

National Standard of the People's Republic of China

GB/T 23871-2009

Code of Hygienic Practice for Fish and Fishery Products Processing Establishment

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Foreword

This standard was proposed by the Certification and Accreditation Administration of the People's Republic of China(CNCA),and it is under the jurisdiction of the CNCA.

This standard was drafted by the Department of Registration Supervision of the CNCA and Shandong Entry-Exit Inspection and Quarantine Bureau.

This standard was drafted by Xiaowei Shi, Shaoping Gu, Fanming Kong, Qing Lv, Xiao Chen, Gang Wang and Chao Lu.

Code of Hygienic Practice for Fish and Fishery Products

Processing Establishment

1. Scope

This standard specifies the requirements for fish and fishery products processing establishments on the basic principles, raw materials and ingredients, plant site environment, workshops with facilities and equipments, processing controls, packaging, storage and transportation, employee hygiene, the specific requirements for processing vessels, quality management systems and its operations and other aspects.

This standard is applicable to fish and fishery products processing establishments approved by official competent authorities, including processing plants, processing vessels and storage cold stores, etc.

2. Normative Reference

The following normative documents contain provisions which, through references in this text, constitute provisions of this national standard. For dated references, subsequent amendments to (excluding those corrections), or revisions of, any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. For undated references, the latest edition of the normative document referred to applies.

GB5749 Standards for drinking water quality

GB/T 19538 Hazard Analysis and Critical Control Points(HACCP) System and guidelines for its Application (GB/T19538-2004, Annex to CAC/RCP1-1969, Rev.3 (1997), Amd, 1999, IDT)

GB/T 19838 Hazard Analysis and Critical Control Points(HACCP) System and guidelines for its application to Fish & Fishery Product

GB/T 20941 Good manufacturing practice for fish products processing factory

3. Terms and definitions

For the purposes of this standard, the terms and definitions given in GB/T 19838 and the following apply.

3.1 Fish and fishery products; aquatic products

It means any freshwater or seawater aquatic animal, plant or amphibian life, and food prepared from the above categories, which is intended for human consumption.

3.2 Fish and fishery products processing; aquatic products processing

It means the process of treating the fish and fishery products with physical or chemical methods, such as chilling, freezing, heating, dehydrating, smoking, frying, canning, and marinating, etc.

3.3 Pre-handling

It means the pretreatment on the fish and fishery products intended to change the integrity of the shape, such as slaughtering, heading, skinning, gutting and finning, etc.

3.4 Chilling

It means the process to lower the temperature of fish and fishery products down approaching to the temperature of melting ice.

3.5 Freezing

It means the process of placing the fish and fishery products into the refrigeration to lower the temperature down by making the products pass the temperature zone of maximum crystallization quickly. The thorough freezing process is only considered complete when the core temperature of the products reach -18 degree Celsius or below after the products reach heat balance.

3.6 Bivalve molluscs

It means the filter-feeding lamellibranch bivalve mollusks which are intended for human consumption, such as oysters, clams, mussels and scallops,etc.

3.7 Clean sea water

It means the natural,artificial or purified seawater which the level of micro-organisms, harmful substances or toxic marine plankton meets relevant requirements.

3.8 Purification

It means the process of placing the shellfish into clean seawater to eliminate or reduce the contaminated micro-organisms to the acceptable level for human consumption.

3.9 Food contact surfaces

It refers to all kinds of surfaces which directly or indirectly contact the food during the normal processing, such as utensils, table surfaces, conveyor belts, ice-making machines, ice tanks, gloves and aprons, etc.

3.10 Food defense

It means the protection of food production and supply chain from being humanly sabotaged and malicious contamination.

4. Basic principles

4.1 The food safety management should be carried out according to the principles of risk analysis;

4.2 Starting from the preliminary processing, the food safety along the whole food supply chain should be ensured, and the traceability should be maintained;

4.3 Quality management system based on HACCP principles should be established, and implemented with necessary food defense;

4.4 Raw materials, ingredients, semi-finished products and finished products should be monitored on harmful and hazardous substances such as pathogens and toxic residual substances, and the products standards and temperature requirements should be set up;

- 4.5 For those fish and fishery products which can not be stored at ambient temperature, especially frozen products, the cold chains should be maintained all the time;
- 4.6 Fish and fishery products processing establishments are liable to food safety. They should offer informations of food safety and hygiene of fishery products and fulfill the obligations on public hygiene and food safety.

