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Farm animal welfare requirements
Waterfowl

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Preface

This Standard is drafted according to the compilation rules given in GB/T 1.1-2009.

This Standard is proposed by China Feather and Down Industrial Association.

This Standard is under the centralized management of China Association for the Promotion of International Agricultural Cooperation (CAPIAC).

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Introduction

0.1 General

To promote the harmonious coexistence between human beings and natural organisms, ensure the quality and safety of animal-derived products, and promote the healthy, desirable and sustainable development of waterfowl breeding industry in China, this Standard set forth the animal welfare requirements for waterfowl in the process of breeding, transportation, slaughter and down taking.

This Standard follows the five principles of animal welfare generally recognized in the world and combines with the production status of waterfowl in China, focused on the most core production element of livestock breeding industry, namely, the animals. Based on the current status of China's waterfowl production, the philosophy is to treat animals scientifically, reduce animals pain and stress, provide animals with suitable growth environments and nutrition, and improve animal quality of life and health. This Standard stipulates the animal welfare requirements for the whole process of breeding, transporting, slaughtering, fleece and processing of waterfowl.

This Standard follows the principle of traceability, and regulates the identification management of the whole process of waterfowl breeding, transportation, slaughter, down taking and processing.

0.2 Basic Principles

The five basic principles of animal welfare are the basis of a series of standards for farm animal welfare. They include the following:

- a) **Freedom from hunger and thirst** by ready access to fresh water and a diet to maintain full health and vigour.;
- b) **Freedom from discomfort** by providing an appropriate environment including shelter and a comfortable resting area;

- c) **Freedom from pain, injury and disease** by prevention or rapid diagnosis and treatment;
- d) **Freedom from fear and distress** by ensuring conditions and treatment which avoid mental suffering;
- e) **Freedom to express normal behaviour** by providing sufficient space, proper facilities and company of the animal's own kind.

Farm animal welfare requirements Waterfowl

1 Scope

This Standard specifies the terms and definitions of animal welfare for waterfowl (ducks, geese and muscovy ducks) . It specifies the basic requirements for the source of chicks, feeding and drinking water, breeding environment, feeding management, health, transportation, humane slaughter, down taking, processing and records and traceability.

This Standard is applicable to the welfare management of waterfowl during the whole process of breeding, transportation, slaughter, down taking and processing.

2 Normative References

The following documents are essential for the application of this document. For dated references, only dated versions are applicable to this document. For undated references, the latest version (including all amendments) is applicable to this document.

GB 5749 Standard for Drinking Water Quality

GB 13078 Hygienical Standard for Feeds

GB/T 16569 Disinfection Requirement for Livestock and Poultry Products

GB/T 20014.11 Good Agricultural Practice Part 11: Livestock Transport Control Points and Compliance Criteria

NY/T 388 Environmental Quality Standard for the Livestock and Poultry Farm

Technical Specification for Harmless Treatment of Sick and Dead Animals (Agri-Medicine [2017] No. 25 of the Ministry of Agriculture and Rural Affairs of the People's Republic of China)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1

Farm Animal Welfare

Farm animals shall be taken good care of in the process of breeding, transportation and slaughter. They are provided with appropriate nutrition and environmental conditions. They are treated well scientifically and disposed of correctly. The pain and stress response of animals shall

be reduced and the quality of life and health of animals shall be improved.

3.2

Environmental Enrichment

Measures to continuously enrich and improve the living environment of animals to meet their needs.

3.3

Abnormal Behavior

It refers to behaviors that have no purpose or are harmful to oneself and other individuals (such as feather pecking, anus pecking, etc.).

3.4

Free-range Rearing

A breeding method that allows freely entering and exiting the poultry house, free activities, free food intake and drinking water, and obtaining shelter.

3.5

Raised on the Litter Floor

The way of raising on the litter floor in an enclosure.

3.6

Raised on the Slatted Floor

A single-layer breeding method on a slatted floor artificially erected in an enclosure.

3.7

Raised on the Multi-Layer Slatted Floor

A breeding method on a multi-layer slatted floor in an enclosure.

3.8

Forced Feeding

Using any method of forcing waterfowl to eat more food than they need, especially the manual intervention method of feeding poultry with mechanical equipment (pipes).

