or lotions may be used only after finishing to work.

If during check on hand washing appliances it is found that the concentration of disinfectant is not sufficient then employees must wash and disinfect their hands anew.

Hand washing procedures must be part of the staff training program.

12 Staff premises

There must be adequate cloak rooms, showers and WC facilities at the disposal of the staff of the establishment. WC facilities must not open directly into production and storage premises.

Hand washing appliances in the staff premises must be provided with hand detergents and disinfectants, disposable towels or hand dryers, waste containers for used towels.

Taps of hot and cold water must be operated without hands (foot, knee or electronic sensors).

The necessary number of sanitary facilities in the staff premises:

Number of employees	**Number of flushing toilet bowls**
1-9	2
10-24	3
25-49	4
50-99	6
Per each next 20	1 more

The number of showers depends on the specificity of the establishment:

Number of employees	**Number of showers**
7-15 men	1
5-15 women	1
Per each next 7 men	1 more
Per each next 5 women	1 more

Men and women must have separate staff premises. Toilet bowls in men's WC may be substituted with urinals – up to 1/3 of the number of toilet bowls.

All the toilet bowls and urinals must be provided with water flushing appliances.

The toilet facilities must always be in good working conditions; they must be regularly checked and cleaned to avoid a serious contamination of products.

Floors, walls, ceilings and doors in the staff premises must comply with requirements that have been laid down for production premises. The staff premises must be provided with ventilation and lighting no less than 110 lux.

There must be a lunch room with sitting places according to the number of staff.

13 Food safety management system - internal controls

13.1 HACCP system

It is the responsibility of the food processing establishment to prevent any action or process that has an unfavourable impact on food safety and to ensure safety procedures or control measures of the relevant stage of the food chain, their implementation into the food chain.

The slaughterhouse must implement a Food safety management system, ensuring food safety (HACCP) or self-check system, securing detection of hazardous causes, determination of critical limits of each critical point, setting up of control and supervision procedures, laying down the necessary corrective measures, assessment of the system and determination of approval measures, recording of all the procedures and results.

The food processing establishment shall appoint an official person as responsible for identification of such activities and stages in the food chain that are critical for food safety as well as for implementation, execution and assessment of supervision measures.

Periodically (not less than once a year) and in cases when operation of the food establishment or its technological process is changed, a repeated analysis of causes for food contamination (hazard), critical points and determination of supervision, control and corrective measures shall be carried out.

The self-check system must be based on full knowledge about the product and manufacturing process as well as understanding of LRP.

13.1.1 General principles

HACCP system is a safety ensuring system.

Implementation of HACCP system covers activities and measures intended to ensure and confirm safety of meat products and their compliance with hygiene requirements. These activities must comply with the specific character of the establishment.

Employees of the establishment must elaborate and implement HACCP system in accordance with the following basic principles:

- identification and analysis of sources of hazards;
- identification of technological stages (processes);
- determination of critical control points (stages);
- determination of critical limits of the measurable parameters in each critical control point (stage) with a view to preventing, limiting or reducing any possible risks to food safety;

- identification of management and monitoring procedures in order to prevent risks in each critical control point (stage);
- identification of the necessary corrective measures;
- determination of the measures of assessment and approval of HACCP system;
- preparation of HACCP system documentation and registration of monitoring measures;

To set up HACCP system, legal acts, technical rules, the present Guidelines and other materials can be used.

Monitoring - is a planned sequence observations or measurements to assess whether a CCP is under control and to produce record for future use in verification

13.1.2 Responsibility of the management

Management of the establishment has the following responsibilities and liabilities in the area of HACCP system preparation and implementation:

- the area of application of HACCP system– product groups and production processes covered by HACCP system must be identified;
- it must be secured that product safety ensuring policy of the establishment fits in with the objectives of the establishment and safety requirements set up by consumers, State institutions and the establishment itself;
- it must be secured that the objectives and activities of the establishment focused on ensuring of product safety have been understood, implemented and maintained on all levels.
- Manager of the establishment shall appoint the HACCP group leader who would be responsible for:
- preparation, implementation and maintenance of the HACCP system;
- summaries and reporting to the management of the establishment on efficiency of the HACCP system and the necessary changes in the system;
- organization of work groups of comprehensive specialists.

The management of the establishment shall ensure an adequate training of the staff involved in HACCP system.

13.1.3 Setting up of work groups of comprehensive specialists

Work group of comprehensive specialists is set up to elaborate, implement, maintain and supervise the HACCP system.

This group shall be composed of representatives from all divisions of the establishment involved in production of respective products, including specialists with specific knowledge and experience in production, storing, transport and use of specific type of products as well as skills to identify the cause of possible hazards.

It is recommended to include the following specialists in the work group:

- specialist in HACCP system;
- specialist responsible for production of meat and meat products;

- specialist with the knowledge of production equipment;
- specialists with the knowledge in microbiology, hygiene and food technology.

One person may be a specialist in several of the aforementioned areas and produce the information necessary for elaboration of the HACCP system.

Any of the group members may be appointed to keep the group meeting minutes. If needed, invited specialists – advisers who can help to build up the assessment and process management of critical control points (stages) may participate in the group of comprehensive specialists.

The work group of comprehensive specialists has the following responsibilities and rights:

- to identify and register any problems associated with the products, technological processes and HACCP system;
- to envisage procedures for handling non-compliant products and to control fulfilment of these procedures;
- to take actions with a view of preventing any risks or non-compliance associated with the products, technological processes and the HACCP system.

13.1.4 Description of products

A Description of raw materials is available

They contain information on the following points associated with the assessment of a relevant risk:

- chemical, biological and physical characteristics;
- origin;
- type of delivery, packing and storing conditions;
- preparation before use.

B Description of each product class is available

They contain information on the following points associated with the assessment of a relevant risk:

- raw material used;
- chemical, biological and physical characteristics;
- storing and distribution conditions.

The product descriptions must be sufficiently detailed enabling the HACCP group to identify a corresponding risk.

13.1.5 Identification of possible users of the product

Potential users and customers of the product of product group have been identified. Particularly sensitive groups of customers will be identified (children, diabetics, etc.). A foreseen use is described in a relevant form, taking into account storing, preparation and serving.

13.1.6 Development of charts (flow charts) of production processes

Each stage of the production process, starting from receipt of raw material until releasing of the finished product on the market, including delays in between the stages**,** must be analysed and depicted in the chosen format of a detailed production process chart.

The detailed production process chart must include the following data:

- stages of the production process in succession (receipt of raw materials, processing, adding of ingredients or additives, including delays in some stages of the production process or between them, possible reciprocal contamination, removal of waste);
- the necessary technological and technical parameters of the production processes (time, temperature, characteristics of equipment, etc.) in each stage of the production process.
- Charts of the production processes must be sufficiently accurate and detailed so that all possible hazards on certain stages could be identified.
- Charts of the production processes must be supplemented with the layouts of each individual floor of the establishment, indicating:
- layout of production premises and auxiliary rooms;
- location of equipment;
- flows of raw materials, semi-finished products, finished products and waste;
- enumerated sources of potable water supply;
- staff movement charts;
- clean areas, passages, dirty areas.
- Identified placement of bites for rodents under deracination program.