5. Raw materials and ingredients

5.1 Basic requirements

- 5.1.1 The control procedures on raw materials and ingredients should be established and effectively implemented to ensure that raw materials and ingredients meet the relevant requirements;
- 5.1.2 All the raw materials should come from the water areas which are compliant with the requirements;
- 5.1.3 Suppliers of raw materials and ingredients should be evaluated regularly;
- 5.1.4 Raw materials and ingredients should be stored and transported at proper temperature and time, and should be kept away from contamination;
- 5.1.5 Substances without permission or with unclear compositions should not be used.

5.2 Wild fish and fishery products

- 5.2.1 The catching vessels, processing vessels or transportation vessels of wild caught fish should be approved by official competent authorities;
- 5.2.2 Fresh and alive fishery products should be transported under their suitable surviving conditions;
- 5.2.3 Iced-fresh fishery products should be chilled immediately after catching, and the temperature could be maintained between 0 and 4 degree Celsius;
- 5.2.4 The ice or water used for fresh fish storage should meet GB5749 or the hygiene requirements for clean seawater;
- 5.2.5 Catching and the following up handling operations on board such as pre-handling, cooling and freezing etc. should meet the national hygiene requirements.

5.3 Farmed fish and fishery products

- 5.3.1 The farmed fish and fishery products should be cultivated in the sites approved by official competent authorities. Cultivating environment, water quality, feedstuff and drugs should meet the relevant regulations;
- 5.3.2 The farmed fish and fishery products should be slaughtered or treated under hygienic conditions. If processing steps after slaughtering can not be carried out immediately, the above fishery products should be kept chilled;
- 5.3.3 The catching and transportation requirements for farmed fish and fishery products are the same as Item 5.2.

5.4 Imported fish and fishery products

Fish and fishery products should be imported with health certificates or hygiene certificates and certificates of origin issued by the competent authorities of the export country, and should be

under the inspection of the competent authorities.

5.5 Bivalve molluscs

- 5.5.1** The enterprises processing bivalve molluscs should establish the shellfish hygiene control procedure and ensure the raw material safety and traceability;
- 5.5.2** The bivalve molluscs should be harvested from the farms or harvest areas approved by the official competent authorities, and the farmers and harvesters should acquire the permission from the official competent authorities. Bivalve molluscs should be purified if needed;
- 5.5.3** Each container holding bivalve molluscs should have a label attached, and the bulk packed shellfish should carry the relevant documents. The labels or documents should indicate the farming or catching date, water area, species, quantity and the name of farmer or harvester. The relevant documents should be maintained after receipt to ensure the traceability;
- 5.5.4** Shucked bivalve molluscs should be packed and kept frozen with labels showing the processing date, name and address of enterprise or facility for shucking and the approval number issued by the official competent authority;
- 5.5.5** Bivalve molluscs materials should be tested on shellfish toxins to ensure the safety.

5.6 Other fishery products

- 5.6.1** Handling and reception of raw materials producing bio-toxins themselves, such as puffers, should comply with the relevant regulations. The puffer inspectors and processors should be qualified;
- 5.6.2** Semi-finished fishery products should come from enterprises approved by official competent authorities;
- 5.6.3** The expired raw materials and ingredients should not be used in the processing;
- 5.6.4** The allergens risks in the raw materials and ingredients should be thoroughly evaluated and effectively controlled;

