



THAI AGRICULTURAL STANDARD

TAS 9018-2007

**GOOD MANUFACTURING PRACTICES FOR
OSTRICH ABATTOIR**

**National Bureau of Agricultural Commodity and Food Standards
Ministry of Agriculture and Cooperatives**

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National Bureau of Agricultural Commodity and Food Standards

Ministry of Agriculture and Cooperatives

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Thai Agricultural Standard (TAS) on Good Manufacturing Practices for Ostrich Abattoir is the provision for abattoir certification and for the use as the practical guidelines to the abattoir operators, which covers procedures starting from receiving live animals to the market place in order to provide safe and quality product that is fit for consumption and is acceptable domestically and internationally.

The establishment of this standard is based on the information of the following documents:

National Bureau of Agricultural Commodity and Food Standards (ACFS). A collaborative project with the Faculty of Veterinary Medicine, Kasetsart University on the study of criteria on the good manufacturing practices for cattle, buffalo, and ostrich abattoir.



**NOTIFICATION OF THE NATIONAL COMMITTEE ON
AGRICULTURAL COMMODITY AND FOOD STANDARDS
SUBJECT: THAI AGRICULTURAL COMMODITY AND FOOD STANDARD:
GOOD MANUFACTURING PRACTICE FOR OSTRICH ABATTOIR
B.E.2550 (2007)**

The resolution of the 2/2550 session of the National Committee on Agricultural Commodity and Food Standards dated on 28 August B.E.2550 (2007) endorsed the Thai Agricultural Commodity and Food Standard entitled Good Manufacturing Practice for Ostrich Abattoir to improve the quality, facilitate trade and protect consumers' health.

By virtue of the Cabinet Resolution on Appointment and Authorization of the National Committee on Agricultural Commodity and Food Standards dated 3 April B.E.2550 (2007), the notification on Thai Agricultural Commodity and Food Standard entitled Good Manufacturing Practice for Ostrich Abattoir is hereby issued as a voluntary standard. The details of which are attached herewith.

Notified on 26 September B.E.2550 (2007)

Professor Thira Sutabutra

Minister of the Ministry of Agriculture and Cooperatives
Chairperson of the National Committee on Agricultural Commodity and Food Standards

THAI AGRICULTURAL STANDARD

GOOD MANUFACTURING PRACTICES FOR OSTRICH ABATTOIR

1 SCOPE

1.1 Thai agricultural standard (TAS) on Good Manufacturing Practices for Ostrich Abattoir establishes the essential details for the transportation of live ostrich from farm to abattoir, humane slaughtering method, carcass management, good hygienic practices and transportation of carcass, meat, and products from abattoir to market for consumption.

1.2 This Thai Agricultural Standard shall be used in conjunction with the Thai Agricultural Standard on Good Manufacturing Practices for Abattoir (TAS 9004).

2 DEFINITIONS

For the purpose of this standard:

2.1 **Ostrich** means the avian in the family of Ratites, *Struthio camelus*.

2.2 **Ostrich abattoir** means any premise and building established for slaughtering of ostrich and may include ostrich meat cutting in order to produce carcasses and products for human consumption.

2.3 **Ostrich carcass** means whole body of ostrich that are humanely slaughtered for human consumption by removing off blood, feather, head, skin, tarsus and visceral organs

2.4 **Ostrich meat** means parts of ostrich carcass, especially skeletal muscle which is safe for consumption and may pass the chilling process but does not pass the preservation process.

2.5 **Products** mean other parts of ostrich which are not meat and processed but can beconsumed as food such as stomach, liver, intestines, heart, foot, tendon, neck and two joint wings.

2.6 **Ostrich skin** means the skin that is taken off ostrich after slaughtering.

2.7 **Visceral organ** means all internal organs of ostrich consisted of edible and inedible parts.

2.8 **Stunning** means methods that knockout animal and make it unconscious and insensible to pain long enough until the bleeding is completed.

