

RECOMMENDED CODE OF HYGIENIC PRACTICE FOR POULTRY PROCESSING (CAC/RCP 14-1976)

1. SECTION I - SCOPE

This Code is concerned with all poultry, poultry carcasses, poultry parts and other edible materials thereof which have not yet been treated in any way to ensure their preservation, except that they have been chilled or frozen and are intended for human consumption, whether by direct sale as such or through further processing.

It applies to all premises in which poultry is slaughtered, packed, or otherwise handled in the course of preparation, and all premises in which poultry parts are processed, packed, or otherwise handled in the course of preparation. It also applies to conditions of transport from all such premises.

2. SECTION II - DEFINITIONS

For the purposes of this Code:

2.1 *Poultry* means any domesticated bird including chickens, turkeys, ducks, geese, guinea-fowls, or pigeons.

2.2 *Carcase* means the whole of a bird after stunning, bleeding, plucking and eviscerating. However, removal of the kidneys, of the legs at the tarsus, or of the head is optional.

2.3 *Giblets* means the liver from which the bile sac (gall bladder) has been removed, the heart with or without the pericardial sac and the gizzard from which the lining and contents have been removed and any other material considered as edible by the consuming country, provided that all such material has been properly trimmed and washed.

3. SECTION III - RAW MATERIAL REQUIREMENTS

3.1 Environmental Hygiene in Raw Food Material Production Areas

Note: Recommendations in this Section are not designed to cover the very important questions of hygiene and disease control in poultry growing and rearing areas. These factors have a particular bearing on this Code but are the responsibility of the official agency having jurisdiction.

3.1.1 Sanitary disposal of human and animal wastes. Adequate precautions should be taken to ensure that human and animal wastes are disposed of in such a manner as not to constitute a public health or hygienic hazard and extreme care should be taken to protect

products from contamination with these wastes.

All droppings, litter, scrapings, etc. from cages, crates and vehicles should be removed at least once daily. Arrangements for the disposal of trade refuse should be approved by the appropriate official agency. A separate refuse room or other equally adequate storage facilities should be provided on the premises and should be emptied and thoroughly cleaned and disinfected at least once daily.

3.1.2 **Pest and disease control.** Where control measures are undertaken, treatment with chemical, biological, or physical agents should be done only in accordance with the recommendations of the appropriate official agency, by or under the direct supervision of personnel with a thorough understanding of the hazards involved, including the possibility of toxic residues being retained.

3.2 Sanitary Food Production

3.2.1 **Equipment and product containers.** Equipment and product containers should not constitute a hazard to health. Containers which are re-used should be of such material and construction as will facilitate thorough cleaning, and should be so cleaned and maintained as not to constitute a source of contamination to the product.

3.2.2 **Sanitary techniques.** Any live poultry holding section and attendant processes such as egg collection should be quite separate from the slaughtering and poultry packing section. This applies particularly to the disposal of refuse and storage of poultry feeding-stuffs.

3.2.3 **Removal of obviously unfit materials.** It is recommended that unfit birds should be segregated prior to delivery to the processing plant. Similarly, on arrival, unfit birds should be removed as soon as possible and segregated for disposal in an appropriate manner. Arrangements for removal and segregation should be approved by the official agency having jurisdiction.

3.2.4 **Protection of product from contamination.** Suitable precautions should be taken to protect the birds from being contaminated by animals, insects, vermin, other birds, chemical or microbiological contaminants or other objectionable substances during handling and holding.

3.3 Transportation

3.3.1 **Facilities.** Conveyances and crates for transporting the live birds from the production area should be adequate for the purpose intended and should be of such material and construction as will permit thorough cleaning and should be so cleaned, disinfected and maintained as not to constitute a source of contamination.

4. SECTION IV - PLANT, FACILITIES, AND OPERATING REQUIREMENTS

4.1 Plant Registration, Construction and Layout

4.1.1 **Registration.** Plants should be approved and registered by the official agency having jurisdiction.

