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China Announces Revised Standards on Egg products

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Report Highlights:

On September 4, 2015, China notified the WTO of the National Food Safety Standard on Egg products, issued by the National Health and Family Planning Commission (NHFPC), as SPS/N/CHN/996. The deadline for submission of final comments to China is November 3, 2015. This standard pertains to various kinds of finished product or semi-finished product made of poultry egg. The proposed date of entry is yet to be determined. Comments can be sent to China's SPS Enquiry Point at sps@aqsiq.gov.cn. The following report contains an unofficial translation of this draft measure.

Executive Summary:

On September 4, 2015, China notified the WTO of the National Food Safety Standard on Egg products, issued by the National Health and Family Planning Commission (NHFPC), as SPS/N/CHN/996. The deadline for submission of final comments to China is November 3, 2015. This standard pertains to various kinds of finished product or semi-finished product made of poultry egg. It will partially replace (GB/T 21710-2008) on Hygienic Practice for Egg Products (CAC/RCP 15-1976 (Amd.1978, 1985), IDT). The proposed date of entry is yet to be determined. Comments can be sent to China's SPS Enquiry Point at sps@aqsiq.gov.cn. The following report contains an unofficial translation of this draft measure. In addition, interested parties are also welcomed to submit comments through the U.S. SPS Enquiry Point below so that comments can be considered as part of the U.S. Government official comment submission to the WTO:

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BEGIN TRANSLATION:

National Food Safety Standard Code of Hygienic Practice for the Production of Egg Products

(Draft for comments)

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

PREAMBLE

This national standard will replace GB/T 21710-2008 Hygienic Practice for Egg Products (CAC/RCP 15-1976 (Amd.1978, 1985), IDT). In comparison with GB/T 21710-2008, the main changes in this standard are as follows:

- The title was modified to Code of Hygienic Practice for the Production of Egg Products;
- The contents in the original standard were revised according to the frame of GB 14881-2013 National Food Safety Standard: General Hygienic Regulation for Food Production.
- The repeated contents in the original standard, as compared with GB 14881, were deleted and the relevant contents in GB 14881 were quoted directly, but the special regulations on egg product in the primary standard, were reserved;
- The terms and definitions of reformed egg, desiccated egg, frozen egg and liquid egg and other eggs were added;
- The requirements of site selection and plant environment were added;
- The raw material requirements in original standard were deleted;
- The food safety control requirements in production and processing process were refined according to

different kinds of egg products;

- The requirements of product recall management, training, management system and personnel and record and document management were added;
- Annex A was added and the environmental monitoring requirements for salmonella in cleaning work area for egg product were specified.

Annex A of this standard is normative.

The former standard replaced by this standard is:

- -GB/T 21710–2008.

National Food Safety Standard

Code of Hygienic Practice for the Production of Egg Products

1. Scope

This standard specifies the hygienic practices for the production process of whole egg, egg white, yolk and other products composed of one or more kinds of poultry eggs and factory building, equipment and personnel and so on for production.

The standard is applicable to the egg product manufacturing enterprise.

2. Terms and definitions

The terms and definitions given in GB 14881 General Hygienic Regulation for Food Production are applicable to this standard.

2.1 Egg

Eggs laid by birds rose (with shell)

2.2 Egg product

Various kinds of finished product or semi-finished product made of poultry egg inclusion (whole egg, yolk or egg white only and mixture of egg white and yolk) only or through mixing it with other food material, by means of relevant processing processes, with a minimum of 50% egg content.

2.3 Reformed egg

The egg product made of poultry egg, by means of pickle, pickle with grain or marinating and other processes.

2.4 Desiccated egg

The egg product made of the whole egg, egg white or yolk of poultry egg, by means of processing, treatment (fermentation is allowed) and drying.

2.5 Frozen egg

The egg product made of the whole egg, egg white or yolk of poultry egg, by means of processing, treatment and refrigeration.

2.6 Liquid egg

The egg product made of fresh egg, by means of shelling and processing and treatment, i.e., whole egg liquid,

yolk liquid and egg white liquid.

2.7 Others

Other egg products made of poultry egg or egg products above, by means of processing process.

3. Site selection and plant environment

They shall meet the relevant regulations of GB14881.

4. Factory building and workshop

4.1 Design and layout

4.1.1 They shall meet the relevant regulations of GB14881.

4.1.2 The relevant facility and equipment adaptive to production shall be design, built and planned for the factory building and workshop, to prevent the microorganism breeding and contamination, especially for the salmonella contamination, which shall be considered in the design:

a) The raw material receiving and storage area shall be separated from the finished product processing and packaging area.

b) The separate area shall be provided for egg un-packaging and washing and finished product storage independently.

c) The optical test, shelling, pasteurization and filling areas shall be separated to prevent cross infection.

d) The optical test, shelling, pasteurization and filling areas shall be separated to prevent cross infection.