2.9 **Humane slaughtering** means the slaughtering methods without torturing animals.

2.10 **Transportation for live ostrich** means moving ostrich from farm to abattoir using appropriate vehicle.

2.11 **Vehicle for live ostrich** means vehicle such as truck including trailer for transportation of ostrich.

2.12 **Cutting** means cutting animal carcass into desired parts.

2.13 **Transportation for ostrich carcass, ostrich meat, and products** means moving ostrich carcass, ostrich meat, and products using vehicle from abattoir to market place.

2.14 **Vehicle for transportation for ostrich carcass, ostrich meat, and products** means a temperature controlled vehicle used for transportation of ostrich carcass, ostrich meat, and products.

2.15 **Package** means packaging or container used for packing ostrich carcass, ostrich meat, and products.

2.16 **Official inspector** means veterinarian or person who is authorized by Director General of the Department of Livestock Development or local administration to have responsibilities to inspect diseases in animals or their meat, in accordance with the law pertaining to Controlling of Abattoir and Selling Fresh Meat.

2.17 **Competent person** means person who is authorized by Minister of the Ministry of Agriculture and Cooperatives, Director General of the Department of Livestock Development or local administration in accordance with the law pertaining to Controlling of Abattoir and Selling Fresh Meat.

2.18 **Visual inspection** means an inspection of any external physical appearances of an item, for examples meat, product, or apparent environment conditions. This is basically examined by eyes but any other sensory evaluation may be applied, such as touching and smelling; or additional tools may be applied such as magnifying lens, depending on quality factors in question. Subsequently, physical appearances and environmental conditions shall be assessed so as to see if the criteria are fully met, which may include observation, interview of operation or working procedures.

2.19 **Ante-mortem inspection** means physical examination of animals before slaughtering using any means by animal health inspector for food safety and fit for consumption.

2.20 **Post-mortem inspection** means examination of carcass, products, offal and head using any means by animal health inspector for food safety and fit for consumption.

3 REQUIREMENTS AND INSPECTION METHODS

Requirements and inspection methods for Good Manufacturing Practices for Ostrich shall be as Table 1 and in TAS 9004, Section 3 Procedures, Requirement and Inspection Methods.

Table 1 Requirements and Inspection Methods

Item	Requirements	Inspection methods
1. Transportation of live ostrich	1.1 Vehicle shall be sturdy with space appropriate for the size and number of ostrich. 1.2 Transport shall be in accordance with the relevant laws enforced by the Department of Livestock Development. 1.3 Ostrich shall be prevented from injury or stress during transportation. 1.4 Unhealthy or sick ostrich shall not be transport together with healthy ones. 1.5 Vehicle shall be cleaned and disinfected every time after used.	Visual inspection and check relevant documents
2. Receiving live ostrich	2.1 Ostrich shall arrive at abattoir for at least 4 hours prior to slaughtering. 2.2 Ostrich shall not be starved for longer than 12 consecutive hours. 2.3 Ostrich shall be examined before getting into the lairage. 2.4 Sick or suspected sick ostrich shall be separated in designated pen and reported to official inspector. 2.5 Severely injured ostrich shall be immediately humanely slaughter by separating from normal production line.	Visual inspection and review the records
3. Ostrich lairage and examination of animals before slaughtering	3.1 The size of lairage shall be appropriated with the number of ostrich which shall not be less than 1.5 m²/head.	Visual inspection and review the records