6. Plant site environment

- 6.1** The plant site environment should comply with the hygiene requirements, far away from the contamination sources. The surrounding areas should be kept clean and hygienic. The plant site should have convenient transportation and sufficient water supply. Other products harmful to food hygiene should not be distribute, processed or stored in the plant site;
- 6.2** The main roads of site should be paved suitable for vehicles, such as concretes or bitumen, etc. The surface of road should be even and easy to clean without standing water;
- 6.3** The layout and design of the food establishments site should be reasonably carried out, and the processing area should be separated from living area which should not bring any negative impacts on processing area;
- 6.4** The establishments should have hygiene compliant storage facilities built compatibly with the production capacity for storing raw materials, ingredients, chemicals and packaging and other waste water treatment, waste collection and garbage temporary storage facilities;
- 6.5** The drainage system should be work freely without any foreign odor and being hygienic;
- 6.6** The waste water, waste materials, smoking and dust generated during the processing should

- be treated and discharged according to the relevant national regulations;
- 6.7** The toilets of the plant site should be equipped with flushing, hand washing, ventilation, pest and rodent proof facilities, easy to clean and be kept dry and clean;
 - 6.8** The establishments should not feed and raise any animals irrelative to the production;
 - 6.9** The site should establish the effective mouse-proof facilities, free from the breeding areas of mosquitoes and flies.

7. Workshops, facilities and equipments

7.1 Workshops

- 7.1.1** The workshops should be suitably designed to avoid cross contamination, which complies with the corresponding processing flow of fishery products and their hygienic processing requirements; The coverage area and height of workshops should be commensurate with the processing capacity and the setting of the equipments;
- 7.1.2** The floor of the workshops should be anti-corrosive, anti-slippery, wearing resistant and have adequate slope. The floor should facilitate the water to discharge and avoid the standing water, and should be easy to clean and disinfect with cleanness easily maintained, and coved at the junctions with walls;
- 7.1.3** The walls, roofs or ceilings inside the workshops should be made from non-poisonous, light colored, waterproof, mould resistant, not loose and easy to clean materials; the roofs or ceilings and the fixtures above the workshops should prevent the formation of dust and condensation and loose miscellaneous matters falling off;
- 7.1.4** The doors and windows of the workshops should be made from strong materials which are light colored, smooth, easy to clean and disinfect, waterproof and anti-corrosive; the fabrication should be rigorous;
- 7.1.5** The workshop exit, discharge outlets connected externally and ventilation areas should be installed with the facilities which are dustproof, pest proof and rodent preventative;
- 7.1.6** The designated areas should be set up which fits for cleaning and disinfection of utensils and equipments, which should not jeopardize the operations of processing and products;
- 7.1.7** The pitch bottom of drainage should be arc shaped and facilitates the cleaning; and the drainage pipe should be equipped with seal water unit to resist the spoilage of foreign odor and rodent-proof grids; and the drainage system should have settings which stop the solid wastes from entry. Any pipes and drainage should be ensured with the free flow and non-standing water;
- 7.1.8** Production water directly discharging onto the floors should be avoided; and the waste water from the production should not be discharged from low clean area to high clean area;
- 7.1.9** Separate areas should be used for storing disinfectant, detergent, packaging and trash to avoid cross contamination;

7.2 Water, electricity and steam facilities

- 7.2.1** The electricity supply facilities should meet the demand of processing. All the electricity facilities inside the workshop should be damp-proof and waterproof to ensure the safety of operations;
- 7.2.2** Adequate natural lighting or illumination lighting should be provided in the workshops,

and the light should not change the original color of the object; and the lighting should be covered for protection;

- 7.2.3 Water supply facilities should ensure that all the water flow and pressures in various areas of the enterprise should comply with the requirements; the pipes for processing water should be made from non-poisonous, non-harmful and corrosion resistant materials with proper devices installed to prevent anti-siphon, and should not be connected with non-potable water pipes to make sure pipes for potable water and non-potable water distinguished by marking;
- 7.2.4 Water purification or disinfection facilities should be established for processing water based on the local water characteristics and product needs; the water tanks or reservoirs should be built in an uncontaminated area and made from non-poisonous and non-harmful materials with cleaning and disinfection to be conducted regularly; and appropriate protection is required;
- 7.2.5 The ventilation equipments should be installed in workshops, the design and installation of which should facilitate the maintenance and be kept clean with air inlets away from contamination sources and air outlets; and areas where large volume of water-vapor, smoke and steam generated from steaming/boiling, frying, smoking and baking should set up the compulsory ventilation and facilities for oil and smoke extraction in compatible conditions;