4.1.2 **Location, size and sanitary design.** The building and surrounding area should be such as can be kept reasonably free of objectionable odours, smoke, dust, or other contamination; should be of sufficient size for the purpose intended without crowding of equipment or personnel; should be of sound construction and kept in good repair; should be of such construction as to protect against the entrance and harbouring of insects or birds or vermin; and should be so designed as to permit easy and adequate cleaning.

Whether existing buildings are being adapted or new premises are being built, early consultation with the appropriate official agency is essential.

A proper work flow is necessary to secure good hygiene standards. An example of a suitable work flow with physical separation of the processes is illustrated in Fig. 1 (see Annex) which can be adapted according to requirements.

4.1.2.1 **Roadways and yards.** Roadways and yards in the immediate vicinity of and serving the premises should have a hard, paved surface which is suitable for wheeled traffic, and should have provision for thorough cleaning where necessary and adequate drainage.

4.1.2.2 **Walls, ceilings and floors.** Walls should be finished to a smooth, non-absorbent, washable surface, be light in colour, and the junction between walls and floor should be covered or splayed to facilitate cleaning. Ceilings should be so constructed and finished as to minimize condensation, mould development, flaking and the lodgement of dirt. Floors should be of durable, impervious non-slip material, free from cracks and open joints and laid to an even surface properly sloped to an adequate drainage system.

Buildings should preferably have lined roofs but where these are unlined they should be constructed and finished to minimize condensation, mould development, flaking, and dirt, in order to protect against contamination of the product.

4.1.2.3 **Woodwork, doors, and windows.** Woodwork should preferably not be used. If its use is unavoidable it should be kept to a minimum, be of simple design, easy to clean, and be tight fitting to wall surfaces. Doors and jambs should, where necessary, be fitted on both sides with non-corroding metal or other suitable materials as a protection from impact damage, and doors where necessary should be fitted with self-closing devices. All external openings and doors and openable external windows should be equipped to exclude flying insects, where these present a problem. Windowsills should be splayed at an angle.

4.1.3 **Sanitary facilities and controls**

4.1.3.1 **Separation processes.** Areas where birds are received or stored should be so separated from areas in which final product preparation or packaging is conducted as to preclude contamination of the finished product. Areas and compartments used for storage, manufacture or handling of edible products should be separate and distinct from those used for inedible materials. The food handling area should be completely separated from any part of the premises used as living quarters.

4.1.3.2 **Water supply.** An ample supply of both hot and cold water should be available of the potable quality referred to in the General Principles of Food Hygiene (CAC/RCP 1-1969), Sections 4.3.12 and 7.3. The water used during the preparation, handling, packing and storing of poultry carcasses, poultry parts and other edible material should be potable. Samples of the water should be taken regularly and tested for conformity with the bacteriological and chemical standards.

The appropriate authority may permit in-plant chlorination of water if this is necessary for public health reasons.

Where in-plant chlorination of water is used, the residual content of free chlorine should not exceed that authorized by the official agency having jurisdiction.

4.1.3.3 **Ice.** Ice should be made from water of potable quality and should be manufactured, handled, stored and used, so as to protect it from contamination.

4.1.3.4 **Auxiliary water supply.** Where non-potable water is used - for such purposes as fire control - it must be carried in completely separate lines, identified preferably by colour and with no cross-connection or back siphonage with the lines carrying potable water.

4.1.3.5 **Plumbing and waste disposal.** All plumbing and waste disposal lines (including sewer systems) must be large enough to carry peak loads. All lines must be watertight and have adequate traps and vents. Disposal of waste should be effected in such a manner as not to permit contamination of potable water supplies. The plumbing and the manner of waste disposal should be approved by the official agency having jurisdiction.

Sumps or solid matter traps included in the drainage system within the plant should be emptied and cleaned frequently and at the end of every working day. Every inlet into the drainage system should be trapped and no drain ventilation pipe should open into any room.

Any internal open channelling should be rounded and of sufficient width to allow for easy cleaning, and of minimum efficient depth. Covering grids should be easily removable for cleaning. Channels should be flushed frequently during processing and thoroughly cleaned at least once daily.