Item	Requirements	Inspection methods
	3.2 Construction material shall be sturdy, smooth, no sharp or breakable part, not cause injury to ostrich and non-slippery floor. 3.3 Water supply for ostrich shall be sufficient. 3.4 Ante-mortem inspection shall be performed. 3.5 There shall be a walk way from lairage to the stunning room. 3.6 Lairage shall be cleaned and disinfected after slaughtering all of ostriches and shall have adequate water supply to clean the area.	
4. Slaughter	4.1 Humanely slaughtering methods shall be used. 4.2 ostrich shall be stunned before slaughtering or use the methods following ritual slaughter or religious provisions. 4.3 In case of using railing system, hock joint of ostrich shall be hanged on the hoist immediately after stunning. 4.4 Ostrich shall be bled completely for no less than 3 minutes. 4.5 Knife or equipment for bleeding shall be cleaned and disinfected every time before or after use. 4.6 The operation area shall be cleaned periodically during and after slaughtering.	Visual inspection
5. Defeathering	Feather of ostrich shall be completely removed and shall be protected from feather dispersal.	Visual inspection
6. Dehiding/skinning	6.1 Dehiding/skinning shall be performed immediately after feather removal.	Visual inspection

Item	Requirements	Inspection methods
	6.2 Dehiding/skinning shall be done by avoiding contact of the carcass to the floor or contamination from hide to carcass. 6.3 In case of placing ostrich carcass on table, the table shall be cleaned. 6.4 Hide shall be placed in a container for taking away from meat operation area.	
7. Removal of head, shank and wing	Head, shank and wing shall be cut and placed in the container to avoid contacting with the floor.	Visual inspection
8. Evisceration	8.1 All viscera shall be completely removed. 8.2 In case of visceral rupture, contaminated carcass shall be immediately cleaned or removed but water use is prohibited. 8.3 Post-mortem inspection shall be performed.	Visual inspection and review records
9. Ostrich carcass washing	Ostrich carcass shall be washed after the process of defeathering, dehiding and evisceration.	Visual inspection
10. Chilling	10.1 Carcass shall be cooled down to not more than 7 °C at the center of the carcass or meat before sale or during storing before sale. 10.2 Temperature of carcass shall be recorded. 10.3 Chilling room for keeping carcass or meat shall be free from condensed water drop to contact the carcass.	Visual inspection
11. Cutting	11.1 All cutting utensils shall be cleaned. 11.2 Cutting area shall be separated from other production line and has strict control of entry and exist of workers	Visual inspection

Item	Requirements	Inspection methods
12. Packaging	12.1 Container shall be strong and safe for containing the food and durable for transportation 12.2 Packaging shall have legible label with information according to Appendix A.12.4 12.3 Area for packaging shall be separated from other areas.	Visual inspection
13. Transportation ostrich carcass, meat and products	13.1 Vehicle for transport and container for carcass shall have temperature controlling system to give core temperature of the meat not more than 7 °C at all time and shall prevent cross contamination. 13.2 Do not use the same vehicle transporting live ostrich or other animals for transporting ostrich carcass, ostrich meat and products. 13.3 Vehicle or container shall be cleaned before and after transportation.	Visual inspection, review records and temperature monitoring
14. Waste water treatment	Availability of waste water treatment system for improving the quality of the waste water in accordance with the relevant laws and regulations.	Visual inspection and review records
15. Principle of general hygiene	15.1 Hygienic practices for production as shown in Appendix B.1 15.2 Personal hygiene as shown in Appendix B.2	Visual inspection and review records
16. Slaughtering protocol	They shall be followed as Appendix C and shall prevent cross contamination.	Monitoring the slaughtering protocol

4 GUIDANCES ON THE GOOD MANUFACTURING PRACTICES FOR OSTRICH ABATTOIR

Recommendations for good manufacturing practices for ostrich abattoir aim to provide operator to use as guidance in order to produce ostrich carcass, ostrich meat and products that are safe and fit for consumption. The details of such recommendations are explained in Appendix A, B, C and D, respectively.

APPENDIX A
GUIDANCE ON THE GOOD MANUFACTURING PRACTICES FOR
OSTRICH ABATTOIR
(Section 3 and Section 4)

A.1 TRANSPORTATION OF LIVE OSTRICH

A.1.1 Vehicle for transportation of live ostrich

A.1.1.1 Vehicle shall be sturdy and appropriate for transportation of live ostrich.