7.3 Hand cleaning and disinfection, changing rooms and toilet facilities

- 7.3.1 Hand washing and disinfection facilities, drying facilities and boot disinfection facilities in certain amount commensurate with the production capacity should be established at the entrance of the workshops, washrooms and appropriate locations inside the workshops with disinfection concentration determined from effective disinfection results; Hand washing taps should be non-hand operated with water temperature controlled appropriate; The waste water from hand cleaning facilities should be directly discharged into the sewage;
- 7.3.2 The changing facilities should be sited to allow direct access to the workshops without recourse to any external area. Separate changing facility should be provided to certain area which has different level in cleanness, and the facility area should be compatible with the worker number with appropriate temperature and humidity. Cleanness, being hygienic, good ventilation and appropriate lighting should be provided; Personal items should be stored separately from work wears within the changing facilities;
- 7.3.3 The layout and facilities of toilets should not cause the potential contamination to the products; the door of the toilet should be automatically closed without opening directly into workshops; effective air extraction facilities and pest control facilities should be installed inside the toilets with rooms kept dry, clean and hygienic;

7.4 Equipments and utensils

- 7.4.1 Equipments and utensils should be made from materials which are strong, non-poisonous, non-absorbent, corrosion resistant, non-rusty and easy to clean and disinfect, and having no chemical reactions with fishery products, detergents and disinfectants; bamboo and wooden utensils are not allowed to be used;

- 7.4.2** Equipments and utensils should be smooth and even without obvious cove, bulging, gap and splitting. The equipments inside the workshop should be durable, easy to dismantle and clean, and their installation should comply with the requirements in terms of specification and hygiene with certain distance kept from floors, roofs and walls, which should be easy to maintain, clean and disinfect and hygiene control;
- 7.4.3** The designated containers should be distinguished with obvious marking and make sure the waste containers should not be mixed with edible products containers. The waste containers should be waterproof, corrosion resistant and leakage-proof; If waste is transferred by pipes, then the installation and maintenance of the pipes should prevent the products from being contaminated;

7.5 The maintenance of premises, facilities, equipments and utensils

- 7.5.1** Preventative maintenance plan should be established and effectively implemented for premises, facilities, equipments and utensils in order to maintain good working conditions;
- 7.5.2** The lubricants used for direct or indirect food contact equipments and utensils should be food grade;
- 7.5.3** Maintenance and calibration should be conducted regularly for instruments and equipments, and measuring and monitoring equipments should be calibrated in terms of measurement;

7.6 Requirements for specific processing

- 7.6.1** Smoking process should only be allowed in the separate smoking room/stove with ventilation system installed so that the smoke and heat generated from this procedure do not affect other procedures; Smoking should not use the wood coated with paints, varnished or laminated or treated with chemicals against preservation as smoking materials; and the smoking materials should not be kept in the smoking room/stove to comprise the quality of the products; the products should be quickly cooled down to the preserved temperature after being smoked and right before the packing; during the process of smoking or heating the growth of bacillus botulinus and formation of toxins should be effectively controlled;
- 7.6.2** The salting process should be conducted in the independent processing area and should not compromise other processing operations; and the fabrication of salting containers should prevent the products from being contaminated during the salting process;
- 7.6.3** The sealing and sterilization of canning products should comply with the specific requirements;

8 Process control

8.1 Health control during processing

- 8.1.1** Raw material pretreatment, processing, finished products packaging which need different hygiene requirements of the area, should be isolated in accordance with the processing specification and product characteristics , separate the flows of personnel, materials and steam to prevent the contamination.
- 8.1.2** It should avoid the waste water and wastes polluting the raw material and finished

products; Containers for products should not be in direct contact with floor.

- 8.1.3 It shouldn't influence the processing and lead cross contamination during equipment repairing, the area for repairing should be disinfected when finished
- 8.1.4 The rejected products must be stored separately, with conspicuous marks and disposed properly under the supervision of inspectors.

