

GB

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB 12694-2016

**National food safety standard – Hygienic specifications for
slaughtering and processing of livestock and poultry**

Issued on: December 23, 2016

Implemented on: December 23, 2017

Issued by: National Health and Family Planning Commission of the People's Republic
of China;

China Food and Drug Administration

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Foreword

This Standard replaces GB 12694-1990, *Hygienic specifications of meat packing plant*, GB/T 20094-2006, *Code of hygienic practice for abattoir and meat processing establishment*, and GB/T 22289-2008, *Requirement for processing chilled pork*.

Compared with the replaced standards, the main changes of this Standard are as follows:

- it changes the standard name into “*National food safety standard – Hygienic specifications for slaughtering and processing of livestock and poultry*”;
- it modifies the application scope;
- it integrates and modifies the standard structure;
- it integrates and modifies part of the terms and definitions;
- it integrates, modifies and supplements the requirements for site selection and plant environment, plant and workshop, and facilities and equipment, and the management requirements for hygienic control and operation;
- it adds the requirements for product tracing and recalling management; and
- it adds the requirements for record and file management.

National food safety standard – Hygienic specifications for slaughtering and processing of livestock and poultry

1 Scope

This Standard specifies the basic requirements for the sites, facilities and equipment and personnel during acceptance, slaughter, cutting, packaging, storage and transportation of livestock and poultry and the management guidelines for hygienic control and operation during the slaughtering and processing of livestock and poultry.

This Standard applies enterprises slaughtering and processing livestock and poultry above the designed size.

2 Terms and definitions

The terms and definitions defined in GB 14881-2013 apply to this Standard.

2.1

The enterprises slaughtering and processing livestock and poultry above the designed size

the factories with an actual annual slaughtering capacity of more than 20,000 pigs, 3,000 bovines, 30,000 sheep, 2 million chickens and 1 million ducks and geese.

2.2

Livestock and poultry

livestock and poultry for human consumption

2.3

Meat

all parts of livestock and poultry which are for human consumption or which are determined to be safe and suitable for human consumption, including carcasses, cut meat and edible by-products

2.4

Carcasses

The animal body with body - bled, hair removed, skin peeled, or head and hoof (or claw)

cut, internal organs removed.

2.5

Edible By-Products

Including organs, fat, blood, bones, head, hoof (or claw), tail, etc.

2.6

Inedible By-Products

Including the skin, hair, horns and other parts of livestock and poultry.

2.7

Ante-Mortem Inspection

Before the slaughter of livestock and poultry, comprehensively determine whether livestock and poultry are healthy and applicable for human consumption, and the check shall be carried out to livestock and poultry groups and individuals.

2.8

Post-mortem Inspection

After the slaughter of livestock and poultry, determine whether livestock and poultry are healthy and applicable for human consumption, and check their heads, carcasses, viscera and other parts of livestock and poultry.

2.9

Non-Clean Area

The area for slaughter, stunning, bleeding, scalding, hair removing and peeling.

2.10

Clean Area

The area for carcass processing, dressing, cooling, segmenting, temporarily storing, packaging and other processing.

3 Site Selection and Plant Environment

3.1

General requirement

It shall comply with GB 14881-2013.3.

3.2

Site Selection

3.2.1 Health protection distance shall be in accordance with the requirements of GB 18078.1 and the requirements of animal epidemic prevention.

3.2.2 The plant shall have good environmental sanitary conditions around the site. The plant shall be far from the polluted water body and shall avoid the industrial enterprises emitting harmful gas, smoke, dust and other pollution sources or other areas and places producing pollution sources.

3.2.3 The plant site must have water sources and power supply meeting the requirements, shall be determined combined with the process requirements in the light of the local conditions, and shall comply with the requirements for setting planning of the slaughtering enterprises.

3.3

Plant Environment

3.3.1 The main road of the plant shall be hardened (such as with concrete or asphalt pavement, etc.), the pavement shall be smooth and easy to wash without water accumulation.

3.3.2 The plant shall be designed with temporary waste and garbage storing or disposing facilities, the waste shall be promptly removed or disposed, avoiding the pollution to the factory environment. The waste equipment and other debris shall not be piled up in the plant.