3.9

Humane Slaughter

A slaughter method (including pre-slaughter treatment) to reduce stress, fear, pain and limb injury of animals.

3.10

Feather Down

A general designation for down and feather that grow on waterfowl.

3.11

Live Plucking

Using artificial methods to pluck feather down from living waterfowl.

4 Sources of young poultry

4.1 Source

Young poultry should come from poultry farms that have the *Breeding Livestock and Poultry Production and Operation License*. The construction and introduction of breeding poultry farms should be carried out in accordance with the requirements of the *Animal Husbandry Law of the People's Republic of China* and *Breeding Livestock and Poultry Administrative Regulations*. Their breeding poultry are healthy groups that have been cleaned of diseases. Their affiliated egg hatcheries should be designed, constructed and managed in accordance with standardized procedures.

4.2 Disposal

4.2.1 If male and female identification is required, it should be carried out on the day of hatching. When identifying male from female, the identifier should do a good job in disinfection and hygiene.

4.2.2 Immunization with relevant vaccines should be carried out on the day of hatching.

4.2.3 Young poultry shall be stored and transported in clean and sanitary standard containers, and the area occupied by each duckling shall not be less than 30 cm²; the area occupied by each gosling or muscovy duckling shall not be less than 40 cm².

4.2.4 The room temperature for storing young poultry should be 25 °C~28 °C, the humidity should be 60%~70%, and the storage time should not exceed 12 hours from picking young birds to transporting them out. Special transport vehicles should be used for young poultry transportation. The temperature of the carriage should be controlled between 25 °C and 28 °C, and the ventilation should be good.

5 Feeding and Drinking Water

5.1 Feed

- 5.1.1 The use of feed and feed raw materials shall meet the requirements of GB 13078.
- 5.1.2 Feed supply shall conform to the characteristics of waterfowl species and the nutritional requirements of physiological stages, and shall meet the requirements of maintaining good physical condition and normal production of waterfowl at all growth stages.
- 5.1.3 The formula feed purchased by a poultry farm shall have the document record of the feed raw material composition and nutrient content of the supplier. When self-batching, the feed formula and ingredient list shall be kept, and the source of feed raw materials shall be traceable.
- 5.1.4 Feed derived from animal protein of birds and the hormone raw materials should not be used.
- 5.1.5 Antibiotics or similar antibiotic-containing raw materials for the purpose of promoting growth should not be used in feed.
- 5.1.6 Feed should be transported, stored and delivered in a safe and sanitary manner to prevent insect pests, moisture, deterioration and pollution.

5.2 Feeding

- 5.2.1 Sufficient feeding space shall be provided according to different feeding systems, waterfowl species, individual sizes and quantities (Table 1) to meet the feeding needs.

Table 1 Feeding Space of Adult Waterfowl Unit: cm/bird

Waterfowl species	Unilateral linear feeding chute	Bilateral linear feeding chute	Round feeding chute (by circumference)
Duck	≥ 8	≥ 4	≥ 6
Goose	≥ 12	≥ 6	≥ 9
Muscovy duck	≥ 10	≥ 5	≥ 8

- 5.2.2 Feeders should be evenly distributed in poultry houses, and the distance from the bird to the nearest feeder should not exceed 4 m. The best height of the feeder should be adjusted according to the age and size of the bird, so as to be as high as the back height of the bird.
- 5.2.3 The feeding equipment shall be kept clean and the residual feed shall be cleaned in time to prevent it from spoiling.

5.2.4 Forced feeding or cutting off food should not be carried out.

5.3 Drinking Water

5.3.1 Adequate, clean drinking water shall be provided, and the water quality shall meet the requirements of GB 5749.

5.3.2 Waterers should be evenly distributed, and the maximum distance from birds to waterers should not exceed 4 m.

5.3.3 It should be ensured that each waterfowl has enough drinking space and a certain water pressure. The number of drinking fountains should meet:

a) at least 1 bell-type waterer for every 4 waterfowl; or

b) at least 1 nipple waterer for every 30 waterfowl; or

At least 1m long trough waterer for every 20 waterfowl.