8.2. Temperature and time control

- 8.2.1 Temperature and time control should be strictly in accordance with the processing specification and hygienic requirements during pretreatment, cooking, frying, cooling, processing and storage process.
- 8.2.2 The process or places which has temperature requirements should be installed temperature display device. Processing workshop temperature should not be higher than 21°C (except for heating process). Individually frozen products packaging room should be controlled below 10 °C, other products packaging process should be based on the characteristics of the product to keep the appropriate temperature and time , to prevent the cold chain interruption
- 8.2.3 It should control the internal temperature of products and exposure time during process (except for heating process). If the internal temperature of the product is above 21 °C during process, then cumulative exposure time should not exceed 2 hours; if the internal temperature of the products is between 10°C-21°C, then cumulative exposure time should not exceed 6 hours; if the internal temperature of the products is up and down at 21°C during process, then the cumulative exposure time above 21°C should not exceed 2 hours, cumulative exposure time above 10°C should not exceed 4 hours.
- 8.2.4 Pasteurization equipment should be done heat distribution test, to ensure the uniformity of heating sterilization; when necessary, sterilization time and temperature should be confirmed through heat penetration test; sterilization F value shall comply with the relevant provisions; pasteurized canned products, the double seam structure should be consistent with the canned edge sealing requirements.
- 8.2.5 For histamine formation species group, should control the temperature and time from raw materials to finished according to the characteristics of the product, when necessary, it should test the histamine level.
 - 8.2.5.1 If the temperature of environment is above 4.4°C, sometimes over 21°C, then the maximum exposure time should not exceed 4 hours when use the chilled fish as raw material; If the temperature of environment is above 4.4°C and under 21°C, the maximum exposure time should not exceed 8 hours.
 - 8.2.5.2 If the temperature of environment is above 4.4°C, sometimes over 21°C, then the maximum exposure time should not exceed 12 hours when use the chilled fish as raw material; If the temperature of environment is above 4.4°C and under 21°C, the maximum exposure time should not exceed 24 hours.

8.3 Control of water、ice、steam

- 8.3.1 The water for processing and making ice should conform GB 5749. It shall be provided with water supply system network diagram.
- 8.3.2 The residual of chlorine of processing water(ice) should be tested (when applicable) before processing, and microbes should be also regularly test for processing water (ice) , to ensure the sanitation of the processing water (ice). Testing on processing water should

be made at least twice a year by the hygienic authorities each year.

- 8.3.3 The sea water used during processing should be sanitary, must be disinfected thoroughly and detected regularly.
- 8.3.4 The make, smash, transportation and storage of the ice during processing should be under the sanitary condition.
- 8.3.5 The operation which uses steam should ensure the sufficient pressure and steam supply

8.4 Cleaning and disinfection

- 8.4.1 It should make the cleaning and disinfection plan according to the characteristics of process, and designate specified personnel to fulfil effectively, the cleaning agent and disinfectants used should comply with the relevant requirements.
- 8.4.2 Cleaning and disinfection procedures should be done on the food-contact surfaces in sufficient frequency during processing. Cleaning and disinfection must be done thoroughly on the equipment, utensils, containers, and areas etc, before and after the work every day and checked before the work.
- 8.4.3 It should use the flowed water to clean the products and utensils so avoid cross contamination.

8.5 Poisonous and hazardous substances control

- 8.4.4 To establish and execute the plan of storage and management for cleaning agents, disinfectants, pesticides and other chemical reagents, to ensure the use in the factory, workshop and laboratory effectively controlled, and used within the period of validity.
- 8.5.2 To establish designate a separate warehouse and designate specified personnel to be in charge of the lock and storage. To be packed with special container and labelled clearly.
- 8.5.3 The poisonous and hazardous substances irrelevant to the production should not be admitted into the factory.
- 8.5.4 When necessary, it should be operated by specially trained personnel according to regulations, and avoid polluting the foods, food-contact surface and packing material.