4.1.3.6 **Lighting and ventilation.** Premises should be well lit and ventilated. Special attention should be given to the venting of areas and equipment producing excessive heat, steam, obnoxious fumes or vapours or contaminating aerosols. Good ventilation is important to prevent both condensation (which may drip into the product) and mould growth in overhead structures - which growth may fall into the food. Light bulbs and fixtures suspended over food in any step of preparation should be of the safety type or otherwise protected to prevent food contamination in the case of breakage.

Lighting should have an overall intensity of not less than 325 Lux (30 foot candles), and in inspection areas this should be increased to no less than 540 Lux (50 foot candles), should not affect colours and be properly directed onto the bird.

4.1.3.7 **Toilet-rooms and facilities.** Adequate and convenient toilets should be provided and toilet areas should be equipped with self-closing doors. Toilet rooms should be well lit and ventilated and should not open directly into a food handling area. They should be kept in a sanitary condition at all times. There should be associated hand-washing facilities within the toilet area and notices should be posted requiring personnel to wash their hands after using the toilet.

4.1.3.8 **Hand-washing facilities.** Adequate and convenient facilities for employees to wash and dry their hands should be provided wherever the process demands. They should be in full view of the processing floor. Single-use towels are recommended, where practicable, but otherwise the method of drying should be approved by the official agency having jurisdiction. The facilities should be kept in a sanitary condition at all times.

Handwashing facilities in workrooms should not be capable of being operated by hand.

4.1.3.9 **Accommodation for clothing and footwear.** Suitable and sufficient accommodation for keeping clothing and footwear not worn during working hours should be provided. Such accommodation should be separate from any processing room.

4.2 Equipment and Utensils

4.2.1 **Materials.** All food contact surfaces should be smooth; free from pits, crevices and loose scale; non-toxic; unaffected by food products; and capable of withstanding repeated exposure to normal cleaning; and non-absorbent unless the nature of a particular and otherwise acceptable process renders the use of a surface, such as wood, necessary.

4.2.2 **Sanitary design, construction and installation.** Equipment and utensils should be so designed and constructed as will prevent hygienic hazards and permit easy and thorough cleaning. Stationary equipment should be installed in such a manner as will permit easy and thorough cleaning. Suitable, easily accessible equipment for the cleaning and disinfection of hand tools by means of hot water should be provided in workrooms.

Equipment and utensils used for condemned, inedible or contaminating materials should be so identified and should not be used for handling edible products. Processing equipment and utensils used for slaughtering and packing should be used for these purposes only.

4.2.3 **Bleeding and blood collection.** Bleeding equipment, including blood tunnels and blood containers, should be constructed of non-corrodible metal or other suitable material which is easy to clean. They should be thoroughly cleaned after major breaks during working periods and at the end of the day. Blood tunnels which are of solid wall construction should be properly tiled or otherwise smooth surfaced with impervious material, suitably drained, and of sufficient width and construction as to facilitate thorough cleaning. Metal tunnels should be fitted with side and head shields easily removable for cleaning and the base trough should have a suitable fall to a blood container which can be easily emptied and cleaned.

4.2.4 Processing equipment

4.2.4.1 Scalding should preferably be carried out by more hygienic methods than by the use of scalding tanks. When scalding tanks continue to be used, particular care should be taken to ensure that hygienic standards are as good as possible. The rate of flow of water into these tanks should provide for a continuous replacement of the water so as to protect against a build-up of contamination and preferably, where practicable, in such a way that the water flow should be in the opposite direction to that in which poultry is travelling, so that the scalded poultry is pulled out on that side of the scalding tank on which clean hot water enters the tank. Tanks should be emptied at regular intervals and at least once every working day. Scald agents where used, should be approved by the official agency having jurisdiction.

4.2.4.2 Plucking machines should be designed to control the scatter of feathers as much as possible. The removal of feathers from the site should preferably take place continuously or as often as necessary, throughout the working day. Feathers should be stored in suitable clean containers which should be removed at least once daily. Feathers conveyed by continuous running water should be removed from the water which should preferably be run to waste.

