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National Food Safety Standard – Production Hygienic Code for Aquatic Products

食品安全国家标准 水产制品生产卫生规范

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Foreword

This Standard replaced GB/T 20941-2007 *Good Manufacturing Practice for Fish Products Processing Factory*, and GB/T 23871-2009 *Code of Hygienic Practice for Fish and Fishery Products Processing Establishment*.

Compared with GB/T 20941-2007, and GB/T 23871-2009, this Standard has the major changes as follows:

--- Modify the standard name as “National Food Safety Standard – Production Hygienic Code for Aquatic Products”;

--- Modify the standard structure;

--- Modify the standard scope;

--- Modify and supplement the terms and definitions;

--- Emphasize the food safety control requirements against the whole production process of aquatic products like the raw materials, processing, and products storage and transportation; and make the major measures to control the biological, chemical and physical contamination;

--- Add Appendix A “Guidelines for Microbial Monitoring Procedures during the Processing Period of Aquatic Products”.

National Food Safety Standard – Production Hygienic Code for Aquatic Products

1 Scope

This Standard specifies the basic requirements and management principles for the site, facilities, personnel in the raw materials purchasing, accepting, processing, packaging, storing, transporting, and the like links.

This Standard is applicable to the production of aquatic products.

2 Terms and Definitions

The terms and definitions in GB 14881-2013 are applicable to this Standard.

2.1 Aquatic products

The processed food with fish, shrimp and crabs, cephalopods, shellfish, echinoderms, cavity intestines, algae and other edible aquatic organisms as the main raw materials.

2.2 Temporary culture

The operation process that the living aquatic products are put in clean water to breed for a certain time.

2.3 Shellfish purification

The process of capturing the live shellfish from the area consistent with the fishery industry water quality standard, then put into the natural or artificial clean seawater for a period of time, so that reduce the number of microbes in the shellfish body.

3 Site Location and Factory Environment

3.1 Site location

It shall conform to the provisions of 3.1 stipulated in GB 14881-2013.

3.2 Factory environment

3.2.1 It shall conform to the provisions of 3.2 stipulated in GB 14881-2013.

3.2.2 The irrelevant animals shall not be bred, produced and manufactured in the production area.

4 Factory and workshop

It shall conform to the relevant provisions of Clause 4 stipulated in GB 14881-2013.

5 Facilities and Devices

5.1 Facilities

5.1.1 Water supply facilities

5.1.1.1 It shall conform to the provisions of 5.1.1 stipulated in GB 14881-2013.

5.1.1.2 The processing water shall be based on the local water quality characteristics and product requirements to install water purification and disinfection facilities; if necessary, set the water storage facilities in the non-contamination area; the water storage facilities shall be made of the non-toxic, odorless, corrosion-resistant, and hard to fall off materials; facilitate to clean and disinfect regularly; meanwhile, it shall be sealed and properly protect to ensure the safety and hygiene of the processing water.

5.1.2 Drainage facilities

It shall conform to the provisions of 5.1.2 stipulated in GB 14881-2013.

5.1.3 Cleaning and disinfecting facilities

It shall conform to the provisions of 5.1.3 stipulated in GB 14881-2013.

5.1.4 Waste storage facilities

5.1.4.1 It shall conform to the provisions of 5.1.4 stipulated in GB 14881-2013.

5.1.4.2 The waste containers shall be waterproof, anti-corrosion, and anti-leakage. If using pipeline to transport the waste, the installation, maintenance and use of the pipeline shall avoid the contamination to the products.

5.1.5 Personal hygiene facilities

It shall conform to the provisions of 5.1.5 stipulated in GB 14881-2013.

5.1.6 Ventilation facilities

It shall conform to the provisions of 5.1.6 stipulated in GB 14881-2013.

5.1.7 Illumination facilities

It shall conform to the provisions of 5.1.7 stipulated in GB 14881-2013.

5.1.8 Warehouse facilities

It shall conform to the provisions of 5.1.8 stipulated in GB 14881-2013.

5.1.9 Temperature control facilities

It shall conform to the provisions of 5.1.9 stipulated in GB 14881-2013.

5.2 Devices

5.2.1 Production devices

5.2.1.1 General requirements

It shall conform to the provisions of 5.2.1.1 stipulated in GB 14881-2013.