A.1.1.2 Vehicle shall have adequate ventilation, non-slippery floor, and preventive measures against water and waste drainage during the transportation.

A.1.1.3 Side wall of the vehicle shall be made of smooth surface material and have height equal to or higher than the height of ostrich, but shall not be less than 150 cm.

A.1.1.4 Floor and side wall of vehicle shall not have slits or holes that any part of the ostrich can protrude out of the vehicle.

A.1.1.5 Vehicle shall have enough space for each ostrich to stand during transportation, such that it shall not be too crowded and not have too much space that animal can turn around. The space for adult ostrich shall not be less than 1 m²/head

A.1.2 Method of transportation

A.1.2.1 Transportation shall be in accordance with the regulations enforced by the Department of Livestock Development.

A.1.2.2 There shall be a loading ramp for ostrich onto the vehicle where animal welfare shall be taken into account.

A.1.2.3 During transport, any risk of injury, suffering or excitement to ostrich shall be avoided, such as driving smoothly and no sudden start and stop.

A.1.2.4 Unhealthy or sick ostriches shall not be transported together with healthy ones.

A.1.2.5 Ostrich shall be transported during dawn or at night to avoid heat. In case of very hot weather, there shall be methods to reduce the heat. In case of sunlight or raining, there shall be shading to protect animals.

A.1.2.6 During transport, ostrich shall be monitored periodically. If any harm may occur to animals, the transporter shall respond immediately.

A.1.2.7 Vehicle shall be cleaned and disinfected after unloading each time.

A.2 RECEIVING LIVE OSTRICH

A.2.1 Ostrich shall arrive at abattoir at least 4 hours prior to slaughtering for resting.

A.2.2 Ostrich shall be starved for at least 4 hours but not more than 12 hours.

A.2.3 When ostriches arrive at abattoir, the authority shall check the legal document.

A.2.4 There shall be a walkway connecting from the vehicle to lairage area. Animal welfare shall be taken into account.

A.2.5 Sick or suspected sick animal shall be separated and quarantined in the sick animal pen and the authority shall be informed.

A.2.6 If any ostrich severely injured, it shall be humanely slaughtered immediately to avoid from suffering and separated from the normal production line.

A.3 LAIRAGE/RESTING PEN

A.3.1 Lairage shall have shading for protecting animals from sunlight and rain, good ventilation, suitable temperature and water repellent wall such as smooth and rustless iron pipe wall with 150 cm height, and non-slippery and slightly tilted floor.

A.3.2 Lairage for sick ostrich shall be separated from lairage for healthy ones and water drainage system shall not pass through the lairage and production line.

A.3.3 There shall be sufficient water supply for ostrich at all time and the density of lairage shall not be less than 2 m²/head.

A.3.4 Ante-mortem inspection shall be performed not to exceed 24 hours prior to slaughtering by inspect health and any abnormalities, such as respiration, movement, weighing each animal and the record of the ante-mortem inspection shall be kept by official inspector. If slaughtering cannot be done as scheduled, such animals shall be supplied with feed and water. In this case, ante-mortem inspection shall be repeated before slaughtering.

A.3.5 There shall be a walkway connecting from lairage to slaughtering room which shall be narrow to prevent ostrich from turning around.

A.3.6 Keep order of slaughtering.

A.3.7 Lairage shall be cleaned and disinfected after each slaughtering.

A.4 SLAUGHTER

A.4.1 Stunning

A.4.1.1 Ostrich shall be brought to the stunning area which have door or closing equipment for prevention of ostrich back off from the stunning area.

A.4.1.2 Check stunning equipment to ensure that they work properly and safely before use every time.

A.4.1.3 Ostrich shall be under good control and shall not be suffered before stunning to prevent kicking during stunning period. Operator shall be trained for prevention of animal suffering.

A.4.1.4 Ostrich shall be immediately stunned by well trained operator.

A.4.1.5 Electric stunning or other methods permitted by competent authority shall be used .