13.1.7 Checks on charts of the production processes

After the chart of the production process has been elaborated, the group of multi proficient specialists must check it during working hours and at the production place. If any deviations are found then relevant corrections must be made in the initial chart to correct mistakes and to make the chart as precise as possible.

13.1.8 Identification of hazards

Hazards are possibility to cause damage to human health. All possible hazards that might arise during the production process in any of the stages, must be identified, documented and assessed.

Identification of the possible hazards must include such hazards, their cause and elimination measures:

- microbiological contamination (types of micro organisms, their optimal growth regimes, activity of water);
- chemical contamination;
- physical contamination.

The list of hazards must cover these hazards, which elimination or reduction of to certain level is essential for production of safe products.

The work group of multi proficiency specialists, using the chart of the production process, takes the following actions:

- the list of possible microbiological, chemical and physical hazards that could occur on any stage of the production process (including the cause of these hazards associated with the receipt and storing of raw materials, possible delays in the production process and other expected problems);
- assesses and describes, which process monitoring measures can be used in the case of manifestation of each individual hazardous cause.

The process monitoring measures constitute such actions and approaches that could be carried out to avert or eliminate the cause of hazards or reduce their impact until an admissible level.

To avert one cause of hazards, implementation of several production process monitoring measures might be necessary but sometimes only one production processes monitoring measure would be enough to avoid several causes of hazards. For example, sterilization of canned meat can prevent hazards of salmonella as well as development of other micro-organisms.

The description of production process monitoring measures must be accompanied by descriptions of procedures and technical requirements elaborated in a detailed way. For example, precise requirements to thermal treatment process (time and temperature relations).

13.1.9 Identification of (CCP) critical control points (stages)

The CCP (stage) means any point, stage or procedure in the production process of meat or meat products when particular monitoring is needed and the cause of hazard must be prevented or reduced until an admissible level.

The production process being assessed from the point of view of microbiological, chemical and physical contamination and foreseeing hazards that might occur, the critical control points (stages) must be identified. This assessment must carry out by professionally educated employees having special knowledge, based on currently valid legal acts and technical documentation.

The critical control points (stages) are specific to each establishment depending on the type of raw material, production process, structure, equipment, type of the product.

The critical control points (stages) with a view to identification of process management and monitoring measures, shall be found, assessing cause of hazards by means of the decision chart but the work group of multi proficiency specialists may use also other methods, taking into account experience and skills of the group members.

13.1.10 The decision chart of the critical control points

When assessing causes for hazards on any stage of the production process, a sequential answer must be given to any question on each stage, to any identified cause of hazard by using this or that decision chart.

Whether any monitoring measures are provided for on this stage with a view to preventing hazard? (J1)

Yes

No

Whether the product safety

needs monitoring

measures on this stage?

2. Whether this measure prevents or reduces

hazard until an admissible level? (J_2)

No

No

3. Whether hazard can exceed

the admissible level ?

(J_3)

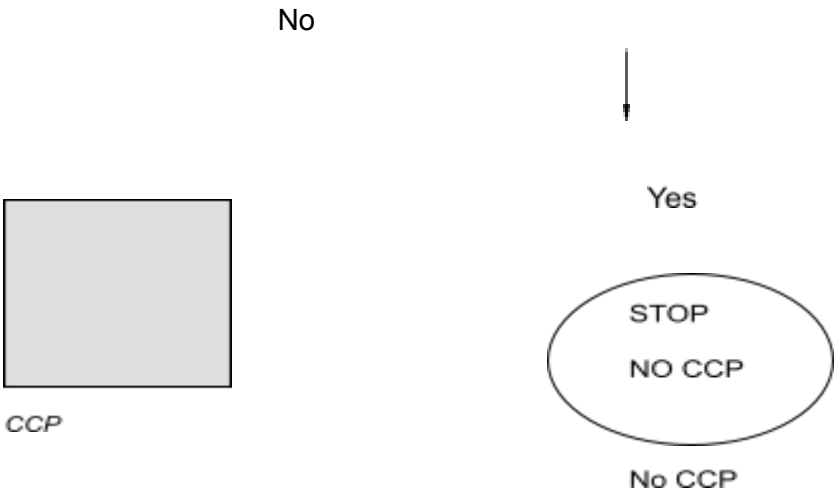
Yes

No

4.

4. Whether on the following stages hazard is eliminated or reduced until the admissible level? ($J_{4)}$

No



On each stage of the production process, the decision chart must be treated in compliance with the production process chart. To identify the process monitoring measures, the decision chart must be developed for each cause of hazard, which may occur.

The decision chart must be used in a flexible way, very skilfully assessing production processes, in order to avoid identification of unnecessary critical control points (stages).

After identification of the critical control points (stages) the group of multi proficiency specialists must carry out the following measures:

- ensuring the development and implementation of the process monitoring measure; if the cause of hazard has been identified on the stage where the process monitoring is needed for the product safety purpose but currently it is not carried out, then the product or process must be changed, implementing the process monitoring measures on the previous, current or the next stage;
- setting up and implementation of control and monitoring system in each critical control point (stage).

13.1.11 Monitoring of the critical control points

To ensure an efficient monitoring of the production process in each critical control point (stage), an adequate monitoring system must set up.

Monitoring of the critical control points (stages) includes all observations and measurements needed to check the major unchangeable parameters of the production process in the critical control points (stages).

The monitoring measures must show:

- critical limits of the changeable parameters;
- monitoring methods;
- periodicity of the monitoring measures;
- the person responsible for execution of the monitoring measures;
- registration document of monitoring measures;
- corrective actions in case of non-compliance, including handling of non-conforming products;

- verification measures, their periodicity and the responsible person.

In order to identify the monitoring measures in each critical control point (stage), critical limits of the changeable parameters must be identified.

The critical limits correspond to the ultimate (maximal) values of the changeable parameters admissible to consider the product as safe. They separate the admissible deviation level of the parameters from the inadmissible one. The critical limits are identified for assessed or measurable parameters, according to which it is possible to check in the critical control point (stage) that the admissible limits have not been exceeded. The critical limits must be identified, using justified proofs that the causes of hazards within the chosen limits have been eliminated.

To reduce the possibility that changing the process may exceed the critical limits, sometimes the changeable parameter must have a more stringent critical limits set up than it would be necessary if the process mostly stayed within the admissible limits.

The critical limits can be identified in compliance with requirements laid down in legal acts and other regulatory documents. The group of multi proficiency specialists must assess compliance of the critical limits with the identified measures to eliminate causes of hazards in the critical control points (stages).

Monitoring and measuring in the critical control points (stages) must be such as to enable a timely detection of the situation when the process becomes unmanageable and corrective measures are needed.

Monitoring and measuring can be carried out either continuously or periodically. For periodical monitoring and measuring, the type and frequency of measuring or selection of samples must be laid down to receive information on the values of the changeable critical parameters.