5.3.4 The height of a waterer should be adjusted according to different production methods, age (days) and body size. The nipple waterer should be the same height as the eyeliner of birds, and the bell waterer and trough waterer should be the same height as the back of birds.

5.3.5 The water supply system should be regularly tested, cleaned, disinfected and maintained, and there should be well-developed sanitary management measures. Water storage facilities used in drinking water systems should be closed and cleaned and disinfected regularly.

5.3.6 According to veterinarian's medical advice, when drugs or anti-stress agents need to be added to drinking water, special equipment should be used and records of the addition should be kept.

5.3.7 The potential disease risks of natural water sources should be evaluated when adopting free-range rearing.

6 Breeding Environment

6.1 Poultry Farms and Houses

6.1.1 The planning, design and construction of poultry farms shall meet the requirements of relevant national laws, regulations and standards.

6.1.2 The construction of poultry farms should meet the requirements of biological safety. The boundaries of staff living areas, feeding areas and sports grounds are obvious. Fences or nets should be set up. Poultry farms shall be set up with quarantine areas for epidemic prevention. There shall be special clean roads and dirt roads communicating with the outside world. The clean roads and dirt roads shall not intersect.

- 6.1.3 Facilities for harmless treatment of dead animals and wastes shall be set up in the farm.
 - 6.1.4 Non-toxic and harmless materials shall be used for poultry houses and facilities and equipment in the houses. Electrical equipment, wires and cables in the houses shall conform to relevant specifications, and protective measures shall be taken to prevent waterfowl from approaching and rodents from biting.
 - 6.1.5 The poultry house shall meet the temperature requirements, and shall be thermally insulated. The floor and walls shall be easy to clean and disinfect.
 - 6.1.6 The noise of equipment inside and outside the poultry house should be strictly controlled, and the total noise of equipment inside the house should not exceed 70dB during operation.
 - 6.1.7 Fences, screens, food troughs, waterers and other feeding facilities installed in poultry farms that are in contact with poultry should not cause harm to animals.
- 6.2 Laying Equipment
- 6.2.1 Every four laying fowls should be equipped with a laying box, or every 500~600 laying fowls in the laying shed should be equipped with a laying enclosure of not less than 20 m², or equipped with egg-picking and egg-collecting facilities.
 - 6.2.2 The entrance and laying area of the laying box or enclosure shall be equipped with appropriate screen and nest mat to provide a comfortable and quiet rest and laying environment for laying fowls. Nest mats should be soft, comfortable, hygienic and easy to clean and disinfect.
- 6.3 Floor and slatted floor
- 6.3.1 The ground of poultry house shall be level and dry, convenient for effective cleaning and disinfection.
 - 6.3.2 For raising on the floor, the floor should be covered with litter for animals to seek, explore and rest. The litter thickness should be appropriate, depending on seasons and growth stages of the waterfowl. Fresh litter should be added in time and the litter surface should be kept dry.
 - 6.3.3 The litter should be sanitary, dry, fragile, loose and free from hardening. Probiotics should be added to the litter.
 - 6.3.4 For raising on the slatted floor, the slatted floor shall be made of wood, bamboo, engineering plastic or plastic-sprayed steel wire mesh. The mesh diameter or spacing of the slatted floor should be 1.5 cm~2.5 cm. The slatted floor surface shall be divided into several breeding units, and the area of each breeding unit for ducks shall not be less than 4 m²; for goose or muscovy duck, the unit shall not be less than 10 m².
 - 6.3.5 The surface of brooding floor should be divided into several small spaces or fences, and soft materials with good water absorption and warmth retention should be laid on one quarter of the area.

6.3.6 When raising on the multi-layer slatted floor, it should not exceed four floors, the clear height of living area should not be less than 55 cm, and effective isolation should be carried out between floors to prevent mutual pollution between floors.

6.3.7 It is advisable to lay soft rubber leakage orifice plates in the drinking water area to keep the shed dry and protect the soles of the feet.

6.4 Lighting

6.4.1 Natural light should be introduced to the poultry house and it shall also have facilities to shield sunlight. Artificial lighting equipment shall be provided to ensure sufficient and uniform light in the poultry house to ensure flexible control of the lighting duration and intensity in it.

6.4.2 The best illumination time and intensity needed should be applied, depending on production methods, growth stages and physiological needs of waterfowl.