3.3.3 The waste storage and disposal shall be in line with the national requirements for environmental protection.

3.3.4 The feed of animals unrelated to slaughtering and processing is strictly prohibited in the plant area.

4 Factory and Workshops

4.1

Design and Layout

4.1.1 The plant area shall be divided into production area and non-production area. The shipment of live poultry and waste and the delivery of finished products shall not share one gate, and shall not share one channel in the field.

4.1.2 The layout and facilities of the workshops in the production area shall meet the production process flow and health requirements. The clean area and non-clean area in the workshop shall be separated strictly.

4.1.3 The construction area the construction facilities of the slaughter and segmentation workshop shall be adapted to the scale of production. All processing areas in the workshop shall be divided clearly according to the production process flow, and the flow of people and the flow of equipment and products shall not be interfered with each other, and shall comply with the requirements of process, health, quarantine and inspection.

4.1.4 The slaughter enterprises shall set slaughter waiting circle (area), isolation circle, urgent slaughter room, laboratory, official veterinary laboratory, chemicals storage room and biosafety disposal room, the slaughter enterprise can entrust the qualified professional biosafety disposal site with the implementation of biosafety disposal. The plant area of the slaughter enterprise shall be provided with special areas for cleaning and disinfection of the transport vehicles and tools of livestock, poultry and products.

4.1.5 The special edible and non-edible by-product processing and handling rooms shall be separately established. The area of the edible by-product processing workshop shall be suitable for the slaughter and processing capacity, the facilities and equipment shall be in accordance with the hygienic requirements, and the process layout shall be made to have the different processing and handling areas separated, avoiding cross contamination.

4.2

Internal Structure and Materials of Building

It shall be in accordance with the relevant regulations in 4.2 of GB 14881-2013.

4.3

Workshop Temperature Control

4.3.1 The workshop temperature shall be controlled in the specified range according to the requirements of product process control. Among them, the temperature of the pre-cooling facility shall be controlled at 0°C -4°C, the temperature of the segmentation workshop shall be controlled below 12°C, and the temperature of the freezing room shall be controlled below -28°C. The temperature of the refrigerated storage is controlled below -18 degrees Celsius.

4.3.2 The process and site having temperature requirements shall be fitted with a temperature display device to monitor the temperature and if necessary, with a humidity meter; the temperature meter and humidity meter shall be calibrated regularly.

5 Facilities and Equipment

5.1

Water Supply Requirements

5.1.1 The production water supply for slaughtering and cutting workshops shall be as it is

specified in GB 5749; the enterprises shall control the quality of water supply.

5.1.2 The slaughtering and cutting workshops shall provide cold and hot water pipes at water using locations. The temperature of hot water used for washing is preferably not lower than 40°C and the temperature of hot water for sterilization is not lower than 82°C.

5.1.3 The emergency slaughtering workshops and cutting workshops shall be provided with cold and hot water pipes.

5.1.4 The processing water supply pipes shall be provided with anti-siphon or anti-backflow devices; the water outlets of water supply network shall not be inserted directly into the dirty water.

5.3.1.4 The structure, facilities and internal materials of the shower room and toilet shall be easy to keep clean and disinfect. The toilet shall be provided with exhaust and ventilation facilities and anti-fly and pest control facilities to maintain it clean and sanitary. The toilet shall not be directly connected with the slaughter, processing, packaging or storage or other area. The door of the bathroom shall be automatically shut down, the door and window shall not open directly toward the workshop.

5.2

Water drainage requirements

5.2.1 The floor of the slaughtering and cutting workshops shall not accumulate water; the drainage water flows from a clean area to a non-clean area.

5.2.2 The outlet of open ditches shall be provided with gratings made of corrosion resistant materials, and rat-proof and deodorization devices.

5.2.3 The industrial wastewater shall be treated collectively; the discharge shall be as it is specified in relevant national regulations.

5.3

Cleaning and sterilization facilities

5.3.1 Cleaning and sterilization facilities for changing rooms and toilets

5.3.1.1 Hand washing facilities of the appropriate temperature as well as sterilization and hand drying facilities which match with the production capacity shall be provided for the appropriate location at the entrances of workshops and toilets and inside the workshops. The hand washing facilities shall be provided with non-manual switches; the drainage water shall be connected directly to the sewer pipes.