Interim decisions are not made in between the regular observations of the critical parameters, based on a detailed knowledge of the regularity of changes in values of these parameters.

It is necessary to prepare a written monitoring and inspection program for each critical control point (stage), lying down how, when and who must carry put these monitoring and inspection procedures. The monitoring and inspection procedures focused on critical control points (stages) can include selection of samples and their laboratory tests but these tests must not cover assessment of the conformity of the finished product with certain standards or other criteria.

If the monitoring and inspection of the critical control points (stages) basically depends on selection of samples and their laboratory tests, the laboratory must introduce its own quality system to secure that test results are accurate and reliable.

Quality system of the laboratory may include a written program, laying down qualification of employees, equipment used, calibration, checks on activity and concentration of reagents, control measures with a view to detect whether approved testing methods are used.

13.1.12 Corrective measures

Following the results of monitoring and measuring, corrective measures must be taken in the following cases:

if the verifiable parameters in the critical control points (stages) are close to the critical limits but do not exceed them; it means that trend is showing that the process can become unmanageable; before this happens relevant corrective measures must be taken to eliminate the problem;

if the verified parameters exceed the critical limits; this means that the process has become unmanageable; in this case relevant actions must be taken to get the process under control again as well as a decision must be made what to do with the products manufactured in conditions when the critical limits were exceeded.

The group of multi proficiency specialists must make timely plan and record relevant corrective actions (contingency plan?) in each critical control point (stage) and in each of the aforementioned cases to ensure implementation of the necessary measures immediately as soon as a respective situation has been identified.

- The contingency plan must cover the following actions and measures:
- to designate persons responsible for fulfilment of relevant contingency plan;
- to describe means and actions, eliminating deviations;
- to lay down procedures for handling products manufactured in the period when management of the production process was out of control;
- to prepare an action plan for withdrawal of products from distribution network;
- to keep records on measures to be implemented.

13.1.13 Assessment of the HACCP system (verification measures)

After the HACCP system has been elaborated, it must be assessed whether it functions in accordance with the procedures laid down by the group of multi proficiency specialists. This work group must also lay down the HACCP system assessment methods and procedures (verification measures).

The quality manager of the establishment must follow that functioning of the HACCP system is assessed (internal audit) regularly but no less than twice a year.

Objective of the internal audit is to reveal the possible inconsistencies and reasons for that, to analyse adequacy of the processes and monitoring measures with a view to carrying out the necessary improvements. To carry out the internal audit the following documentation must be prepared:

- calendar plan of audits;
- check lists that must be prepared before the audit in accordance with the specific character of each establishment;
- audit report, indicating inconsistencies found out, dead line for corrective actions, audit conclusion.

The internal audit must be carried out by the employee who is directly responsible for the areas audited. Inspectors of the competent institutions carry out audit of the third party in accordance with the relevant regulatory documents.

Functioning of the HACCP system must be assessed by carrying out periodical checks on registration documents provided in the monitoring measures. These checks may also cover selection and analysis of samples but to receive an additional confirmation – also an inspection of isolated processes and assessment of corrective measures.

The establishment must have a program for selection of samples and testing. The program must provide a possibility:

- to assess the HACCP system to make sure that the methods and procedures laid down in provisions are met;
- to assess repeatedly the HACCP system if the product or the production process is changed, if appropriate.

There must be information exchange system between the group of multi proficiency specialists, structural units of the establishment and the management of the establishment put in place.

13.1.14 Validation of the HACCP system

- The group of multi proficiency specialists must carry out validation of the HACCP system to make sure that the following criteria have been laid down correctly:
- cause of hazards;
- the critical control points (stages), giving rise to such causes of hazards;
- the critical limits of the basic changeable parameters, exceeding which the cause of hazards can occur;
- methods for selection of samples and measurements to find out whether the critical limits are not exceeded;
- corrective measures to be taken in order to prevent the cause of hazards or to reduce them until the admissible level.
- Validation of the HACCP system can be obtained, carrying out the following activities:
- selection of additional samples tests on the finished products;
- checks on actual conditions and characteristics of products during storing, distribution as well as consumption.

13.1.15 Changes in the HACCP system

- Changes must be introduced in the HACCP system due to:
- changes in raw material, product or processing conditions (layout of the establishment, environment, production equipment, sanitary treatment programs);
- changes in the type of packing, storing or distribution conditions;
- changes in consumer demands;
- receipt of new information on already known or new causes of hazards regarding the product;
- changes in the level of staff qualification or determination of responsibility spheres;
- changes in requirements laid down in legal acts or technical rules.

A repeated assessment of the HACCP system and validation is necessary after any changes take place. All amendments of the HACCP system must be introduced in full in the documentation so that the latest information is available at any time.

13.1.16 Preparation of documentation

There must be documented and systematic information in written form on development and functioning of the HACCP system at the establishment. This information must always be available for inspectors of the competent institutions.

The documentation must contain the following information:

- a detailed description of products;
- the chart of production process and characteristics of stages of the production process;
- identification of hazards;
- identification and assessment of the critical control points (stages);
- identification of the critical limits of the changeable parameters in the critical control points (stages);
- procedure for selection of samples and periodicity of measurements of the basic changeable parameters;
- description of measurement methods and procedures to measure the basic changeable parameters (description of the process monitoring measures and methods);
- description of corrective measures in case the critical limits were exceeded (the process becomes unmanageable), a written reports on corrective measures when the critical limits were exceeded;
- results of the process monitoring and inspection procedures;
- characteristics and results of the system assessment and validation procedures.

To prepare the aforementioned documentation legal acts, technical rules, the present Guidelines and other materials can be used.

This documentation when it is ready must ensure access to the necessary data on each batch of products. Documentation of the HACCP system must be available at all the places that are essential for ensuring of the HACCP system functioning.

The repealed documentation must be immediately withdrawn from all the places it has been used and replaced with the valid documentation.

Handling of the documentation must be described, indicating the responsible persons, places the documentation is stored, the number of copies and replacement procedures.

13.2 Cleaning, washing and disinfection program

Cleaning, washing and disinfection usually cover five stages – dry cleaning, preliminary flushing, cleaning with detergents (rubbing can also be included), flushing after washing and disinfecting with disinfectants. To prevent distribution of micro-organisms, very significant is hygiene of surfaces coming in contact with food. Contamination of meat and meat products that may arise by touching non-hygienic surfaces directly or indirectly can cause hazard to

the product safety. It must be clearly shown that hygiene conditions of surfaces, being in contact with food, conform to the requirements.

Cleaning is a physical process (with a strong jet of water, by rubbing) and/or chemical method (applying detergents, containing alkali or acids), ensuring removal of dirt from equipment, gear, constructions of the production premises.

Before the cleaning program is drawn up, it is important to clarify the type of dirt to be treated.