A.4.1.6 For electric stunning, equipment shall be specifically designed with electrical gauge. Ostrich shall be stunned by clamping at areas of both ears but eyes shall not be contacted. The electrical shot shall not cause any pain.

A.4.1.7 Ostrich may be clamped at both legs before hanging on the rail to prevent accident to ostrich or operator from ostrich's kicking during unconscious stage.

A.4.1.8 Immediately hang ostrich on the rail after stunning by using chain or other water repellent equipment at both metatarsal joints.

A.4.1.9 Ostrich shall be unconscious long enough for the completion of bleeding.

A.4.2 Bleeding

A.4.2.1 Bleeding position shall be done close and underneath the mandible at the neck and carotid artery and jugular vein shall be completely cut or using knife pierce to cut the main arteries and veins that direct to the heart.

A.4.2.2 Bleeding shall be done immediately after ostrich is stunned and do not defeather or cut before complete bleeding.

A.4.2.3 Ostrich shall be bled for at least 3 minutes for complete bleeding.

A.4.2.4 Knife or equipment for bleeding shall be cleaned and disinfected, such as dipping in hot water with temperature not less than 82°C, before being used with individual animal and after the whole operation.

A.4.2.5 Equipment, tools and the bleeding area shall be cleaned periodically. A complete cleaning shall be done after each operation.

A.5 DEFEATHERING

A.5.1 Feather shall be removed immediately after complete bleeding and shall be protected from feather dispersal.

A.5.2 Feather shall be completely removed and placed into designated container.

A.5.3 Slaughtered and defeathered ostrich shall be cleaned by flushing with water.

A.5.4 Equipments and defeathering area shall be cleaned periodically and thoroughly washed after work.

A.6 DEHIDING/SKINNING

A.6.1 Dehiding shall be started immediately after complete defeathering by using knife opening at the midline of the thorax, belly and back as one piece.

A.6.2 Prevent any contamination from skin to meat .

A.6.3 Container for dehided skin shall be provided in order to take the skin out of the meat operation area.

A.6.4 All equipment, utensils and working area shall be periodically cleaned and thoroughly washed after work.

A.7 REMOVAL OF HEAD, SHANK AND WING

A.7.1 Dehided ostrich is removed from the hanging rail and placed on a clean table.

A.7.2 Head is removed by cutting at the first cervical vertebrae.

A.7.3 Shank is cut at the tarsal joint.

A.7.4 Wings are cut at the elbow joint.

A.7.5 Using chain or other water repellent equipment hanging at the upper wing for at least 30 cm from the floor.

A.7.6 Equipment using for head, shank and wings removal shall be well maintained and work properly all the times.

A.8 EVISCERATION

A.8.1 Use knife or saw to open the thorax by cutting sternum and open the belly wide enough for bringing visceral organ out.

A.8.2 Esophagus and large intestines are tied at the opening end to prevent the leaking of content in the stomach and intestines.

A.8.3 Visceral organs except air sac are carefully brought out without causing rupture of visceral organs.

A.8.4 In case of visceral rupture, do not use water to wash but allow cutting the contaminated part or use other means to prevent cross contamination to other parts of the carcass.

A.8.5 Visceral organ shall be placed beside carcass or using marker indicate matching of visceral organ and carcass for the convenient of official inspector.

A.8.6 Official inspector shall examine and make a record of ostrich meat and products thereof. Culling off the carcass and products shall be authorised by the official inspector.

A.9 CARCASS WASHING

After defeathering, dehiding, and evisceration, the whole carcass shall be washed out all visible dirt. Subsequently, the post-mortem inspection mark shall be given on the carcass.

A.10 CHILLING

A.10.1 After cleaning, ostrich carcass shall be transferred immediately to the chilling room to lower the temperature or may be cut into parts before bringing to chilling process.

A.10.2 Chilling the carcass, the core temperature of the thigh muscle shall be set not to exceed 7 °C within 24 hours. .