5.3.1.2 The changing rooms, toilets and shower rooms which match with the production capacity and connected with workshops shall be provided; and their facilities and layouts

shall not cause potential pollution risks to products.

5.3.1.3 The areas with different cleaning degree requirements shall be provided with independent changing rooms; the private clothes and work clothes shall be stored separately.

5.3.1.4 The structure, facilities and internal materials of the shower room and toilet shall be easy to keep clean and disinfected. The toilet shall be provided with exhaust and ventilation facilities and anti-fly and pest control facilities to maintain it clean and sanitary. The toilet shall not be directly connected with the slaughter, processing, packaging or storage or other area. The door of the bathroom shall be automatically shut down, the door and window shall not open directly towards the workshop.

5.3.2 Plant and Workshop Cleaning and Disinfection Facilities

5.3.2.1 The plant area shall be designed with a disinfection pool the width of which is in the same with the gate for the vehicles to transport livestock and poultry, 4m long and 0.3m deep; the production workshop shall be provided, as required, with shoe change (putting on shoe sleeve) facilities or work boot disinfection facilities at the entrance and at the places inside as required. The size of the facilities shall meet the requirements for disinfection.

5.3.2.2 The ill livestock and poultry isolation room and biosafety disposal workshop shall be provided with car wheels, shoes and boots at the entrances of disinfection facilities.

5.4

Equipment and Apparatus

5.4.1 The production equipment adaptable to the production capacity shall be equipped with, and shall be arranged in order, according to the process flow to avoid cross contamination.

5.4.2 The equipment, utensils and containers in contact with meat shall be made from materials that shall be non-toxic, odourless, non-absorbent and corrosion-resistant, not easy to deform and fall off, shall be repeatedly cleaned and disinfected, not react with foods, detergents and disinfectants under normal production conditions, and shall be kept intact; the use of bamboo or wood utensils and containers is prohibited.

5.4.3 The processing equipment shall be installed in the place easy to maintain, clean and disinfect, preventing cross contamination during the processing.

5.4.4 The container for waste and the container for meat can't be mixed in use. The waste container shall be made of metal or other non-permeable materials. The containers for different purposes shall have clear signs or different colours.

5.4.5 Some utensils and equipment used in livestock slaughter and inspection processes, such as slaughtering, dehorning equipment, head inspection tool, chest opening and slitting tools and saws, trays for synchronous inspecting and containing viscera and others, shall be cleaned and disinfected with hot water of higher than 82°C or by using the equivalent disinfection method.

5.4.6 The workshop facilities and equipment shall be cleaned and disinfected according to the production needs. The utensils, operating table and processing surface in contact with food shall be cleaned and disinfected regularly in production process, and the appropriate measures shall be taken to prevent the pollution caused to the products when cleaning and disinfecting.

5.5

Ventilation facilities

5.5.1 The workshops shall be provided with good ventilation devices to discharge polluted air and water vapour. The air flows in the direction from the clean area to the non-clean area.

5.5.2 The ventilation openings shall be provided with screens or protective covers made of corrosion resistant materials to prevent insect pests from entering. The screens and covers shall be convenient for assembling and disassembling, cleaning, repairing or replacement.

5.6

Illumination facilities

5.6.1 The workshops shall be provided with appropriate natural light or artificial illumination. The lustrousness of illumination lamps shall not change the natural colours of the processed articles; the luminance shall meet the requirements for the work of the quarantine and inspection personnel and the production operators.

5.6.2 The lamps installed above meat exposed to the air shall be of safe type illumination facilities or be provided with protection measures, to prevent pollution to meat caused by broken lamps.

5.7

Storage facilities

5.7.1 The temperature of storage warehouses shall meet the specific requirements of the products to be stored.

5.7.2 The products shall be kept clean, tidy and well ventilated in the storage warehouse. There shall be mould, rat and insect prevention measures.

5.7.3 The temperature shall be monitored for the refrigeration warehouse, which shall be

equipped with a humidometer if necessary; the thermometers and humidometers shall be calibrated at fixed times.