6.4.3 The suitable artificial supplementary lighting of the duck house is shown in Table 2.

Table 2 Artificial lighting

growth period	age	lighting time	light intensity	note
brooding	1 day	24h	20~30lx	weak light less than 5lx should be provided at least for 6h every day
	2 days	23h		
	3 days	22h		
	4 days	21h		
	5 days	20h		
	6 days	19h		
	7 days	18h		
	8 days	17h		
	9 days	16h		
to the age of slaughter	10~20lx			
rearing	15~25lx			
laying				

6.4.4 During the laying period, the accumulative lighting time per day should be controlled between 11h and 13h, and the artificial supplementary light intensity should be 80lx.

6.4.5 Artificial supplementary light intensity for muscovy ducks shall be 12 lx, for those aged 1-3 days, and 8 lx~10 lx, for those aged 4 days or older, and the weak light less than 5 lx should be provided at least for 6 hours every day.

6.4.6 The opening and closing of the artificial light source should be carried out in a gradual manner, the adaptation time should not be less than 15 min.

6.5 Temperature, Humidity and Ventilation

6.5.1 The best temperature needed should be applied to avoid sudden changes in temperature, depending on growth stages of waterfowl.

6.5.2 The poultry house should be effectively ventilated and the relative humidity should be controlled at 50%~75%.

6.5.3 The air quality in the house shall be kept in good condition, compliant with NY/T 388.

6.6 Environmental Enrichment

6.6.1 Poultry farms should provide a safe space allowing free movement to meet the needs of waterfowl to express their natural habits and exchange emotions.

6.6.2 Environmental enrichment materials, such as those (wood blocks and knotted thick hanging ropes) allowing pecking, and other materials shall be provided as soon as possible (generally no later than 7 days old) to meet the requirements of environmental enrichment. Enrichment that is reused should be thoroughly cleaned and disinfected.

6.6.3 Poultry farms should provide necessary water sources to satisfy the expression of waterfowl's biological habits such as combing feathers.

6.7 Feeding Density

6.7.1 Appropriate feeding density, sufficient space and site for sleeping, activities, food intake and drinking, and a good social environment should be ensured.

6.7.2 The feeding density of waterfowl is as shown in Tables 2, 3 and 4.

Table 2 Duck Feeding Density Unit: duck/m²

Variety	Growth stage		Feeding Density	Feeding method
Meat duck	1d~5d		≤35	Raised on the slatted floor
	6d~10d		≤20	
	11d~15d		≤15	
	16d~available for slaughtering		≤8	
	1d~7d		≤40	Raised on the multi-layer slatted floor
	8d~available for slaughtering		≤14	
Breeding duck	Brooding period	1d~5d	≤25	Raised on the litter floor
		6d~12d	≤10	
		13d~28d	≤5	
	Fertility period		≤3	
	Laying period		≤3	

Table 3 Goose Feeding Density Unit: goose/m²

Variety	Growth stage	Feeding Density	Feeding method
Meat goose	1d~7d	≤20	Raised on the slatted floor
	8d~14d	≤15	
	15d~21d	≤10	
	22d~28d	≤6	
	29d~available for slaughtering	≤4	

Breeding goose	Brooding period	1d~7d	≤ 20	Raised on the slatted floor
		8d~14d	≤ 12	
		15d~21d	≤ 8	
		22d~28d	≤ 5	
	Fertility period		≤ 3	Raised on the litter
	Laying period		≤ 2	Raised on the litter
			≤ 3	Raised on the litter

Table 4 Muscovy Duck Feeding Density Unit: duck/m²

Variety	Growth stage	Feeding Density	Feeding method
Meat muscovy duck	1d~7d	≤ 35	Raised on the slatted floor
	8d~14d	≤ 25	
	15d~21d	≤ 15	
	22d~available for slaughtering	≤ 7	

6.8 Site Outside the House for Free-range Rearing

6.8.1 Ground activity area outside the house

6.8.1.1 There should be enough space for ground activities outside the house, the area should not be less than 1.5 times of the area inside the house, and effective isolation should be carried out to improve biological safety.

6.8.1.2 The ground activity area outside the house should be of safety and hygiene, have good drainage measures separating rain from sewage.