A.10.3 The carcass shall be arranged under the principle of first in-first out.

A.10.4 The carcass shall be arranged with space to allow sufficient flow of cool air.

A.10.5 The carcass storage room shall be provided with dehumidifying system to prevent condensation.

A.10.6 Chilling room is clean and shall be cleaned regularly, no pieces of meat and blood on the floor, as well as no water accumulation.

A.10.7 Operator shall examine carcass or ostrich meat stored including monitoring and recording of both carcass or ostrich meat and room temperatures.

A.10.8 Strictly control worker in and out the chilling room and prohibit unauthorized person to the chilling room.

A.10.9 There shall be opening mechanism and alarm set inside the chilling room.

A.11 CUTTING

A.11.1 Cutting ostrich carcass shall be done quickly to keep the core temperature not exceeding 7 °C in order to prevent microorganism growth.

A.11.2 In case of using conveyor, belt and container shall be clean without blood. If there is blood, the container shall be cleaned with clean water and wiped out immediately with wiper blade. The use of sponge is strictly prohibited.

A.11.3 During cutting, there shall not be over piling up of meat on the conveyor belt. The cut meat shall be packed in sequence.

A.11.4 Each operator shall wash their hands with soap and disinfectant regularly.

A.11.5 Entry and exit of the cutting room shall be strictly controlled, in particular those are not directly involved in the operation shall be strictly prohibited.

A.11.6 Knife and utensils shall be cleaned and disinfected.

A.12 PACKAGING

A.12.1 Packing shall be done quickly at the controlled core temperature of the carcass, beef and meat and products thereof not more than 7 °C at all times until transport.

A.12.2 Container shall be cleaned. The plastic container shall meet the standard requirements of the Food Act.

A.12.3 Container shall be durable for transport.

A.12.4 There shall be label on the package for every unit with legible information showing details as follows:

- (1) Type of carcass, meat or products of ostrich
- (2) Net weight by gram or kilogram
- (3) Date of production (date of slaughtering) and date of best before
- (4) Storage instruction
- (5) Name and address of producer or distributor, or trade mark

A.12.5 In case of packaging made of material that cannot be cleaned, the packaging room shall be separated from other rooms with the design to prevent dust, insect and rat.

A.13 TRANSPORTATION FOR OSTRICH CARCASS, MEAT, AND PRODUCTS THEREOF

A.13.1 Vehicle for transport shall be able to control the temperature with the core temperature of the meat not more than 7°C at all times and prevent contamination of the carcass, ostrich meat and products thereof.

A.13.2 Moving of carcass, ostrich meat, and products thereof shall be carefully done without contacting wall and floor of the vehicle. If covering material is provided for ostrich meat, it shall be protected from tearing.

A.13.3 Vehicle door or temperature controlled container of the carcass, ostrich meat, and products thereof shall be tightly closed, if necessary it shall be locked or tightened with wire or other materials with a sign of not open during the transport.

A.13.4 Vehicle for transport of live ostrich shall not be used for carcass, ostrich meat, and products thereof.

A.13.5 Vehicle or carcass container shall be cleaned and disinfected before and after transportation.

A.14 WASTE WATER TREATMENT

There shall be a waste water treatment system for improving the quality of waste water in accordance with the relevant laws.

APPENDIX B
GENERAL HYGIENE
(Table 1, Item 15 and Section 4)

B.1 HYGIENIC PROVISIONS

B.1.1 Production process shall be controlled in accordance with the procedures of the good manufacturing practices for ostrich abattoir in Appendix C.

B.1.2 Cleanliness before production shall be inspected and recorded.

B.1.3 Efficient prevention and eradication of insect and animal disease carriers shall be done both inside and outside the production building.

B.1.4 The production area, equipment, machines and tools shall be maintained and cleaned before and after operation by appropriate and efficient methods, especially food contacting surface.