5.8

Waste storage and their treatment facilities

5.8.1 Temporal waste storage facilities shall be provided at appropriate locations far away from the workshops and the facilities shall be made of materials convenient for cleaning and sterilization; their structure shall be dense to prevent insect pests from entering and prevent waste from polluting the plant areas and roads or infect the operators. The facilities and containers for waste in the workshops shall be marked clearly and conspicuously.

5.8.2 The configuration of the biosafety disposal equipment shall be in accordance with the relevant requirements, and meet the needs for the biosafety disposal.

6 Inspection and Quarantine

6.1

Basic Requirements

6.1.1 The enterprise shall have the inspection section adaptable to the production capacity. It shall have the inspection methods and relevant standards documentation required for inspection, and establish a complete internal management system, to ensure the accuracy of the test results; the original records of the tests shall be provided. The laboratory shall be equipped with the facilities and equipment satisfying inspection needs. Where the social inspection agency is entrusted with inspection, this inspection agency shall have the corresponding qualifications. The entrusted inspection shall satisfy the needs of the daily inspection work of the enterprise.

6.1.2 The measuring instruments, facilities and equipment required for operation of the health quality system for product processing, inspection and maintenance shall be examined for measurement in accordance with the regulations, and shall be calibrated before use.

6.2 Ante-Mortem Inspection

6.2.1 Livestock and poultry to be slaughtered shall be attached with animal quarantine certificate and livestock and poultry identification meeting the requirements.

6.2.2 The ante-mortem inspection shall be conducted for livestock and poultry to be slaughtered according to the relevant national regulations, procedures and standards. Livestock and poultry shall be conducted a clinical health check and visually inspected according to the relevant procedures, such as behaviour, posture, physical conditions,

body appearance, excretion and smell of livestock and poultry, etc. Livestock and poultry that have abnormal occurrence shall be isolated for observation, measuring body temperature and for further examination. If necessary, the laboratory testing shall be carried out as required.

6.2.3 Livestock and poultry that are determined as not suitable to be normally slaughtered, shall be treated in accordance with the relevant provisions.

6.2.4 Livestock and poultry shall stop feeding and rest before slaughter.

6.2.5 The information on the ante-mortem inspection shall be a feedback timely to the feeding field and the post-mortem inspection personnel, and records shall be well kept.

6.3

Post-mortem Inspection

6.3.1 The inspection of the head, hoof (claw), carcass and viscera of livestock and poultry shall be performed in accordance with relevant national regulations, procedures and standards.

6.3.2 The workshop for livestock slaughter shall be equipped with special retention tracks for suspicious diseased carcasses at proper location for further inspection and judgement of suspicious diseased carcasses. An independent low-temperature space or area shall be set up for temporary storage of suspicious diseased carcasses or tissues.

6.3.3 A sufficient space shall be preserved in the workshop to facilitate the implementation of the post-mortem inspection.

6.3.4 The trichina laboratory with inspection facilities shall be provided in the pig slaughter room.

6.3.5 Where the laboratory testing is required according to the state regulations, the laboratory sampling tests shall be carried out.

6.3.6 The information of ante-mortem and post-mortem inspections shall be used to determine the results of the inspection and quarantine.

6.3.7 What is determined as waste, shall be identified with clear signs and disposed, to prevent confusion with other meat, resulting in cross contamination.

6.3.8 In order to ensure a full completion of the post-mortem inspection or other emergencies, the formal veterinarian has the right to slow down or stop slaughtering and processing.

6.4

Biosafety Disposal

6.4.1 Livestock and poultry and their tissues, which are found to have infectious diseases, parasitic diseases, toxic diseases or harmful substance residue in inspection and quarantine, shall be transported timely with special vehicles in special closed and watertight containers, and shall be subjected to biosafety disposal under the formal veterinary supervision. Those with suspected diseases shall be tested in accordance with the relevant quarantine procedures, and those confirmed with diseases shall be subjected to biosafety disposal.

6.4.2 Livestock and poultry and their tissues determined to be subjected to biosafety disposal shall be subjected to biosafety disposal under the supervision of the formal veterinarian.

6.4.3 The enterprises shall formulate the corresponding protective measures to prevent the harm to people, as well as product cross contamination and environmental pollution during the biosafety disposal.