4.1.3 The factory building structure and design shall ensure an ordered egg product processing and offer the appropriate temperature conditions.

4.1.4 The work area cleanliness class shall be divided according to the production process, hygienic and quality requirements, and it is in principle divided into the common work area, cleaning work area and quasi- cleaning work area and the work areas of different cleanliness classes shall be separated effectively.

4.1.5 The reasonable restriction and control measures shall be provided for access to the cleaning work area, to avoid or reduce the microbial contamination. The measures for preventing the cross contamination shall be provided for the access of personnel, raw material, packaging material, waste and equipment and so on, to the cleaning work, e.g., providing the personnel changing room for replacement of work clothes, work shoes or shoe cover, dedicated logistics channel and waste channel, etc.

4.1.6 The cleanliness classes for various work areas shall meet the demand of egg product processing for air purification and shall be detected on a regular basis.

4.1.7 The cleaning work area shall remain dry and shall have as less water supply facility and system as possible; where it is unavoidable, the protective measures, not passing through the upper space of the production operation to prevent the secondary contamination.

4.2 Building’s interior structure and material

They shall meet the relevant regulations of GB14881.

5 Facility and equipment

5.1 Facility

5.1.1 Water supply facility

5.1.1.1 They shall meet the relevant regulations of GB14881.

5.1.1.2 Supply of water for egg product processing

The water supply facility shall meet the demand of cold water and hot water and the water supplied by it shall meet the requirements of GB 5749 Standards for Drinking Water Quality.

5.1.1.3 Supply of ice

The ice shall be made of drinkable water and shall be prevented against contamination during production, handling, storage and use.

5.1.1.4 Supply of auxiliary water for egg product

The completely independent pipeline shall be used for supply of auxiliary water (e.g., cooling water) for egg product, marked properly (e.g., by different colors) and be free from crossing with the processing water pipeline or siphon.

5.1.2 Drainage facility

They shall meet the relevant regulations of GB14881.

5.1.3 Cleaning and disinfection facilities

They shall meet the relevant regulations of GB14881.

5.1.4 Waste storage facilities

They shall meet the relevant regulations of GB14881.

5.1.5 Private sanitary facilities

They shall meet the relevant regulations of GB14881.

5.1.6 Ventilation equipment

5.1.6.1 They shall meet the relevant regulations of GB14881.

5.1.6.2 The factory building shall be well-ventilated and attention shall be paid to the area and device which will generate excessive heat, steam, unpleasant odor or other pollutant smog.

5.1.7 Lighting facilities

5.1.7.1 They shall meet the relevant regulations of GB14881.

5.1.7.2 The lighting in work room shall meet the demand of egg product production.

5.1.8 Warehousing facilities

They shall meet the relevant regulations of GB14881.

5.1.9 Temperature control facility

They shall meet the relevant regulations of GB14881.

5.2 Equipment

5.2.1 Production equipment

5.2.1.1 General requirements

5.2.1.1.1 They shall meet the relevant regulations of GB14881.

5.2.1.1.2 The operating procedure for special equipment used in production process shall be worked out.

5.2.1.2 Texture

5.2.1.2.1 They shall meet the relevant regulations of GB14881.

5.2.1.2.2 All pumps, pipelines, vessels and contact surfaces shall be made of stainless steel or other allowable materials.

5.2.1.2.3 The wooden equipment shall not be applied in shelling, pasteurization, filling or vacuum rooms.

5.2.1.2.4 The plastic material for shelling workbench shall be free from crack and scratch and be able to withstand the routine cleaning and disinfection.

5.2.1.2.5 The machine and vessel for liquid egg shall be made of stainless steel or other appropriate materials.

5.2.1.3 Design

5.2.1.3.1 They shall meet the relevant regulations of GB14881.

5.2.1.3.2 The device or instrument shall be designed to consider the egg product safety hazard and simple and complete cleaning.

5.2.1.3.3 The device or vessel for liquid egg shall be designed to consider the removal of egg composition unsuitable for further processing in the liquid egg source.

5.2.1.3.4 Any equipment for separating the egg white and yolk shall be based on the hygienic design and structure.

5.2.2 Monitoring equipment

They shall meet the relevant regulations of GB14881.

5.2.3 Equipment maintenance and repair

They shall meet the relevant regulations of GB14881.

6 Hygienic management

6.1 Hygienic management system

They shall meet the relevant regulations of GB14881.

6.2 Hygienic management of factory building and facility

6.2.1 They shall meet the relevant regulations of GB14881.

6.2.2 The workshop building, equipment, apparatus and all other physical equipment shall be well maintained and kept clean. The waste raw material shall be removed in processing on a regular basis and the adequate waste containers shall be provided. The detergent and disinfectant adopted shall not cause hazard to public health.

6.2.3 The equipment shall be cleaned and disinfected when necessary during working and at the beginning and end of daily work. No steam condensation and retention is allowed in any equipment.