8.6 Insect and rodent control

- 8.6.1 The factory should make the control plan for insect and rodent pest and make the rodent proof diagram.
- 8.6.2 To prevent the rodent enter the workshop by the effective physical method.
- 8.6.3 To put the trap tool at place necessary and number them one by one.
- 8.6.4 It should not set the trapping and killing insect facilities above the processing area in workshop.
- 8.6.5 To check and clean all the insect and rodent trap facilities according to the plan.
- 8.6.6 If outsource the insect and rodent proof, the contracting enterprise should be qualified and contract should be signed.

9. Packing, storage and transportation

9.1 Packing

- 9.1.1 It should make the control procedure and fulfil effectively for packing material, and have conformity assessment procedures to the suppliers of packing material regularly.
- 9.1.2 Packaging container and packaging materials shall comply with the relevant standards of hygiene, should not change the sensory characteristics of aquatic products.
- 9.1.3 Packaging container and packaging materials shall have sufficient strength and not be

broken during transportation and carrying

- 9.1.4 Packing material shall not be used repeatedly, except that the package is made by easy to clean, corrosion-resistant material and has been cleaned and disinfected before using
- 9.1.5 The internal and external packing material shall be stored separately. Warehouse shall be kept sanitary drying, insect and rodent preventing
- 9.1.6 It should be marked with the information of authorized license number clearly on the packing material for traceability.

9.2 Storage

- 9.2.1 Storage should be kept clean, tidy, should not be stored health hazard items, the goods should not be stored in the same storage which may cause cross contamination or mixed odour. Should set up the mold, insect and rodent proof facilities ,and disinfected regularly.
- 9.2.2 The goods should keep a distance no less than 30cm against the storage wall, and a distance no less than 10cm against the ground, and no touch the roof, stack stored and marked clearly.
- 9.2.3 Cooling storage 、 quick-frozen storage and cold storage should be equipped with automatic temperature recording device, and have a periodic calibration. The temperature in cooling storage shall be controlled between 0°C-4°C; The temperature in cold storage shall be controlled below -18°C; The temperature in quick-frozen storage shall be controlled below -28°C.
- 9.2.4 The temperature and moisture in storage for dried products etc. shall meet the characteristics demand.

9.3 Transportation

- 9.3.1 The transportation vehicle shall comply with the relevant requirements of safety and health, clean and disinfect regularly, and keep clean. It is not allowed to mix-load with the products that may lead cross contamination.
- 9.3.2 The transportation vehicle shall be equipped refrigeration 、 thermal insulation and temperature records facilities etc. So we can keep the suitable temperature. The transportation temperature for chilled products shall be kept between 0°C-4°C; For the frozen products it shall be below -18°C.

10 Personnel hygiene

- 10.1 The personnel whom engaged in aquatic products processing and management should pass the medical examination and health training before working. The personnel should undergo a health examination every year, if necessary temporary health examination shall be effected. Persons suffering from effects of food health disease, shall leave their work from the post of food processing.
- 10.2 The personnel whom engaged in aquatic products processing and management should maintain personal hygiene, and get into the good health habit.
- 10.3 It is prohibited to bring the things no business with work into workshop; The personnel shall wear work clothes、 hat and boot and clean and disinfect the hands. The Gloves etc used in processing should be cleaned and disinfected, and keep intact without broken.
- 10.4 The work clothes shall be stored and managed concentratly, unifily clean and disinfect, unifily grant.

- 10.5 It shall distinguish the work clothes、 hat using different color or marking for clean area and non-clean area、 cooked area and uncooked area. Personnel in different processing areas should not go to other non-related areas.
- 10.6 It is prohibited that eating ,smoking and spit in dressing room, and workshop etc, and can't sneeze or cough against foods.
- 10.7 It shall restrict the irrelevant personnel in and out of workshop. Other personnel(include visitors) shall be approved before entering into the workshop and make self declaration for the health and obey the above requirements