4.2.4.3 Perforated metal drainage surfaces should be reversible for cleaning purposes.

4.2.4.4 Evisceration troughs should be constructed of stainless steel or other suitable material. The main water flow should be in the opposite direction to that in which carcasses are travelling so that the carcass arrives for cooling at the point where clean water enters the trough. Additionally, trickle jets of clean water should be provided along both sides of the trough, and supplies of running warm water should also be provided over the troughs for hand rinsing. The troughs should be arranged to limit the travel of inedible material by the insertion of outlets and containers at strategic points in addition to the main outlet. The number and placing of the outlets should prevent build-up of material in the troughs and should be commensurate with the rate of flow of production, the design of equipment and other relevant variable factors. Particular attention should be paid to the provision of adequate outlets where the trough is longer than 10 metres.

4.2.4.5 Storage containers for inedible material should be leak-proof, constructed of metal or other suitable impervious material which is easy to clean, and be covered with close-fitting lids. Where chutes or other continuous disposal methods are used they should be so constructed as to protect against contamination or offensive odours.

4.2.4.6 Premises where poultry carcasses, poultry parts, and other edible material are kept should have adequate refrigerated storage.

4.2.4.7 Equipment used for chilling the carcasses and edible material should be constructed of stainless steel or other suitable material and should be so operated as to protect against the build-up of microorganisms. Spin chillers and other processes of chilling in a common tank, when their use is not prohibited by national legislation, should be operated in accordance with the requirements established by the official agency having jurisdiction.

4.2.4.8 Compounds used in spray or immersion freezing procedures should be acceptable to the appropriate official agency.

4.3 Hygienic Operating Requirements

4.3.1 **Sanitary maintenance of plant, facilities and premises.** The building equipment, utensils and all other physical facilities of the plant should be kept in good repair and should be kept clean and maintained in an orderly sanitary condition. Waste materials should be frequently removed from the working area during plant operation and adequate waste receptacles should be provided. Detergents and disinfectants employed should be appropriate to the purpose and should be so used as to present no hazard to public health.

4.3.1.1 These operations should be under the supervision of an appropriately qualified person, approved by the official agency having jurisdiction.

4.3.1.2 **Cleaning routine.** Premises, equipment and utensils should be cleaned at frequent intervals during the day. They should be cleaned and disinfected, immediately and thoroughly, whenever circumstances demand it, such as when they have been in contact with diseased or infected materials. Additionally, they should be cleaned and disinfected at the end of each working day.

4.3.1.3 The premises should be cleared of all live poultry at least once weekly to facilitate complete and thorough cleansing. Birds should normally be slaughtered within 24 hours of arrival and any water fed to them should be of potable quality.

4.3.1.4 To avoid the risk of cross-contamination, blood and feathers should be kept away from the plucked poultry as they go on for the next stage of processing.

4.3.1.5 Each process should be carried out in its own clearly defined area.

4.3.1.6 Poultry which is received rough plucked for the next stage of processing, should be hung singly or arranged in single layers on racks or similar type of equipment.

4.3.1.7 Feed in the crop and faecal material in the cloaca should be removed by such means as will protect against contamination; for example, by suction.

4.3.1.8 Wax dipped poultry should be handled so that the set wax and removed feathers will fall into a suitable container. Only clean wax which has been stored in a clean place should be used for wax dipping. Feather separation sieves included in wax dipping machines should be removable and cleaned once daily. At the close of the working day reclaimed wax should be heated (a temperature of not less than 80°C (176°F) for a period of not less than 20 minutes, has been found to be effective), skimmed, washed, and filtered or passed through a centrifugal cleaning machine and afterwards stored in a clean place.

4.3.2 **Vermin control.** Effective measures should be taken to protect against the entrance into the premises and the harbourage on the premises of insects, rodents, birds or other vermin.

4.3.3 **Exclusion of domestic animals.** Dogs, cats and other domestic animals should be excluded from areas where food is processed or stored.

4.3.4 Hygiene and health of personnel

4.3.4.1 Managers of establishments should arrange for adequate and continuing training of every employee in hygienic handling of poultry and clean habits so that the employees are able to take the necessary precautions to prevent contamination of poultry. Instructions should include relevant parts of this Code.