B.1.5 Adequate hand washing facilities.

B.1.6 Cleaning room for container and equipment shall have adequate space as appropriate proportion with container and equipment to be cleaned and shall be located at specific area of the building.

B.1.7 Washing tub for cleaning of container and equipment shall have appropriate size.

B.1.8 Storage area of materials, containers, equipment, tools or chemicals shall be provided and not cause or be the source of contamination.

B.1.9 Storage area for materials and equipments such as packaging materials, worker clothes, detergent, and disinfectant shall be separated from each other and be locked.

B.1.10 Chemicals shall be kept separately from the production area and have clear indication.

B.1.11 Trash bin with lid shall be placed at certain place. Trash shall be discarded after each work shift and it shall not be done during production because it may cause contamination.

B.1.12 Cleaning the building including installed equipment before production, resting period and after production shall be done. Cleaning after the last production shall be properly done and no small pieces of meat left over the night. Disinfection shall be done after cleaning.

B.1.13 Water and ice contact with carcass, meat, as well as worker or equipment shall be clean water and meet the standard issued by the Ministry of Public Health.

B.2 PERSONAL HYGIENE

B.2.1 Worker shall have annual health examination.

B.2.2 Person known to the fact that is sick, suspected sick or suspected carrier of foodborne contagious diseases shall not be allowed in the production area. Such disease and clinical signs are as follows:

- (1) Jaundice or tuberculosis
- (2) Diarrhea, vomit or fever
- (3) Skin infection
- (4) Eye, ear throat or nose infection

B.2.3 Person who has wound or injury that is given permission to work shall have wound covered by waterproof gauze or plaster.

B.2.4 Nail shall be cut as short as possible and washing hand with soap and disinfectant every time before getting into the production area and after using restroom.

B.2.5 During work, worker shall wear protective clothing, apron, cap , and mask including cleaned and disinfected boots.

B.2.6 Personal belongings and food shall not be brought and kept in the production room. They shall be separately kept in the allocated place.

B.2.7 Protective clothing, apron, cap, mask, boots, tools and equipment shall be cleaned after work and kept in the allocated place.