Dirt can be classified as follows:

- organic matters (proteins, fats, carbohydrates); these matters best of all can be removed with detergents, containing strong alkali or acids (Phosphoric acid) as well as with surface active matters;

- inorganic combinations (salts of calcium and other metals); these combinations best of all can be removed with detergents, containing acids;

- biological membranes of micro organisms; these matters best of all can be removed with detergents that affects organic matters.

Water quality is very important in the process of cleaning and disinfection therefore, only potable water can be used for this purpose. Microbiological condition of water is very essential therefore, it is recommended to add small amounts of combinations, containing chlorine. The content of calcium and magnesium ions in hard water is considerable as they react on detergents, their efficiency is thus reduced. When heating such water, soluble salts that form a transitional hardiness of water, precipitate forming precipitation of minerals, which in combination with food residues are very difficult to remove. Some detergents, particularly those containing alkali, also form precipitation of calcium and magnesium salts and facilitates the formation of scale. Due to these reasons, hard water before use for cleaning purposes is recommended to soften by carrying out exchange of ions or reverse osmosis. The major part of modern detergents contains already added softeners but chemical content of water must take into account when choosing more suitable detergents. Using hard water a higher concentration of the detergent might be necessary.

Efficiency of the cleaning, washing and disinfection program of the establishment is associated with introduction of an adequate cleaning process but not so much with the disinfectant used. A simple rinsing of the working surface with chlorine solution of any concentration does not ensure a proper disinfection of the surface if it is not prior cleaned with a suitable detergent. The choice of detergents and disinfectants, their concentration and application method depends on the following conditions:

- type of dirt;
- type of surface;
- extent of necessary washing and disinfection;
- type of detergent and disinfectant applied.

Dry cleaning with a broom or brush, to remove food remains and other dirt from the surface. To remove particles of food it is not advisable to use water jet instead of the brush as water consumption will increase considerably and there will be problems with drains clogged up with dirt as well as dirt and micro-organisms may get on walls and equipment.

The choice of suitable detergents and their application methods reduces the need to rub surfaces by hands but before washing dirt must be physically cleaned away. To ensure an efficient cleaning, the cleaning gear must be chosen thoroughly – any type of brushes. The cleaning gear must be marked or of different colours and it must be used only in specific places. The gear used at the place of initial treatment of raw material, shall not be used at places where finished products - ready for consumption, are handled.

Sponges, cloths and similar items should not be used as they are soaked with water and even after one use they are able to accumulate a huge amount of micro-organisms. Such cleaning gear is difficult to clean and disinfect and it often contaminates the surfaces, which should be cleaned. To remove liquids from surfaces, the cleaning gear with rubber surface can be used.

The cleaning gear after it has been used, must be thoroughly washed, rinsed, disinfected and stored in such a way as to allow it to dry out.

For preliminary rinsing potable water is used to wash off dirt particles left after dry cleaning and to prepare (moistened) surfaces for application of the detergent. It is not necessary to rinse away small particle of food very thoroughly before detergent is applied. In this case cold water is used to avoid coagulation of proteins. Only fats and carbohydrates can be rinsed away with hot water as the dirt has a small content of proteins.

Detergents help to clean dirt particles as well as saves time and water. Each detergent is different and the user instruction must always be followed. Many of the detergents intended for contact with hands are denominated as the detergents of common use. They are not aggressive, they may be used for painted and corrosive surfaces. Such detergents may be effective when applied to slightly dirty surfaces or when the time of contact is long enough and the dry cleaning has been very active.

It is recommended to use in food establishments detergents, containing alkali or chlorine as they are more effective towards food origin dirt as compared to the detergents of common use. The scope of detergents, containing alkali stretches from medium alkali to very alkali.

The following inorganic origin alkalis are widely used:

- sodium hydroxide;
- sodium orthosilicate;
- sodium metalsilicate;
- sodium triaphosphate;
- sodium carbonate;
- sodium bicarbonate;

Phosphates are divided into orthophosphates and polyphosphates. The most popular is sodium triaphosphate. Sodium dihydrogenphosphate and sodium hydrogenphosphate have less explicit alkali properties.

Detergents containing chlorine usually are more aggressive against dirt of protein origin and surfaces, which are difficult to clean due to their shape or size, for example, perforated boxes and waste containers. Detergents containing chlorine are also alkali. They should not be used for materials subjected to corrosion as for example aluminium. Though they contain chlorine they are still detergents and not disinfectants.

If application of too alkali or acid detergents may cause problems, associated with restrictions on waste water draining or equipment easily affected by corrosion, quite acceptable alternative can be ***detergents containing ferments***. As ferments are adapted to specific types of dirt, for common use at the establishment these detergents might be rather ineffective. Such ferment containing detergents are suitable for removal of proteins, fats and carbohydrates. In such cases medium alkali detergents will be ineffective.

Washing methods sometimes are classified in accordance with the construction of production equipment. Washing at work places is carried out in closed technological equipment, washing and disinfecting them by pumping detergents through pipes and connected equipment (such as heating elements or valves) according to preliminary set intervals.

Effect of detergents changes when the time of contiguity, temperature, extent of the previous cleaning as well as chemical parameters of water changes.

The contiguity time. All the washing methods, including washing with foam and soaking, need an adequate contiguity time to soak the dirt and remove completely from surfaces. With medium alkali detergents this contiguity time is 10 – 15 minutes. In a longer run (more than 20 min) the detergent can dry out and repeatedly precipitate dirt on the surface. When choosing the detergent for any specific purpose, the contiguity time must be taken account of.

A simple method to prolong the contiguity time is installation of soaking basins. Boxes, trays and other smaller gear can be placed in the basin to soak for a long time. To avoid any damage when soaking gear for a long time, suitable detergents must be chosen.

Parts of large size equipment and constructions or permanently fixed equipment can be washed effectively if the detergent is applied in the form of foam of gel to prolong the contiguity time of surfaces with the detergent. Air gets into foaming detergent during the time of its application, forming foam. The foam sticks to the treated surfaces and also to vertical surfaces. The dried out detergent similar to other dirt must be washed off with a fresh detergent before rinsing.

When handling alkali or chlorine containing detergents, employees should use adequate cloths and protection means, for example long boots and aprons or special protective overalls and goggles.

Temperature. The temperature rising, the major part of chemical reactions also raises. This refers also to effectiveness of detergents but with some essential exceptions. The raised temperature can facilitate soaking of detergent into dirt spots but not always the high temperature is the best solution. It is recommended to use warm water (about 55°C) for initial washing with detergent and then to rinse with potable water, reaching the temperature of 60-70°C. This increases effectiveness of washing and reduces risk that dirt produced by processing fishing products would precipitate on surfaces.

Rinsing after washing. Residues left after applying detergents, must be thoroughly cleaned from surfaces by rinsing them with potable water. During rinsing, surfaces are cleaned from detergents and dirt and are prepared for disinfecting.

An effective cleaning and washing is an important condition for effective disinfection. Control of cleaning and washing plays an essential role. Quality of cleaning and washing is checked visually with a view to make sure that:

- all the surfaces look clean;

- all the surfaces at a touch are free from product remains, precipitation and undesirable smell.