7 Hygienic Control of Slaughtering and Processing

7.1 The enterprises shall implement the monitoring plan of residual substances as well as the monitoring plan of illegal additives and pathogenic microorganisms, developed by the government competent departments and establish their own monitoring plan of residual substances and the monitoring plan of pathogenic microorganisms on this basis for all edible products produced by their own enterprises.

7.2 The inspection post shall be set up in the proper position to check the carcass and product for hygienic conditions.

7.3 The appropriate measures shall be taken to avoid the carcass, tissue, body fluids (such as bile, urine, milk, etc.) and stomach content of the suspicious diseased livestock and poultry contaminating other meat, equipment and sites. The contaminated equipment and sites shall be cleaned and disinfected before restarting slaughtering and processing the normal animals.

7.4 The carcass or the product that is contaminated by the pus, exudation, pathological tissue, body fluid, gastrointestinal contents and others shall be reconditioned, removed or abandoned in accordance with the relevant regulations.

7.5 The utensils (such as containers for containing products, pipes for cleaning, etc.) shall not be put on the floor or in contact with the surface not cleaned, to avoid cross contamination of the product; if the product is put on the floor, the appropriate measures shall be taken to eliminate the contaminant.

7.6 Where the carcass and edible by-products need to be precooled after slaughtering according to the process requirements, they shall be precooled immediately. When segmenting, removing bones and packaging, the central temperature of livestock meat shall be kept below 7°C, the central temperature of the poultry shall be kept below 4°C and the central temperature of the edible by-products shall be kept below 3°C. The processing, segmenting, bone removing and other operations shall be as quickly as possible, so that the product is kept at the specified temperature. In the production of frozen products, the central temperature of meat shall be reduced to -15°C and below in 48 hours before placing it in the refrigerating storage.

7.7 The slaughter room shall have an adequate area to ensure the operations meet the requirements. Different livestock and poultry shall not be slaughtered at the same time in the same slaughter room.

7.8 The storage and the use of toxic and hazardous materials in the plant, workshop and laboratory shall be strictly managed to ensure the detergents, disinfectants, pesticides, fuels, lubricants, chemical reagents and other toxic and harmful substances to be used in the process and effectively controlled to avoid contamination of meat.

8 Packaging, Storage and Transportation

8.1

Packaging

8.1.1 It shall comply with 8.5 of GB 14881-2013.

8.1.2 Packaging materials shall be as it is specified in relevant standards, which shall contain no toxic and hazardous substances and shall not change the sensory characteristics of meat.

8.1.3 Packaging materials for meat shall not be used repeatedly, unless they are of corrosion resistant materials easy to clean and that they are subjected to cleaning and sterilization before use.

8.1.4 Inner and outer packaging materials shall be stored separately; the packaging material warehouses shall be kept dry, ventilated and clean.

8.1.5 The temperature of the product packaging workshops shall meet the specific requirements of products.

8.2

Storage and transportation

8.2.1 As it is specified in Chapter 10 of GB 14881-2013.

8.2.2 Finished products stored in warehouses shall be kept at the appropriate distance from the wall; they shall not be in direct contact with the floor; they shall be kept at a certain distance from the ceiling; and they shall be piled and stored in accordance with different types and batches, and marked.

8.2.3 There shall be no article adverse to the hygienic work in the storage warehouses; and the articles which may cause cross pollution or tainting by odour shall not be stored in the same warehouse. The warehouses shall be sterilized at fixed times.

8.2.4 The refrigeration storage warehouses shall be defrosted at fixed times.

8.2.5 Meat shall be transported in special transportation facilities which shall not be used to transport livestock and poultry, livestock and poultry products requiring decontamination treatment or other articles which may pollute meat.

8.2.6 Mixed transportation of packaged and non-packaged meat on the same vehicle shall be avoided; if not avoidable, physical isolation and protection measures shall be taken.

8.2.7 The transportation facilities shall be provided with refrigeration and heat preservation measures in accordance with the characteristics of products. The appropriate temperature shall be maintained during the transportation process.

8.2.8 The transportation facilities shall be cleaned and sterilized on a timely basis to keep them clean.

9 Product tracing and recalling management

9.1

Product tracing

A sound traceability system shall be established to ensure that meat and its products can be traced in the case when an unacceptable risk of safety and health quality occurs.