5.2.1.2 Materials

It shall conform to the provisions of 5.2.1.2 stipulated in GB 14881-2013.

5.2.1.3 Design

5.2.1.3.1 It shall conform to the provisions of 5.2.1.3 stipulated in GB 14881-2013.

5.2.1.3.2 The design and manufacture of the devices, containers and utensils that contact the aquatic products shall be easy to drain, easy to clean, easy to disinfect, and easy to maintain.

5.2.1.3.3 The devices and tools shall be flat and smooth, avoid the significant internal angle, bulge, gap or crack, and prevent the adhesion of materials and dust.

5.2.2 Monitoring device

It shall conform to the provisions of 5.2.2 stipulated in GB 14881-2013.

5.2.3 Device maintenance and repaire

5.2.3.1 It shall conform to the provisions of 5.2.3 stipulated in GB 14881-2013.

5.2.3.2 When repairing the device, the product contamination shall be avoided; after repairing, the repairing area shall be cleaned and disinfected; take anti-rust measures against the raw material pre-treatment device.

6 Hygienic Management

6.1 Hygienic management system

6.1.1 It shall conform to the provisions of 6.1 stipulated in GB 14881-2013.

6.1.2 Special containers shall have obvious mark; the material containers in different processing stages shall not be mixed use.

6.2 Hygienic management of factory and facilities

It shall conform to the provisions of 6.2 stipulated in GB 14881-2013.

6.3 Health management and hygienic requirements for the processing personnel of aquatic products

It shall meet the requirements of relevant laws and regulations.

6.4 Pest control

It shall conform to the provisions of 6.4 stipulated in GB 14881-2013.

6.5 Waste treatment

6.5.1 Prepare the placement and treatment system for the waste raw and auxiliary material package matters and the waste that are selected during the processing period like parasite, shellfish, sea urchin shell, shrimp gut, sea cucumber lime mouth; these wastes shall be treated immediately and effectively; so that prevent the contamination against the aquatic products, aquatic product contact surface, water supply and ground.

6.5.2 The waste placement site outside the workshop shall be isolated from the food processing site; so that prevent the contamination; prevent the stench and other adverse odor to overflow and breed pests.

6.6 Work clothes management

6.6.1 It shall conform to the provisions of 6.6 stipulated in GB 14881-2013.

6.6.2 The waterproof special work clothes shall be equipped with, such as gloves, sleeves, aprons, footwear, etc.

7 Raw Materials, Food Additives and Relevant Food Products

7.1 General requirements

It shall conform to the provisions of 7.1 stipulated in GB 14881-2013.

7.2 Raw materials

7.2.1 It shall conform to the provisions of 7.2 stipulated in GB 14881-2013.

7.2.2 All raw materials come from the waters that meet the requirements of relevant national standards.

7.2.3 The water quality for temporarily culturing and transporting of seawater aquatic products and freshwater aquatic products shall meet the requirements of relevant national standards.

7.2.4 The raw materials of animal aquatic products shall meet the requirements of GB 2733; while the raw materials of algae products shall meet the requirements of GB 19643.

7.2.5 The raw materials of aquatic products taking aquatic animal viscera, eggs, skin, fins, scales, bones, shells, and other non-muscle tissue shall meet the requirements of GB 2733.

7.2.6 The dead eel, crayfish, crab, shellfish shall not be used as the raw materials for production and processing.

7.2.7 If necessary, purify the Bivalve.

7.2.8 Detect the toxins in the Bivalve, puffer fish and other aquatic product raw materials with biological toxins; accept and treat as per relevant provisions; so that ensure the safety of the raw materials.

7.2.9 When eating the raw aquatic product raw materials, the pathogens, virus, parasites and eggs shall be detected.

7.3 Food additives

7.3.1 It shall conform to the provisions of 7.3 stipulated in GB 14881-2013.

7.3.2 The use the food additives shall meet the requirements of GB 2760.

7.4 Food related products

7.4.1 It shall conform to the provisions of 7.4 stipulated in GB 14881-2013.

7.4.2 The processing water, ice making water, thawing water and steam water shall meet the requirements of GB 5749.

7.4.3 The ice manufacturing, crushing, transporting and storing during the processing period shall be performed under the hygienic condition; The placing, transporting and storing containers shall be easy to clan and prevent contamination.