During inspection, concentration, pH value and temperature of the detergent must be noted. After rinsing the detergent off, one must make sure that no detergent residues are left on the surface and that nothing will hinder disinfection. All the inspection results must be recorded.

On this stage no microbiological checks are necessary as micro-organisms or their biological membranes can still be found on the surface.

***Disinfection*.** After the food contiguity surfaces have been washed and rinsed, they must be disinfected to eliminate or at least inactivate potentially dangerous micro-organisms. Depending on the type of detergent and concentration before disinfection, rinsing after disinfection may be and may not be necessary.

Disinfection is reduction of micro-organisms in number until it reaches the level that is not dangerous for human health. In the process of disinfection micro-organisms are eliminated but not their spores.

Disinfection methods can be divided into following groups:

- non-chemical disinfection methods;
- chemical disinfection methods.

Non-chemical disinfection methods mean treatment of surfaces with hot air or steam. In many cases, steam as a disinfectant can be effective but not efficient means as steam can damage surfaces and cause distortion to equipment as well as produce condensate. Insufficient heating, can create favourable condition for incubation of micro organisms in inaccessible places of equipment.

Chemical disinfection methods mean treatment of surfaces with solution of disinfectants. Clean surfaces are an essential prerequisite for an effective fulfilment of chemical disinfection program. Cleaning, washing and disinfection programs must be co-ordinated and effective as disinfectants will not remove consequences of insufficient cleaning and washing.

Disinfectants diluted in concentrations intended for application, loose their properties in the long run therefore; disinfecting solution should be prepared shortly before application. At the places where disinfectants are prepared their concentration must checked periodically during the day. Frequency of checks must be decided on the basis of disinfectants used. Quality of some disinfectants deteriorates quicker than that of others and before they are used for treatment of surfaces they must be checked more frequently. Special litmus papers are changing their colour in the presence of disinfectant and the colour intensity shows a chemical concentration of the disinfectant but the major part of litmus papers cannot be used for a precise detection of concentration of disinfectant. If the concentration of disinfectant is too weak it must be replaced with a disinfectant of an adequate concentration.

It is not allowed to use old solution of disinfectant to prepare a new solution. Chemical disinfectant if applied incorrectly is not only ineffective but even dangerous. It looses its ability to eliminate micro-organisms or restrict their growth and creates an environment where micro-organisms can multiply.

All the disinfectants must be permitted for use in food industry. They must be prepared and used in accordance with indications on label or manufacturer’s instructions.

Application methods. In the process of disinfection, disinfectant is spread on the washed surfaces of equipment and facilities. Disinfectant may be applied by means of dosing appliances under pressure in the form of sprayers or immersing facilities into basins, containing disinfectant. Some disinfectants, for example, ammonia combinations can be spread in the form of foam with the same appliances that are used spreading of washing foam. This increases contiguity time and the layer is seen.

A sufficient contiguity time is ensured by immersion of facilities in basins, containing disinfectants. Many disinfectants require an accurate handling to avoid damaging of facilities.

Disinfectants can be prepared in the necessary concentration by means of dosing appliances but there can be such systems, which on filling the basin or spraying surfaces give options to the user either to choose detergent or disinfectant or water. Dosing appliances must be necessarily checked to make sure that they operate well and the concentration of disinfectant is adequate. For floors, walls of refrigerators and other surfaces not touching food, a higher concentration disinfectant is used.

It is not recommended to keep brushes and other cleaning gear as disinfecting solution in a long run loses its ability to eliminate micro-organisms or restrict their growth and develops an environment where micro-organisms can multiply.

The basin for disinfection of footwear placed at the entrance into premises is a part of the disinfection program. The basins for disinfection of footwear must be placed on smooth surface.

Types of disinfectants. There are no ideal disinfectants complying with all the requirements. Chlorine and chlorine combinations (in the form of potassium, calcium and sodium hypochlorite) are one of the most effective and the most popular disinfectants with food establishments. Chlorine containing disinfectants can be purchased in the form of hypochlorite and chloramine. Solution of sodium hypochlorite is the most frequently used combination of chlorine. These disinfectants are effective against many bacteria and mould type of fungi. They are effective at low temperatures and water of higher hardiness.

After chlorine is diluted in water it stays there in several chemical forms. Effectiveness of chlorine disinfectants depends on hypochloracetate that is the most effective chemical form of chlorine. Percentage of hypochloracetate increases if pH of water reduces. In water with low value of pH, chlorine is unstable and decomposes quickly without eliminating micro-organisms. If pH is lower than 4,0 then chlorine gas (mustard gas) evolves that is toxic and acid. Due to this reason chlorine disinfectants are used if pH value shows an acid or almost neutral environment. It is not allowed to mix chlorine with ammonium. Such mixture can be dangerous.

Chlorine containing disinfectants can be aggressive in respect of equipment and derive organic by-products of chlorine, which getting into waste water are harmful for environment. Diluted chlorine is unstable and to maintain the necessary concentration, frequent checks are needed and replenishing of the solution. The major part of dirt chemically binds chlorine therefore, before application of disinfectant it is necessary to wash and rinse surface thoroughly. It is not a correct assumption that smell can prove the presence of chlorine in disinfectant. Solution smelling like chlorine might contain very small amount of active chlorine needed to kill micro-organisms or contain no chlorine at all.

Of the total amount of chlorine, the amount of free chlorine (remainder) that can eliminate micro-organisms is the amount that is left after chlorine has bound dirt.

Chlorine containing disinfectants are effective if the concentration of free chlorine in the solution of disinfectant is 200 mg/l (ppm). The presence of organic matters considerably reduces effect of disinfection.

To determine whether the necessary level of free chlorine is achieved, litmus paper must be used.

13.3 Storage of finished products

13.3.1 Storage hygiene

There must be storage room provided at the establishment, equipped with thermographs or tele-thermometers in the warmest place of the room and refrigerating equipment, ensuring the necessary internal temperature of meat. Refrigerating equipment must have devices preventing from condensate;

Meat products subjected to ambient temperature regime, must be stored in easily cleaned and disinfected premises of an one-piece construction.

Packed or wrapped products must be stored on pallets; pallets with products are allowed to place in several layers if it does not cause contamination risk of products; separately from unpacked or unwrapped products, excluding cases when unpacked or unwrapped products are stored or transported in a partitioned compartment and do not cause product contamination risk.

Between products, which are only wrapped and placed on pallets and on top surface of pallets must be placed material protecting the wrapped products from contamination. Unpacked or unwrapped products are not allowed to store together with products that do not fit for human consumption.

Refrigerant in refrigerators must be clean and without ice cover.

13.3.2 Storage Temperature regimes

It must be ensured during storage that the internal temperature of products is not higher:

- than +2°C for chilled minced meat;
- for chilled meat preparations:
- than +2°C if they are produced from minced meat;
- than +7°C if they are produced from fresh meat;
- than +4°C if they are produced from poultry meat;
- than +3°C if they contain by-products;
- than -18°C for frozen meat preparations, frozen minced or cut meat (in pieces smaller than 100 g);
- than +7°C for chilled cut meat;
- than -12°C for frozen cut meat;
- than -18°C for frozen fresh meat;

Other meat products must be stored at a temperature indicated by the manufacturer in accordance with technical norms.