9.2

Product Recall

9.2.1 Livestock and poultry slaughtering and processing enterprise shall establish a product recall system, when the delivered product is found not acceptable or with potential quality and safety risk, the product of unacceptable batch shall be promptly and completely recalled, and reported to the official veterinarian.

9.2.2 The treatment of recalled products shall comply with relevant regulations of GB 14881-2013.11.

10 Personnel Requirements

10.1 It shall comply with relevant regulations.

10.2 The personnel engaged in the operation of direct contact with a packaged or unpackaged meat, meat equipment and utensils and meat contact surface, shall be subject to medical examination and shall obtain the health certificate issued by the regional medical institution before taking their work activities; the medical examination shall be carried out every year and, if necessary, a temporary health inspection can be carried out. Those suffered from the diseases that affect food hygiene, shall be removed from the activities related to food production.

10.2 The personnel engaged in meat production and processing, inspection and quarantine, and management shall keep personal cleanliness, and shall not carry the objects not related to the production into the workshop; they shall not wear jewelry and watches, shall not use make up in operation; they shall wash their hands, disinfect, and wear overalls, hats, shoes before entering the workshop, and shall take them off when leaving the workshop.

10.3 The personnel in the areas of certain operations with different health requirements shall wear their work clothes and hats of different colours or signs. The personnel in different processing areas shall not visit each other.

10.4 The enterprises shall be arranged with appropriate manning level for inspection and quarantine. The personnel engaged in slaughter, segmentation, processing, inspection and health control shall have appropriate qualifications, shall be professionally trained and shall pass the test before taking their work activities.

11 Sanitary Management

11.1

Sanitary Management System

11.1.1 The enterprises shall establish and implement a food safety and health control system based on the hazard analysis and prevention and control measures as the core element.

11.1.2 The enterprises shall be encouraged to establish and implement the hazard analysis and critical control point (HACCP) system.

11.1.3 The top management of the enterprises shall define the hygienic quality policies and objectives of the enterprises, establish corresponding organizations, and provide enough resources to ensure the effective implementation of the food safety control system.

11.2

Hygienic management requirements

11.2.1 The enterprises shall make hygienic management requirements in writing, define the responsibilities of operators, determine the execution frequencies and carry out effective monitoring and corresponding corrective and prevention measures.

11.2.2 Water and ice in direct or indirect contact with meat (including raw materials, semi-finished products and finished products) shall meet the hygienic requirements.

11.2.3 Utensils, gloves and packaging materials in contact with meat shall be maintained clean and safe.

11.2.4 The design of personnel hygiene and employee operation and execution shall guarantee that meat is protected from cross pollution.

11.2.5 The facilities for handwashing of operators and the toilet facilities shall be kept clean and maintained at fixed times.

11.2.6 Prevent the pollutants including chemical, physical and biological sources from causing pollution to meat, meat packaging materials and meat contact surfaces.

11.2.7 Mark, store and use all kinds of toxic chemical substances correctly.

11.2.8 Prevent employees from causing pollution to meat, meat packaging materials and meat contact surfaces because of bad health conditions.

11.2.9 Prevent and eliminate damages caused by rats, pests and birds.

12 Record and file management

12.1 Establish and implement a recording system, including the links such as acceptance of livestock and poultry, inspection before slaughtering, inspection after slaughtering, decontamination treatment, sterilization and storage, as well as the maintenance records of slaughtering and processing equipment, facilities and transportation vehicles and utensils. The records shall be complete and true to ensure effective traceability of all links of products from the entry of livestock and poultry to the delivery of products.

12.2 The enterprises shall record the name, batch, specification and quantity of recalled products, the reason for recalling, subsequent improvement programs and handlings after recalling, and other information.

12.3 The enterprises shall keep the records of staff entry and training and so on.

12.4 For the relevant records showing the product hygienic quality, the enterprises shall make and implement a quality recording management procedure and provide the marking, collection, cataloguing, filing, storage, custody and handling of quality records.

12.5 All records shall be accurate, standardized and traceable; the storage period shall not be less than 6 months after the guarantee period of meat; when no specific guarantee period is specified, the storage period shall not be less than 2 years.

12.6 The enterprises shall establish the procedural document required by the food safety control system.