6.8.1.3 Farmyard outside the house should be built with a cooling grid or plant vines to form a shade shed or artificial shelter area, and should be reasonably laid out.

6.8.1.4 Ramps should be provided at the foundation of the poultry house entrance and exit to facilitate easy entry and exit of poultry.

6.8.2 Water activity area outside the house

6.8.2.1 The natural water activity area shall be not less than 1.5 times of the land activity area and the water depth shall not be less than 1 m.

6.8.2.2 The water depth in the activity area of the artificial pool shall not be less than 0.5 m, and the water area shall be 50 m² for every 1,000 waterfowls.

6.8.2.3 The connection between the land activity area and the water activity area shall be provided with ramps that extend gently to 30 cm under water.

7 Feeding Management

7.1 Manager

Poultry farm managers should have received training in animal welfare related knowledge, master basic knowledge of animal health and welfare, and be competent for the work they undertake.

7.2 Raising Personnel

Breeders should be trained and instructed in animal welfare related knowledge, have the ability to identify potential welfare problems, and be able to find out the causes and correctly deal with common disease symptoms and abnormal behaviors.

7.3 Daily Management

7.3.1 Daily management of poultry farms should be in a gentle approach, and all activities should be slow and cautious to reduce animal fears, injuries and unnecessary terrors.

7.3.2 The poultry house should be cleaned daily, including waterers, feeding facilities and floors.

7.3.3 Artificial pools should be cleaned daily and water should be replaced daily.

7.3.4 Iron wire, plastic cloth, electric wire and other sundries that may be eaten by animals in the poultry house and the surrounding environment should be removed at any time.

7.3.5 The equipment in the house, such as water line, feed line, temperature control device, ventilation equipment and dung removal system, shall be inspected regularly. If any faults are found, they shall be eliminated immediately.

7.3.6 The time for grouping, transportation, immunization, treatment (such as injection), weighing, loading and loading/unloading should be shortened as far as possible.

7.3.7 Inspection should be carried out every day. If welfare problems such as poor health or injuries are found, the causes should be found out in time and measures such as isolation, treatment and elimination should be taken to deal with them properly.

7.3.8 Various emergencies such as natural disasters and extreme weather that may adversely affect animal welfare should be identified and a response plan should be formulated.

7.4 Protection of animals from other animals

7.4.1 Poultry houses should be equipped with facilities to prevent rats, cats, dogs and other animals from intruding, so as to avoid sudden incidents such as poultry panic or injury.

7.4.2 Appropriate isolation facilities should be provided in the outdoor activity area and the water activity area to improve biological safety.

7.4.3 At night, the entrance and exit between the poultry house and the activity area outside the house should be closed to prevent the invasion of animals.

8 Health

8.1 Health Plan

Poultry farms shall formulate veterinary health and welfare plans that meet the requirements of laws, regulations and relevant standards. The contents shall at least include:

- Biosafety measures;
- Disease prevention and control measures;
- Drug use and residue control measures;
- Harmless treatment measures for dead waterfowl and wastes;
- Other measures related to animal welfare and health, etc.

8.2 Non-therapeutic Surgery

8.2.1 When marking waterfowl, operators should receive practical training and the materials used should be safe and hygienic.

8.2.2 When permanently marking waterfowl, use a method bringing waterfowl transient pain or no pain, and preset subsequent treatment measures to prevent possible infection.

8.2.3 The puncture operation to mark the wing number should be within 3 days after the young bird emerges from the shell, and puncture should be made at the vascular-free membranous part on the inner side of the wing, and certain membranous growth space should be reserved for bending the wing number marker.

8.2.4 A certain space should be reserved for the wearing of the foot number marker to adapt to the growth of the foot, and regular inspection should be carried out. Any abnormality should be corrected in time.

8.2.5 If it is necessary to trim waterfowl feather down, it should be done carefully. During operation, it is not allowed to forcibly pull feather down or cause additional damage to waterfowl.

8.3 Harmless Treatment/Elimination

8.3.1 Waterfowl killed due to illness should be treated harmlessly according to the cause of disease, specifically referring to the Technical Specification for Harmless Treatment of Dead and Sick Animals issued by the Ministry of Agriculture and Rural Affairs and GB/T 16569, and relevant records should be made to ensure the biological safety of waterfowl farms.