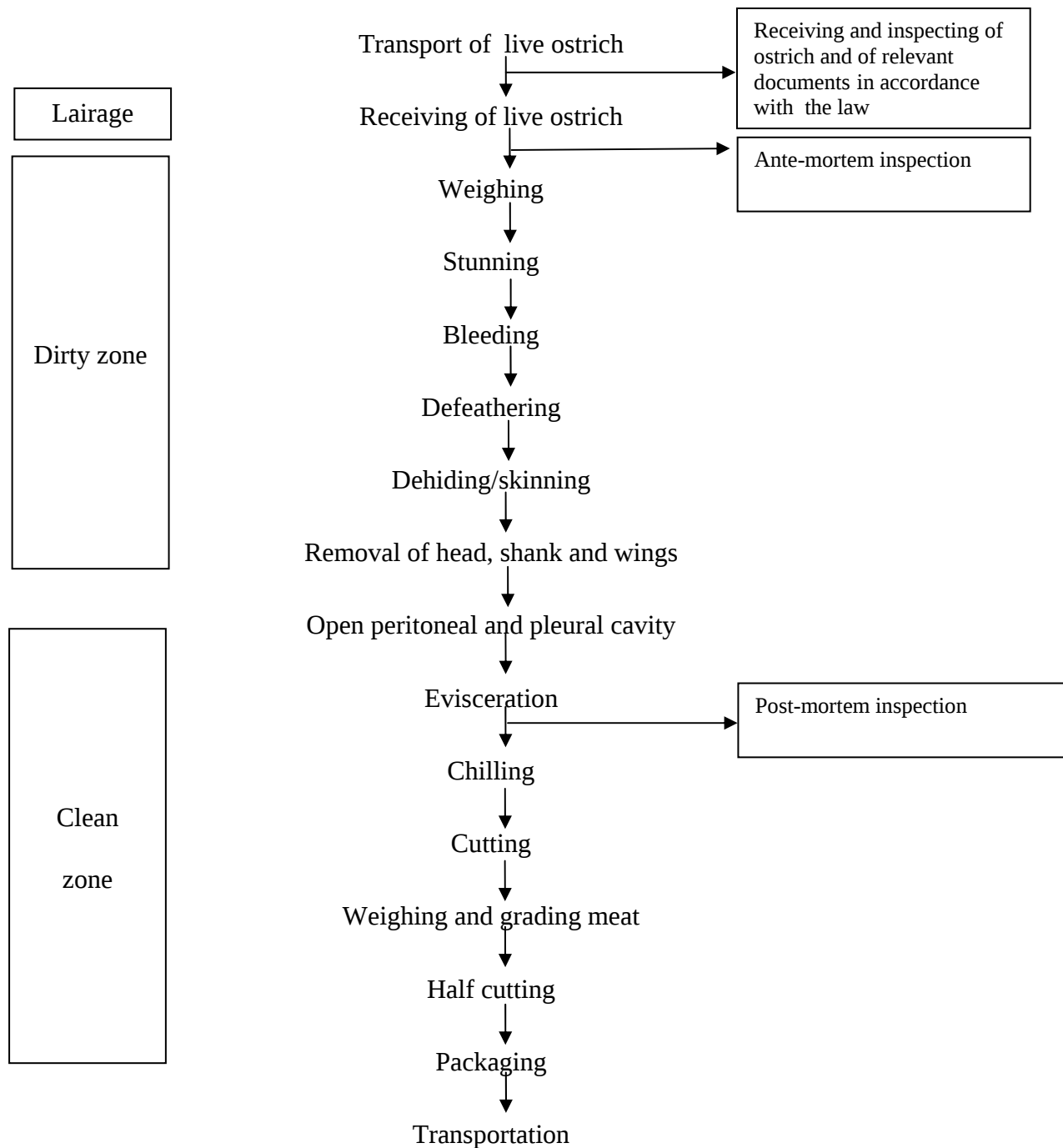
B.2.8 Assigned worker for each room shall regularly stay in such room and they shall not be allowed to move to other rooms to prevent cross contamination between clean and dirty production area unless permission is given .

B.2.9 Smoking, eating or chewing including inappropriate behavior shall be strictly prohibited in order to prevent cross contamination.

APPENDIX C

DIAGRAM FOR THE PROCEDURES OF GOOD MANUFACTURING PRACTICES FOR OSTRICH ABATTOIR

(Table 1, Item 16, Section 4)



Remarks: After defeathering, dehiding, and evisceration, carcass shall be washed with clean water

APPENDIX D**ESSENTIAL EQUIPMENTS AND TOOLS FOR OSTRICH ABBATIOR**

(Section 4)

Essential equipments and tools for ostrich abattoir are as follows:

- (1) Stunning machine
- (2) Equipment for bleeding and for opening pleural and peritoneal cavity
- (3) Knife
- (4) Knife sharpener
- (5) Dehiding equipment
- (6) Disinfectant equipment
- (7) Visceral container
- (8) Equipment for cutting bone such as hand saw or electric saw
- (9) Rail and hook for carcass, and products thereof
- (10) Litter or table
- (11) Equipment for moving of ostrich carcass such as litter or railing system
- (12) Chilling equipment
- (13) Balance for live ostrich and for carcass and products thereof
- (14) Protective clothes, apron, cap, mask and boots
- (15) Cleaning equipment
- (16) Recording and marking equipment

APPENDIX E**UNITS**

The units and symbols used in this standard and the units recognized by the International System of Units (*le Système International d' Unités*) or SI are as follows:

Measurement	Units	Symbol
Mass	gram	g
	kilogram	kg
Length	centimeter	cm
	meter	m
Area	Square meter	m ²
Temperature	degree Celsius	°C