4.3.4.2 It is recommended that national legislation should provide for a medical examination of poultry handlers, and inspectors and other persons who come into contact with poultry in establishments. This medical examination should be carried out just prior to employment and should be repeated when clinically or epidemiologically indicated. The medical examination should pay particular attention to 1) infected wounds and sores; 2) enteric infections including parasitic diseases and carrier states, especially with respect to *Salmonellae*; and 3) respiratory diseases.

4.3.4.3 The management should take care to ensure that no employee, while known or suspected to be suffering from or to be a carrier of a disease capable of being transmitted through poultry, or while afflicted with infected wounds or sores or diarrhoea, is permitted to work in any area of an establishment in a capacity in which there is a possibility of such a person directly or indirectly contaminating poultry with pathogenic microorganisms. Any persons so affected should immediately report to management that they are ill.

4.3.5 **Toxic substances.** All rodenticides, fumigants, insecticides or other toxic substances should be stored in separate locked rooms or cabinets and handled only by properly trained personnel. They should be used only by or under the direct supervision of personnel with a thorough understanding of the hazards involved, including the possibility of contamination of the product.

4.3.6 Personnel hygiene and food handling practices

4.3.6.1 All persons working in a food plant should maintain a high degree of personal cleanliness while on duty. Personnel working with live birds, feeding stuffs or unfit materials should not be permitted in other sections of the premises where poultry is being processed unless adequate cleansing measures are taken by such personnel to prevent contamination. Clothing including suitable head-dress should be appropriate to the duties being performed and should be kept clean.

4.3.6.2 Hands should be washed as often as necessary to conform to hygienic operating practices.

4.3.6.3 Spitting, eating, chewing and the use of tobacco should be prohibited in food handling areas.

4.3.6.4 All necessary precautions should be taken to prevent the contamination of the food product or ingredients with any foreign substance.

4.3.6.5 Minor cuts and abrasions on the hands should be appropriately treated and covered with a suitable waterproof dressing. Adequate first-aid facilities should be provided to meet these contingencies so that there is no contamination of the food.

4.3.6.6 Gloves used in food handling should be maintained in a sound, clean and sanitary condition; gloves should be made of an impermeable material except where their usage would be inappropriate or incompatible with the work involved.

4.4 Operating Practices and Production Requirements

4.4.1 Inspection and sorting

4.4.1.1 To protect against the risk of cross contamination, domesticated birds including chickens, turkeys, ducks, geese, guinea-fowl, or pigeons should be processed completely separate from one another either in time or place. Where the separation is one of time the processing areas should be cleaned thoroughly before the introduction of a different species of bird to the processing area. Workers employed with live birds, feeding-stuffs or unfit materials should not be permitted to work in parts of the premises where poultry is slaughtered or processed, unless adequate cleansing measures are taken by such personnel to prevent contamination.

4.4.1.2 In order to maintain good hygienic conditions and to prevent hazards to the consumer, all poultry should undergo ante-mortem and post-mortem inspections which should be carried out by the appropriate official agency, under veterinary supervision.

4.4.1.3 Independent of ante-mortem and post-mortem inspection procedures, it is recommended that unfit poultry or poultry suspected of disease be removed and segregated in order that they may be inspected by the official agency having jurisdiction and thereafter disposed of in an appropriate manner in order to prevent the spread of disease.

4.4.1.4 Poultry carcasses, poultry parts and other normally edible materials found to be unfit for human consumption should be kept in a separate room and removed at least once a day. The room should be lockable and the carcasses, parts or other materials should be held there securely. Arrangements for such retention and for disposal generally should be approved by the official agency having jurisdiction.

4.4.2 **Washing or Other Preparation.** After evisceration and inspection carcasses should be washed.

4.4.3 Preparation and Processing

4.4.3.1 Preparatory operations leading to the finished product and the packaging operations should be so timed as to permit expeditious handling of consecutive units in production under conditions which would prevent contamination, deterioration, spoilage or the development of infectious or toxigenic microorganisms.

4.4.3.2 **Temperatures, and cooling and freezing procedures.** Temperatures and

procedures which are necessary for cooling and freezing carcasses and all edible portions thereof, should be in accordance with operating practices which ensure the prompt removal of the animal heat and preserve the condition and wholesomeness of the carcass and all edible portions thereof.