7.5 Others

It shall conform to the provisions of 7.5 stipulated in GB 14881-2013.

8 Food Safety Control during the Processing Period

8.1 Product contamination risk control

8.1.1 It shall conform to the provisions of 8.1 stipulated in GB 14881-2013.

8.1.2 The quality safety management system shall be established based on the hazard analysis; take necessary food safety control measures; when performing the hazard risk assessment, fully consider the different technology characteristics of aquatic products; so that ensure the hazard prevention measures and the key control points.

8.1.3 When pre-treating, freezing, cooking drying, smoking, and pickling the raw materials, they shall perform relative isolation according to the various processing technologies ad product characteristics; so that prevent the cross contamination of the people flow, matter flow and air flow.

8.1.4 Prevent the wastewater and waste matters to cause contamination to the raw materials and products.

8.2 Biological contamination control

8.2.1 Cleaning and disinfecting

It shall conform to the provisions of 8.2.1 stipulated in GB 14881-2013.

8.2.2 Microbial control during the processing period of aquatic products

8.2.2.1 General requirements

8.2.2.1.1 It shall conform to the provisions of 8.2.2 stipulated in GB 14881-2013.

8.2.2.1.2 Determine the microbial monitoring plan for the environment and processing period according to the characteristics of aquatic products; it can be

implemented as per the requirements of Appendix A; if necessary, establish the pathogen monitoring procedure during the processing period of aquatic products.

8.2.2.1.3 When the monitoring index of aquatic products at the end of the production line is abnormal, increase the sampling frequency of the environmental microbial monitoring; meanwhile properly increase the sampling points as per the situation, and take proper corrective measures.

8.2.2.1.4 The working procedure or site that has the temperature control requirements shall install temperature indicator.

8.2.2.1.5 The operation that has the requirements for using steam shall guarantee the adequate pressure and steam supply.

8.2.2.1.6 The thawing time and temperature of raw materials of aquatic products shall be strictly controlled.

8.2.2.2 Microbial control of aquatic products with different processes

8.2.2.2.1 Refrigerated aquatic products

8.2.2.2.1.1 The processing workshop shall take the cooling measures.

8.2.2.2.1.2 The processed aquatic products shall be moved to the refrigerated environment as soon as possible, and the refrigerated room shall be equipped with temperature indicator.

8.2.2.2.2 Frozen aquatic products

8.2.2.2.2.1 Determine the freezing time and freezing temperature according to the natural state of aquatic products such as thickness, shape, production quantity and the like characteristics; ensure to form strip through the maximum ice crystal as soon as possible.

8.2.2.2.2.2 When eating the raw aquatic products, ensure the adequate cold treatment; so that ensure to kill the parasites that are harmful to the human.

8.2.2.2.2.3 When products are packaged after freezing, the package operation shall be performed in the environment where the temperature is controllable; so that ensure the center temperature of frozen product to be lower than -18°C.

8.2.2.2.3 Dry aquatic products

8.2.2.2.3.1 The pest control and dust treatment shall be done during the drying process.

8.2.2.2.3.2 The dry products shall strictly control the dry time, dry temperature, ambient humidity, so as to ensure the moisture activity of the dry products is within the

safety range.

8.2.2.2.4 Pickled aquatic products

8.2.2.2.4.1 The pickled products shall take appropriate salinity to prevent the propagation of the non-halophilic bacteria.

8.2.2.2.4.2 There shall be the device to prevent the contamination from the mosquitoes and insects.

8.2.2.2.5 Canned aquatic products

It shall ensure the adequate sterilization temperature and sterilization time.

8.3 Chemical contamination control

8.3.1 It shall conform to the provisions of 8.3 stipulated in GB 14881-2013.

8.3.2 The cleaning and disinfecting plan shall be made according to the characteristics of different aquatic products; designate special personnel to implement the plan effectively; the used detergents and disinfectants shall conform to the provisions of GB 14930.1 and GB 14930.2, respectively.

8.3.3 The contact surface of the aquatic products shall have no disinfectant residues.

8.3.4 The package materials that contact with the aquatic products shall conform to the corresponding standards; so that prevent the harmful substances to enter into the foodstuffs, and guarantee the human health.