8.3.2 Waterfowl to be eliminated should be classified according to their health status, and elimination evaluation records should be made to provide reference for subsequent feeding management.

8.4 Drug Treatment

- 8.4.1 In the process of feeding, no illegal excess or drug abuse is allowed.
- 8.4.2 Therapeutic drugs used in the feeding process should be purchased according to the medical certificate and drug prescription issued by a licensed veterinary surgeon with veterinary qualifications, and the procurement channels should be standardized, and the purchase and use details should be recorded in detail.
- 8.4.3 Strictly implement relevant regulations of the relevant departments of the state in the prevention, drug treatment and no-drug period before going on the market.

8.5 Biosafety

- 8.5.1 Strengthening the management of poultry farm biological safety isolation areas, formulate a biological safety assessment form for waterfowl.
- 8.5.2 Formulate relevant biosafety management measures in poultry farms, establish relevant biosafety management systems, regularly train poultry farm breeding managers and breeders on biosafety management knowledge, formulate registration forms for the implementation of poultry farm biosafety systems, and make regular check and patrol.
- 8.5.3 The poultry farm should regularly check the implementation of the health plan, and update or revise the plan in due course.

9 Transport

9.1 Capture and Handling

- 9.1.1 The capture during the slaughter or elimination shall be carried out under dark light or blue light, and appropriate barriers shall be adopted to prevent crowd or trampling. When approaching waterfowl groups, the range of movements should be small, and noise, dust and confusion should be reduced as much as possible to avoid poultry group from tension and fear. Fasting shall be carried out before capture, generally for 6h~8h, and no drinking is allowed 1h before transportation.
- 9.1.2 Grasping should be done with both hands (holding the chest and clasping the wings, or holding the tarsal joints of the two feet of the bird with both hands respectively), instead of grasping a single wing or single foot, and the operation should be gentle to avoid fracture of wings or legs.
- 9.1.3 The equipment used for loading and unloading shall be appropriate, and the operators shall operate according to specifications during loading and unloading, so as to ensure that the stress on waterfowl is reduced to a minimum.

9.2 Transport Management

- 9.2.1 When waterfowl are ready for slaughter or eliminated, the transportation mode shall meet the requirements of GB/T 20014.11, the continuous transportation time shall not exceed 8h, and the corresponding stress mitigation measures shall be implemented and the

transportation emergency plan shall be formulated. If more than 8h are needed for transportation, it is necessary to take a timely rest and supplement food and water for waterfowl according to the actual situation.

- 9.2.2 Transportation personnel (drivers and escorts) should receive necessary guidance and training, understand the basic knowledge of veterinary medicine and animal welfare, and be competent for the work they undertake.
- 9.2.3 Transport vehicles, transport cages and all surfaces and guardrails in contact with waterfowl shall be free from sharp edges or protrusions.
- 9.2.4 Transport tools such as vehicles, cages should be cleaned and disinfected unoccupied before and after use.
- 9.2.5 Standard waterfowl transportation cages should be adopted. The loading density (calculated by cage bottom area) should not be less than 550 cm² per waterfowl, and a comfortable transportation environment should be created to avoid casualties caused by trampling and crowding.
- 9.2.6 Transportation in extreme weather should be avoided, and protective measures (wind deflector or canvas) should be provided in case of severe weather. When the temperature is higher than 25 °C (the humidity is higher than 75%) or lower than 5 °C, appropriate measures should be taken to reduce the stress response of the poultry caused by too high or too low temperature.

10 Humane Slaughter

10.1 Training

Regular training on professional knowledge of workers in the humane slaughtering process is conducted to ensure that the waterfowl slaughtering procedures and operations meet the requirements of relevant animal welfare regulations and slaughter hygiene quality requirements.

10.2 Health Monitoring

Improve the health and hygiene quality monitoring system for waterfowl during slaughter and establish health and hygiene quality monitoring records for slaughter batches.