4.4.3.2.1 General cooling requirements. After preparation there should be no delay in cooling the carcass to an internal body temperature of 4°C (39°F) or less. Where cutting up takes place before cooling to 4°C (39°F), it should be carried out within one hour of slaughter: immediately after cutting the temperature of the parts should be reduced to 4°C (39°F) or less. Where cutting up takes place after cooling to 4°C (39°F), the internal temperature of the carcass and parts shall not be allowed to exceed 10°C (50°F), in as far as this temperature is approved by the controlling authority which shall nevertheless ensure that necessary measures are taken to control microbiological growth.

4.4.3.2.2 Cooling giblets. Giblets should be chilled to 4°C (39°F) or lower within 2 hours from the time they are removed from the bird.

4.4.3.2.3 Refrigeration. The temperature in the storage area where non-frozen poultry carcasses, poultry parts and other edible materials are kept should be 4°C (39°F) or less. Poultry carcasses, poultry parts, and other edible material should be so stored that they are protected against deterioration and mould growth. They should be regularly inspected and dispatched in strict rotation. Cold rooms used for bulk storage should preferably be fitted with automatic defrosting equipment. Care should be taken to avoid the transference of dirt into the rooms. Non-frozen poultry carcasses, poultry parts and other edible material should be transported at 4°C (39°F) or less.

4.4.3.2.4 Preservation by freezing. Carcasses, poultry parts, and other edible material which are intended for preservation by freezing, should be frozen as soon as possible and should not be held chilled for more than 72 hours.

4.4.3.2.5 Ice-pack containers. When poultry carcasses are ice-packed in barrels or other containers, they should preferably be wrapped in plastic or other suitable material to protect against contamination. The barrels and containers should be covered and should have an adequate number of drain holes to permit the water to drain out. Wooden barrels or containers should not be used for this purpose.

4.4.4 Packaging of finished product

4.4.4.1 Materials. Packaging materials should be stored in a clean and sanitary manner and should not transmit to the product objectionable substances beyond limits acceptable to the official agency having jurisdiction and should provide appropriate protection from contamination.

4.4.4.2 Techniques. Packaging should be done under conditions that preclude the introduction of contamination into the product including separate wrapping of giblets.

4.4.5 Preservation of finished product. Methods of preservation and necessary controls should be such as to protect against contamination, infestation, or development of a public health hazard and against deterioration within limits of good commercial practice.

4.4.6 **Storage and transport of finished product.** The finished product should be stored and transported under such conditions as will preclude the contamination with or development of pathogenic or toxigenic microorganisms or infestation and protect against deterioration of the product or of the container.

4.5 **Hygiene Control Programme**

It is desirable that each plant in its own interest designate a single individual, whose duties are preferably divorced from production, to be held responsible for the cleanliness of the plant. The staff should be a permanent part of the organization and should be well trained in the use of special cleaning tools, methods of disassembling equipment for cleaning, and in the significance of contamination and the hazards involved. Critical areas, equipment and materials should be designated for specific attention as part of a permanent sanitation schedule.

4.6 **Laboratory Control Procedures**

In addition to any control by the official agency having jurisdiction, it is desirable that each plant in its own interest should have access to laboratory control of the sanitary quality of the products processed. The amount and type of such control will vary with the food product as well as the needs of management. Such control should reject all foods that are unfit for human consumption. Analytical procedures used should follow recognized or standard methods in order that the results may be readily interpreted.

5. **SECTION V - END-PRODUCT SPECIFICATIONS**

Appropriate methods should be used for sampling, analysis and determination to meet the following specifications:

- (1) To the extent possible in good manufacturing practice, the product should be free from objectionable matter. Poultry carcasses, poultry parts and other edible materials should not contain residues of hydrogen peroxide, natural or artificial colouring matter, substances used to remove colour, antibiotics, preservatives, tenderizers, or flavouring substances.
- (2) The products should comply with the requirements set forth by the Codex Alimentarius Commission Committees on Pesticide Residues and Food Additives and Contaminants contained in permitted lists or relevant Codex commodity standards.