8.4 Physical contamination control

It shall conform to the provisions of 8.4 stipulated in GB 14881-2013.

8.5 Package

8.5.1 It shall conform to the provisions of 8.5 stipulate din GB 14881-2013.

8.5.2 The package materials of frozen aquatic products shall select the materials that have good low temperature resistant and waterproof characteristics.

8.5.3 The can body of canned aquatic products shall select the corrosion-resistant materials.

9 Inspection

It shall conform to the provisions of Clause 9 stipulated in GB 14881-2013.

10 Storage and Transportation of Aquatic Products

10.1 General requirements

It shall conform to the relevant provisions of Clause 10 stipulated in GB 14881-2013.

10.2 Storage

10.2.1 The products in the warehouse shall keep a certain distance from the wall, floor and ceiling; store in different stacks; and mark clearly.

10.2.2 The interior storage warehouse shall maintain clean, tidy; and meet the requirements of food hygiene.

10.2.3 The temperature and humidity of storage warehouse shall meet the requirements of product characteristics. The refrigerated warehouse temperature shall be controlled at 0°C~4°C; while the frozen warehouse temperature shall be controlled at -18°C below.

10.3 Transportation

During the transporting process, the refrigerated aquatic products and frozen aquatic products shall take the heat-insulating and cooling measures; try to shorten the transportation time and reduce the temperature fluctuation.

11 Product Recall Management

It shall conform to the relevant provisions of Clause 11 stipulated in GB 14881-2013.

12 Training

It shall conform to the relevant provisions of Clause 12 stipulated in GB 14881-2013.

13 Management System and Personnel

It shall conform to the relevant provisions of Clause 13 stipulated in GB 14881-2013.

14 Record and Document Management

It shall conform to the relevant provisions of Clause 14 stipulated in GB 14881-2013.

Appendix A

Guidelines for Microbial Monitoring Procedures during the Processing Period of Aquatic Products

A.1 The microbial monitoring during the processing period of aquatic products shall refer to Table A.1.

Table A.1 -- Microbial Monitoring Requirements during the Processing Period of Aquatic Products

Monitoring Items		Recommended Sampling Point [a]	Recommended Monitoring Microbes [b]	Recommended Monitoring Frequency [c]	Recommended Monitoring Index Limit
Environment microbe monitoring	Contact surface of aquatic products	Aquatic product processing staff's hand, uniform, gloves, conveyor belt, instrument and other device surface that directly contact with the aquatic products	Total numbers of colony, and coil group, etc.	Verification of cleaning effectiveness shall be after the cleaning and disinfecting activities	Determine the monitoring index limit combining the actual production situation
	Contact surface adjacent to the aquatic products and contact surface of aquatic products	Device exterior surface, bracket surface, control panel, part car and other contact surface	Total numbers of colony, and coil group, etc.	Every two weeks or every month	Determine the monitoring index limit combining the actual production situation
	The ambient air in the processing area	Close to the location of the exposed products	Total numbers of colony, yeast mold [d]	Every week, every two weeks, and every month	Determine the monitoring index limit combining the actual production situation
Microbe monitoring during the processing period		The process products that the level of microbes may change during the processing period, and influence the safety of aquatic products and/or quality of aquatic product	Hygienic status indicating microbe (such as total numbers of colony, and coil group, yeast mold or	The product that is produced at the first time when the shit begins; every week (every two weeks or every	Determine the monitoring index limit combining the actual production situation

		other indicator bacteria)	month) in the continued production process	
[a] The sampling point shall be selected according to the different characteristics of aquatic products, and the actual situation of the processing period. [b] Select one or several hygienic indicator microbes to implement the monitoring according to the requirements. [c] Determine the monitoring frequency according to the specific sampling point. [d] It is applicable to the pickled and dried aquatic products.				

A.2 The treatment requirements for the microbe monitoring index doesn't conform to the situation: the monitoring results on each monitoring point shall conform to the monitoring index limit and keep stable; in case of the slight non-conformity, the sampling frequency can be increased to strengthen the monitoring; in case of the serious non-conformity, correct it immediately; meanwhile find out the problem cause; so as to determine whether it is necessary to take the corrective measures against the microbe monitoring procedures.

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