11 Special requirements for processing vessels

11.1 Hygiene requirement for device

- 11.1.1 The area stored the aquatic products shall be separated against the machine room and dormitory and guarantee no pollution to aquatic products.
- 11.1.2 The process facilities shall not be rusty and moldy, its design shall guarantee the melting ice water not to pollute the aquatic products.
- 11.1.3 The container or tank which contains the aquatic products shall be made with material non-toxic、harmless and anti-corrosion, the surface shall be smooth and easy to be cleaned and disinfected.
- 11.1.4 It shall be equipped automatic temperature recording device and the device shall be put on the highest temperature region.
- 11.1.5 The container shall be cleaned and disinfected thoroughly before and after using.
- 11.1.6 The device shall meet the following requirements if it uses the cooling sea water to cool the aquatic products.
- 11.1.6.1 The sea water in cabin shall be injected and drained fully, and keep the temperature of sea water uniform and stable.
- 11.1.6.2 Cooling system shall guarantee to cool the mixture of aquatic products and sea water below 3°C in 6 hours, and below 0°C after 16 hours.
- 11.1.7 The fishing vessel shall meet the following conditions if it shall freeze the aquatic products at sea:
- 11.1.7.1 The frozen device can freeze the products center temperature reaching -18°C or below.
- 11.1.7.2 The temperature in cold storage shall be -18°C or below.
- 11.1.8 The living and health facilities shall be clean, the toilet shall be equipped washing and disinfecting facilities.

12 Quality management system and operation requirements

12.1 Quality management system

To construct a quality management system according to the GB/T 20941, GB/T 19538 and GB/T 19838 and ensure its effective implementation and continuous improvement.

12.2 Haccp plan

- 12.2.1 To develop and implement SSOP and the following prerequisite programs effectively for Maintenance of Processing Equipments and Facilities, Unqualified Product Control, Product Identification, Quality Traceability, Product Recall and Personnel Training.
- 12.2.2 The species and intended use of aquatic products should be taken into fully consideration during a hazard analysis process to define the prevention and control measures and

identify the CCP.

12.2.3 The Critical Limit and Operation Limit shall be operable and conform to relevant laws and regulations.

12.2.4 The HACCP system should be verified at least annually as to guarantee its validity.

12.3 Chief Executive Officer

To set and definite quality policies and objectives clearly for the corporation, equip corresponding organizations, and provide adequate resources in order to guarantee the effective implementation of the quality management system.

12.4 Quality Control department and it's staff

The enterprise shall own an independent quality control department and qualified staff that is appropriate to its processing capacity, and have needed protocols, standards, facilities and equipments for the work of sample testing . The equipments shall be calibrated and verified according to relevant standards. The enterprise shall have the capability to run basic tests such as water quality test and microbial test. Records of tests and inspections shall be kept .

12.5 Test Entrust

If the enterprise needs to entrust tests for its products, the independent laboratory shall be qualified. And a contract should be signed between the laboratory and the enterprise.

12.6 SSOP procedures

To formulate written SSOP procedures, confirm the duty of executor and the frequency of execution, and implement effective monitoring and corresponding corrective measures.

The following items shall be included in SSOPs at least:

- Safety of water (ice) that comes into contact with the food or food-contact surfaces;
- Cleaning and disinfection of the food contact surface (including equipments, gloves, clothes etc.);
- Prevention of cross contamination;
- Maintenance of hand washing, hand sanitizing, and toilet facilities ;
- Protection of products from adulteration with lubricants, fuel, pesticides, cleaning compounds, sanitizing agents, condensate, and other contaminants;
- Proper labeling,storage and use of toxic and harmful compounds.
- Health and hygiene of employees;
- Prevention and control of pests and rodents .

12.7 Internal audit and management review

Establish the internal audit system and make the internal audit at least one time every half a year. As required, make the management review at least one time per year. Set up and keep the records.

12.8 Keep records

Procedures on marking, collecting, cataloging, filing, storage, preservation and treatment should be developed for the relevant records reflecting hygiene and quality problems of products, and should be executed effectively.

All the records should be real, accurate, standard and traceable.

Records should be kept at least 2 years according to the requirement of shelf life.

13 Special clause

Under the premise of safety and sanitary of aquatic products, the products which should be processed according to traditional or religious specification can be processed according to the traditional specification or religious custom.