If minced meat is produced from chilled meat referred to in these technical norms, it must be distributed in a chilled condition by ensuring its previous temperature not higher than +2°C or deep frozen with its internal temperature not higher than -18°C.

If minced meat is produced from deboned frozen meat, it must be distributed in deeply frozen condition with its internal temperature not higher than -18°C.

Meat preparation must be distributed:

- chilled, ensuring as soon as possible the following internal temperature:
- not higher than +2°C if they are produced from minced meat;
- not higher than +7°C if they are produced from fresh meat;
- not higher than +4°C if they are produced from poultry meat;
- not higher than +3°C if they contain by-products;
- deep frozen with its internal temperature not higher than -18°C.

Cracklings intended for human consumption must be stored, meeting the following conditions:

- if cracklings have been produced at the temperature not higher than +70°C, they must be stored at the temperature not higher than +7°C and no longer than 24 hours, or at the temperature not higher than -18°C;

- if cracklings have been produced at the temperature higher than +70°C, and their moisture content is 10% or more, they must be stored at the temperature not higher than +7°C and no longer than 48 hours, or at the temperature not higher than -18°C;

- if cracklings have been produced at the temperature higher than +70°C, and their moisture content is less than 10%, there are no limitations as to their storage.

13.3.3 Storage times / temperatures

Fresh frozen meat must be stored:

- beef and veal with the internal temperature that is not higher than -12°C – no longer than 8 months;
- beef and veal with the internal temperature that is not higher than -18°C – no longer than 18 months;
- pig meat with the internal temperature that is not higher than -12°C – no longer than 3 months;
- pig meat with the internal temperature that is not higher than -18°C – no longer than 6 months;
- poultry meat with the internal temperature that is not higher than -12°C – no longer than 4 months;
- poultry meat with the internal temperature that is not higher than -18°C – no longer than 8 months;
- sheep and goat meat with the internal temperature that is not higher than -12°C – no longer than 6 months;

- sheep and goat meat with the internal temperature that is not higher than -18°C – no longer than 12 months;

Meat that has not been wrapped or packed in vacuum packing or packed under regulated atmospheric conditions, is allowed to be stored in chilled condition:

- beef and veal with the internal temperature that is not higher than +7°C – no longer than 6 days;
- pig meat with the internal temperature that is not higher than +7°C – no longer than 6 days;
- poultry meat with the internal temperature that is not higher than +4°C – no longer than 5 days;
- minced meat with the internal temperature that is not higher than +2°C – no longer than 24 hours;

The ultimate shelf-life of deep frozen minced meat and meat preparations shall not be longer than 18 months.

Shelf-life of meat products is laid down in technical rules and norms of the establishment.

The thermometer must install in the warmest place of the room. The temperature must be recorded (thermograph). By 1 January 2003, there can be thermometers instead of thermographs and telethermometers.

13.4 Transport of finished products

The consignment compartment of a lorry must be cleaned, washed, disinfected and after disinfection rinsed with potable water in accordance with the plan provided by owner of the establishment or an authorized person and this plan must be approved by the State veterinary inspector of the veterinary department of a respective district (city). If animal infectious diseases have been found, lorries of the food establishment must be washed and disinfected in accordance with inst instructions issued by the State veterinary inspector of the veterinary department of a respective district (city). Products must be loaded into consignment compartment of a lorry only after washing and disinfection of the consignment compartment.

13.4.1 Compliance with hygiene requirements

It is not allowed to transport products unfit for human consumption or live animals in the consignment compartment of a lorry where products are transported.

Packed or wrapped products must be transported as follows: placed on pallets; pallets with products can be arranged in several layers if this does not cause product contamination risk; separately from unpacked or unwrapped products, excluding cases when unpacked or unwrapped products are stored or transported in a partitioned compartment and do not cause product contamination risk.

In between products wrapped and placed on pallets and the upper surface of pallets material must be placed that protects products from contamination risk. Unpacked or unwrapped products are not allowed to transport together with products unfit for human consumption.

13.4.2 Transportation Temperature regimes

Lorries used for transportation of products must be equipped with devices, which ensure that the internal temperature of products during the transport is not higher than that referred tin in regulatory documents.

During transport an uninterrupted recording of the temperature must be ensured.

By 31 December 2003, transition period rules will be applied to transport vehicles, which are not carrying products outside country. During this transition period, it is allowed to apply derogation from provisions of the temperature regime referred to in subparagraphs b) and c) during transportation of products, on condition that at the places of loading and destination the temperature, complying with requirements laid down in legal acts, is ensured and the duration of transportation does not exceed two hours.

IV PRODUCT SAFETY AND QUALITY MONITORING

1 Personnel

There must be at the establishment the quality manager who is subordinated to the manager of the establishment. The quality manager must have the necessary qualification and experience in production of fish products, HACCP system implementation and control skills.

There must the staff professionally prepared and sufficient in number at the establishment to ensure product safety and quality monitoring.

2 Laboratory

There must be enough workstations at the establishment laboratory and free access to tables. There must hot and cold running water, adequate sink to wash equipment and vessels and if necessary a special sink for thawing of fishing products as well as extraction ventilation, daylight or artificial light not less than 540 lux.

The laboratory floors and walls must be smooth, waterproof and washable. There must be an adequate storing facility provided at the laboratory for equipment and reagents. It is important that the laboratory is constructed in such a way as to protect from dust pollution.

Premises must easily clean, and such ambient factors as temperature and moisture must be taken into account.

The laboratory, depending on the product type, must be equipped with the following equipment and devices:

- for the temperature measurement;
- for detection of microbiological contamination of surfaces, equipment and hands of staff;
- for organoleptic evaluation of raw materials and finished products;
- determination of pH level;
- for determination of microbiological properties of raw material;
- for determination of industrial sterility level in canned products;
- for measuring of the internal pressure of cans;
- for measurement of double joints of cans.

Results of all the aforementioned checks and tests must record in special registers or forms.

3 Control of potable water

Control of potable water at the establishment must be carried out in accordance with the periodicity laid down in relevant regulatory documents, taking samples at the places where water is used and testing microbiological, chemical and organoleptical characteristics and pH level.

If the establishment uses potable water from different sources then each water intake source must be checked separately.

4 Control of raw materials

When receiving meat at the establishment, its internal temperature must be determined. In accordance with Article 44 of the Law on Veterinary Medicine, fresh and frozen meat is allowed to distribute only after veterinary expertise carried out by an authorized veterinarian of the Food and Veterinary Service and in accordance with his opinion on the further use of meat. The receipt of fresh meat at the establishment is allowed only when accompanied with the certificate of veterinary expertise.