10.3 Enclosure for poultry pending for slaughter

- 10.3.1 The enclosure for poultry pending for slaughter should have good sound and visual isolation and blocking effect to prevent waterfowl to be slaughtered from directly contacting or being at the slaughter site.
- 10.3.2 The ambient temperature and humidity of the enclosure for poultry pending for slaughter should be appropriate to prevent stress injury of waterfowl to be slaughtered due to bad temperature and humidity.

10.4 Hanging

For waterfowl entering the slaughter process, the catching behavior should be standardized, and the hanging action should be gentle and should not be rough.

10.5 Stunning

10.5.1 The time from hanging to stunning should not exceed 1 min.

10.5.2 It is advisable to adopt waterbath electrical paralyzing and stunning technology, select the appropriate equipment according to the waterfowl species (goose, duck, muscovy duck) and set parameters such as voltage, electric shock time, water bath length and depth. Electrical paralyzing reference parameters: voltage 90v~160v; current 380 mA ~ 950 mA; duration 3s~5s.

10.5.3 If the stunningness caused by electrical paralyzing is insufficient, the slaughter line shall be immediately stopped and the parameters of electrical paralyzing shall be adjusted, and the stunningness caused by electrical paralyzing shall be carried out again for waterfowl without stunningness.

10.6 Bloodletting

10.6.1 The time interval between stunning and bloodletting of waterfowl should not exceed 20s to minimize the stress response of stunning and bloodletting to slaughtered carcasses.

10.6.2 Equipment or manual bloodletting can be used, and arrange inspectors to perform further operation on waterfowl with insufficient bloodletting.

11 Down taking

11.1 Down taking should be carried out after humane slaughter to death.

11.2 No artificial depilation is allowed during waterfowl molting.

11.3 No live plucking is allowed.

12 Processing

12.1 Processing enterprises should meet the requirements of relevant national laws, regulations and standards.

12.2 Down and waterfowl products used for processing should come from the poultry farms and the slaughter enterprises that meet the requirements of this Standard during the breeding and slaughtering process.

12.3 To avoid product confusion, processing enterprises should distinguish the processing of animal welfare products from conventional products.

13 Records and Traceability

- 13.1 A record management system should be established for the processes of breeding, transportation and slaughter. The relevant contents of animal welfare should be recorded and the whole process from procurement, transportation to sales should be managed.
- 13.2 Traceability should be realized for the whole process of breeding, transportation, slaughter and down taking.
- 13.3 Records shall be complete and true, and can be recorded electronically, on paper or by other feasible methods. Records of commercial waterfowl shall be kept for at least three years.

References

- [1] GB/T 20014.10-2005 Good Agricultural Practice Part 10: Poultry Control Points and Compliance Criteria.
- [2] GB/T 20014.11-2005 Good Agricultural Practice Part 11: Livestock Transport Control Points and Compliance Criteria.
- [3] DB41/T 1012-2015 Technical Procedures for Slaughter and Processing of Meat Ducks.
- [4] RSPCA welfare standards for domestic and common ducks.
- [5] Responsible Down Standard 2.0 of Textile Exchange.
- [6] OIE Terrestrial Animal Health Code.
- [7] Quality DOWNPASS Standard in 2017.
- [8] Guidance Note 7-Electrical Waterbath Stunning Method of Poultry, Humane Slaughter Association.
- [9] Maple Leaf Farms Duck Well-being Guidelines 2015 version.
- [10] CHEN Yuxin et al. Waterfowls in China, China Agriculture Press, May 1990.
- [11] WU Suqin et al. Guide to Goose Production, Agriculture Press, May 1992.
- [12] ZHANG Haibin et al. New Technologies for Green Goose Raising, China Agriculture Press, January 2007.
- [13] ZHANG Haibin et al. New Technologies for Green Duck Raising, China Agriculture Press, January 2007.
- [14] DU Wenxing. Manual on Safe Production of Nuisanceless Duck, China Agriculture Press, January 2008.
- [15] SHI Zhendan, et al. Q&A on Efficient Goose Production, China Agriculture Press, February 2017.
- [16] YAO Xuebin, et al. Effects of Different Illumination Durations on Growth Performance and Endotoxin of Meat Goose [J]. Journal of Zhongkai University of Agriculture and Engineering, 2018 (31): 50-52.
- [17] Dr. Temple Grandin. Improving Animal Welfare: A Practical Approach. CABA,2010.