5 Supervision of production processes

The quality management staff must regularly follow the production process to make sure that requirements laid down in these Guidelines and technical norms are met. The quality management staff must check whether meat is not left on tables and production lines during the lunchtime, the temperature of meat must be regularly checked.

Temperature of products produced from fresh and frozen meat must be regularly checked at their storage chambers, technological process as well as sealing quality of cans.

All the measuring devices must calibrate and checked with the periodicity laid down in regulatory documents.

5.1 Checks on compliance with hygiene requirements

The quality management staff must control that everybody upon entering the establishment meets the requirements laid down in these Guidelines. There must be a written program for cleaning, washing and disinfection in place at the establishment covering cleaning, washing and disinfection of all the premises. The quality management staff of the establishment must check the fulfilment of cleaning, washing and disinfection program. The program and its fulfilment records must be made available to inspectors.

A complete microbiological swab test of work surfaces, equipment and containers of finished products must be carried out once a month and more frequently if necessary, in order to check effectiveness of cleaning, washing and disinfection of the establishment.

5.2 Checks on finished products

Selection of samples and microbiological tests must be carried out in compliance with requirements laid down in Latvia's legislation. The level of microbiological contamination, toxic elements and harmful admixtures shall not exceed the admissible levels referred to in legal acts and technical norms.

Finished products must be subjected to organoleptical, microbiological and chemical tests as to the compliance with criteria set up in technical norms.

Cans must be industrially sterile according to microbiological criteria. Industrial sterility must be determined for each batch of cans. The internal pressure of the selected cans must be measured with the vacuometer.

6 Storage of inspection data

The above-mentioned inspection and test results must be recorded on special forms, registers or testing reports.

The register of samples and sample testing results must stay at the establishment at least for two years and produced to officials of the Food and Veterinary Service upon request. In respect of chilled products this time can be reduced up to six months after expiry of shelf-life of a certain product.

Results of inspections and tests must be made available to inspectors during inspection visits to the establishment.

V SWAB TESTS

1 Sampling

Samples for swab tests are taken with moist and sterile cotton wound on sticks or with a piece of cloth 5 x 5 cm in size that has been prior prepared at the laboratory or in another way. On the day when samples are taken 5cm³ of sterile physiological solution or 0,1% peptone liquid must be poured in each test-tube where the swab is placed. The swab must be placed above the liquid without touching it. The swab must be soaked in one of the aforementioned solutions before samples are taken.

Samples for swab tests from large-size equipment and tools as well as cans with the volume more than 500 cm³, boxes, barrels and walls of production premises must be taken from 100 cm³ of internal surface, using the stencil made from wire or metal sheet. Area inside the stencil is cleaned with a wet cotton swab or a piece of gauze in reciprocally opposite directions.

Samples for swab tests from small-size devices or tools are taken from the whole area of internal surface. After samples have been taken the swab is again placed into the test-tube with sterile solution; the test-tube is shaken and left to settle for 2-3 minutes. To determine the total bacteria count of the obtained material, 1 cm³ is taken and if necessary, 1 cm³ for detection of mould fungi. To determine enteric bacteria, 5 cm³ of Coda or Kessler media with lactose is added to the remaining solution.

Samples for swab test from cans with the volume more than 500 cm³ are taken with 10 cm³ of sterile solution. The can that is filled with solution is covered with the lid and shaken then one more dilution is prepared and plated.

While inspecting pipelines and equipment where stencils cannot be used, microbiological test must be carried out on the last washing water (about 100 cm³) after equipment has been washed. If only enteric bacteria is determined then 1 cm³ of washing water or swab is placed into 5 cm³ of Coda or Kessler media.

In order to take samples for swab test from hands, palms are cleaned lengthwise and crosswise with the swab soaked in a sterile solution then the space between fingers; nails and cuticles are cleaned. For gloves the palm side is cleaned. The swab is placed into 5 cm³ of Coda or Kessler media.

VI AUDIT

The audit is a systematic and independent analysis with a view to clarify whether activities associated with the quality and the results obtained:

- comply with guidelines laid down in regulatory documents;
- are fulfilled daily;
- suits well for achievement of the target;

1 Types of the audit depending on the type of customers:

- internal
- customer
- certification

2. Types of the audit depending of the area to be audited

- system
- process
- product or service
- Preparation program
- audit plan
- notification of the customer
- co-ordination of the audit group and the auditing process
- preparation of the check-list
- acquainting with documentation

3 Auditing process

- introductory interview
- audit negotiations
- audit records
- conclusions on incompliance
- concluding negotiations
- audit report

4 The audit plan

- the senior auditor submits to the responsible person of the establishment undergoing the audit.
- the audit plan must be flexible (changes can be introduced in the process)
- objections regarding the plan must be clarified before the audit procedure
- content of the audit plan
- objectives, scope and content
- the establishment undergoing the audit.
- the necessary documents
- names and surnames of senior auditors
- date and place of the audit

- the time table
- confidentiality requirement
- concluding negotiations
- lists of recipients of the audit report, preparation date of the report

5 Preparatory activities of the audit

- the auditor must receive information on the organization – namely, assortment of finished products, market situation, number of employees
- preliminary acquaintance with the documentation – HACCO manual, technical norms, results of the previous audits
- acquaintance with the documentation characterizing products if needed.

6 Introductory interview

- In order to clarify objectives of the audit and to relieve tension among participants of the audit.
- Main objective of the introductory interview:
- to acquaint the organization undergoing the audit with the group of auditors
- to discuss objectives and content of the audit
- to acquaint with methods and procedures of the audit
- to verify availability of resources and equipment necessary for the audit
- to set up deadlines for concluding negotiations as well as for preliminary negotiations
- to specify vague issues if necessary
- Example of the audit questions at the establishment: what practice and criteria are complied with when receiving raw materials?
- what are your actions if raw material does not comply with criteria?
- what kind of co-operation your establishment maintains with suppliers of raw material?
- what is raw material storage conditions before processing?
- how do you register data on compliance with raw material storage conditions?
- what would be your actions if microbiological tests of finished products showed inadmissible contamination in some product groups?
- how do you verify the manner suppliers handle raw material?
- what would be your reaction on seeing a rodent in production premises?
- what are your actions if the level of the indices characterizing the process (temperature, time…) exceeds the critical limits?
- how the temperature in production premises is checked?
- how do you prepare detergents
- for washing premises and equipment?
- when and how do you dispose of the spoilt products?
- is it inconvenient to wear wristwatch while working?

- on which critical situations occurring in your workstation you must immediately notify your foreman?
- how often and in what way the equipment you are operating is washed?
- how do you handle the product if in the middle of the process equipment breaks down?
- How do you handle waste?

7 Examples of questions for HACCP audit:

- are there guidelines laid down for storing and use of the product?
- is the composition HACCP work group decided?
- is the work group leader familiar with HACCP system development methodology?
- are minutes kept of the work group meetings of?
- are the product descriptions drawn up?
- are the possible users of the product identified?
- Does the chart of the process stages cover all the process stages?
- are hazards associated with packing type recognized?
- are microbiological or chemical safety criteria of the product identified and documented?
- are layouts of production premises developed where placement of equipment is shown?
- are characteristics of equipment developed from the point of view of hygiene and safety?
- is the necessity of the temperature and time history for raw material, intermediate products and finished products recognized?
- are transportation routes and storing places of waste identified?
- how cleaning and disinfection procedures are carried out?
- are the routes of staff movement determined and indicated in the layouts of premises?
- are high and low hazard areas separated and indicated in the layouts of premises?
- is the chart of process stages verified in workstations?
- are reasons of possible hazards identified in each process stage?
- are possible hazards treated regarding cases not covered by the process chart (late arrival, equipment damage, short-term storage, etc.)?
- are measures laid down to preventing hazard reasons?
- what data was used identifying critical points?
- how many critical points are identified?
- are measurable characteristic indices identified in all the critical points?
- is the nominal value of characteristic indices and critical limits identified from the point of view of product safety?
- Is the procedure for measuring, frequency and recording of characteristic indices developed?

- are the features of the process incompatibility in critical points identified?
- is procedure of the possible corrective measures developed in critical points?
- is data registration carried out systematically in critical points?
- are characteristic indices identified in critical points directly on production flow or by sampling?
- is frequency and practice of identification of the characteristic indices laid down?
- are employees appointed to measure the characteristic indices in critical points?
- do these employees possess knowledge and competence enough to take corrective measures in case of incompatibility?
- is a detailed description drawn up for measuring of the characteristic indices in critical points?
- are measures provided for cases when characteristic index has exceeded critical limits or approaching them?
- is a particular treatment envisaged in respect of products, which have been produced in the period of time when characteristic index has exceeded critical limits?
- are corrective measures documented?
- is a clear competence identified for implementation of the corrective measures?
- how cases when characteristic index has exceeded critical limits in critical point are documented?
- is information on disposal of the spoilt products documented?
- how changes in production process are documented?
- how assessment of HACCP system is carried out?
- how often HACCP system is assessed?
- how reports from trade places on unexpected spoilage of products are recorded?
- in what situations operation of HACCP system is revised?

8 Auditors negotiations:

- to clarify the subject of negotiations;
- to develop an logical framework of negotiations;
- to speak on a certain subject only and to direct the negotiation partner towards it;
- to speak in simple terms and sentences, adjusting themselves to the negotiation partner;
- to ask additional questions in unclear matters:
- to ask unambiguous questions;
- to ask to indicate to valid instructions regarding measures and the issues discussed?
- to ask to produce proofs and records;
- the audit must carried out in the form of negotiations, it is not reasonable to asks very specific and narrow questions;
- it is effective to pose the questions beginning with how? with whom? where? when? why?

9` Types of incompliance

- failure to meet requirements laid down by standards in documentation and activities;
- inadequacy of actions to achieve the goal;
- practical activities do not comply with the identified activities;
- the identified activities are not always carried out;

When assessing incompliance, their type, frequency and impact on the quality must be taken into account.

9.1 Major incompliance

- measures required by legal acts legal acts are not identified and documented;
- actions carried out are not adequate to the type of the establishment operation;
- systematically repeated incompliance;
- the sum of individual incompliance influences effectiveness of the whole system;

9.2 Minor incompliance

- measures not sufficiently documented in writing but fully implemented in practice;
- some incompliance in practical work;

9.3` Conclusions on incompliance

- There must be a conclusion produced on each incompliance, containing the following information:
- the establishment undergoing the audit;
- time of the audit;
- identification number of the audit;
- surname of the senior auditor;
- surnames of employees undergoing the audit;
- incompliance found;
- seriousness of incompliance found;
- necessary corrective measures;
- implementation deadlines;
- notes on implementation of corrective measures;

10 Concluding negotiations

The main objective – to acquaint the management of the establishment undergoing the audit with the audit conclusions and to achieve their awareness.

The management of the establishment that is undergoing the audit confirms with their signatures their acknowledgement of incompliance found. If there are differences in opinions, it is recommended to reflect them in the audit report.

10.1 Contents of the concluding negotiations:

- reference to selective character of the audit procedures;
- conclusions on achievement of the audit objectives;
- summary of positive observations;
- reference to the necessity to discuss serious incompliance;
- detailed information on incompliance;
- observation;
- discussions;
- deadlines of corrective measures;

11 Audit report

The audit report is prepared by the group of auditors under the guidance of the senior auditor.

11.1 Content of the audit report:

- objective and scope of the audit;
- the audit date;
- the establishment undergoing the audit;
- number of the audit report;
- senior auditor;
- participants;
- summary of the audit conclusions;
- reference to the basic audit documents
- comments on the establishment
- positive results
- incompliance
- assessment
- comments
- assessment of implementation efficiency of requirements laid down by regulatory documents
- the list of the checked documents
- the list of conclusions on incompliance
- the date of the next audit
- recipients
- signatures

VII ASSESSMENT OF THE ESTABLISHMENT

1 The establishment stoppage criteria

- no potable water supply is available at the establishment, including hot potable water;
- potable water used at the establishment does not comply with requirements laid down in regulatory documents;
- neither staff cloak rooms nor toilet facilities are provided;
- sewerage system is not operating;
- washing and disinfection procedures are not carried out;
- the staff has not undergone health examinations;
- chillier at the slaughterhouse does not ensure a proper chilling of slaughter products;
- there is not a special room provided at the establishment for storing of raw material and finished products;
- chambers for thermal treatment of products and autoclaves do not ensure a proper finishing temperature, the regime of thermal treatment;
- laboratory tests under the establishment self-check procedures are not carried out;
- the establishment uses raw materials without relevant veterinary accompanying documents;
- products are manufactured without relevant technical rules and technological instructions;
- unauthorized food additives are used in production;
- the deadline for corrective measures in respect of the previous notification has expired and no actual measures have been taken by the establishment to correct the incompliance found out;
- marking.

2 Temporary suspension or warning criteria

The establishment is partly compliant, and the aforementioned requirements must be met within the period of time set up by the inspector (stoppage notification of the establishment)

- surfacing of the territory, tidiness and protection against unauthorized access of persons and animals are not adequate;
- waste collection devices and waste storing place is not compliant;
- potable water intake (fenced, locked), technical condition of potable water pipes, identification of pipes are not compliant (on condition that laboratory test results of potable water are compliant);
- sewerage system is not equipped with ladders;
- ventilation system is not equipped with sieves and gratings;
- layout of rooms and equipment at the establishment does not ensure the flow of technological processes;
- the number of devices for washing and disinfection of hands and tools is insufficient and their equipment and placement is incompliant;
- incompliant hygienic condition equipment and appliances;

- no room or cabinet is provided for storing of detergents and disinfectants;
- incompliant layout and equipment of staff rooms;
- incompliant receipt of raw material and distribution place of finished products;
- self-check system (HACCP) is not developed;
- incompliant hygienic condition of pre-slaughter compartments and equipment at the slaughterhouse;
- equipment and appliances are made from corrosive material.