6.2.4 The cleaning effect shall be checked after equipment cleaning and if it is unsatisfactory the equipment shall be cleaned again.

6.3 Health management and hygienic requirements for egg product processing personnel

6.3.1 Health management of egg product processing personnel

6.3.1.1 They shall meet the relevant regulations of GB14881.

6.3.1.2 Any personnel with infected wound, pain or infectious disease (especially for diarrhea) shall be reported to the management personnel immediately and the personnel unsuitable for working in egg product processing shall terminate the work immediately.

6.3.2 Hygienic requirements for egg product processing personnel

6.3.2.1 They shall meet the relevant regulations of GB14881.

6.3.2.2 All staff in food factory shall keep a high personal hygiene during working, including the clothes and cap, which shall meet the work requirements and remain clean.

6.3.2.3 Comply with the hygienic operating guideline and wash hands as required.

6.3.2.4 No spitting in the egg product processing area.

6.3.2.5 Take all preventive measures to prevent the contamination to egg product or composition due to foreign matters.

6.3.2.6 Deal with the minor wound and bruise properly and wear the appropriate waterproof gloves. The adequate emergency rescue equipment shall be provided to prevent the contamination to egg product due to an accident.

6.3.2.7 The gloves for egg product processing shall be clean and hygienic, remain in good conditions and made of impermeable materials.

6.3.3 Visitor

They shall meet the relevant regulations of GB14881.

6.4 Insect pest control

They shall meet the relevant regulations of GB14881.

6.5 Waste disposal

6.5.1 They shall meet the relevant regulations of GB14881.

6.5.2 The waste, including the empty eggshell and cull egg, shall be cleared by suitable vessel, conveyor belt or water channel regularly, cleared at least once a day after work and removed away from the factory building at least once a day.

6.5.3 The device and vessel for waste storage shall be cleaned and disinfected immediately after emptied and the area for placement of waste container shall be cleaned and disinfected regularly.

6.6 Work clothes management

They shall meet the relevant regulations of GB14881.

7 Food raw and auxiliary material, packaging material and food additives

7.1 General requirements

They shall meet the relevant regulations of GB14881.

7.2 Food raw and auxiliary material and packaging material

7.2.1 Procurement and acceptance requirements of food raw and auxiliary material and packaging material

7.2.1.1 Follow the relevant regulations of GB14881 for purchase of food raw and auxiliary material and packaging material.

7.2.1.2 The enterprise shall establish the supplier management system and specify the supplier selection, audit and evaluation procedures.

7.2.1.3 The enterprise shall evaluate the supplier's processes and safety measures, conduct the site assessment or monitor the process regularly if necessary and ensure that the raw material is from the non-epidemic area.

7.2.1.4 The enterprise shall control the supplier's feed and breeding sections to ensure that the purchased raw material is not contaminated by prohibited substances (tony red and melamine), pesticide residue (tetracycline, oxytetracycline and chlortetracycline), heavy metal (lead and cadmium) and pathogenic bacteria(salmonella)and detect and inspect them on a regular basis.

7.2.1.5 The enterprise shall work out the effective control measures for acceptance of raw material and packaging material to ensure it cause no potential hazard to product.

7.2.1.6 The enterprise shall check the supplier's production license and product qualification certificate and the raw material and packaging material must be subjected to acceptance prior to use.

7.2.1.7 The enterprise shall reject the egg and other raw materials containing the known toxic substance and shall reject the egg or other raw materials if the hazardous substance contained in or decomposed from the egg or other raw material cannot be removed or reduced to the acceptable level by means of normal selection and fabrication.

7.2.1.8 The enterprise shall control the proportion of broken egg strictly in the egg transport process, inspect the egg in a strict accordance with its acceptance requirements and isolate and handle the non-conforming products separately.

7.2.2 Requirements for transport and storage of food raw and auxiliary material and packaging material

7.2.2.1 The machine and vessel for transport of raw and auxiliary material and packaging material shall be kept clean, maintained well and protected to avoid contamination.

7.2.2.2 The appropriate control measures shall be taken in transport process, to ensure the integrity of raw and auxiliary material packaging and egg and the transport time shall be controlled within a certain scope.

7.2.2.3 The raw material and packaging material shall be stored separated according to their characteristics and identified and marked with relevant information and quality condition.

7.2.2.4 The raw and auxiliary material and packaging material shall be stored under the conditions of suitable temperature and humidity and shall be administrated by the specially-assigned person for check on the quality and hygienic condition on a regular basis. The degenerative or expired raw and auxiliary material and packaging material shall be cleared in time.

7.2.2.5 The delivery of cargo from storage shall follow the principle of first-in first-out and may be determined according to the characteristics of raw and auxiliary material and packaging material if necessary.

7.3 Food additives

They shall meet the relevant regulations of GB14881.

8. Food safety control in production process

8.1 Risk control of product pollution

They shall meet the relevant regulations of GB14881.

8.2 Microbial contaminant control

8.2.1 They shall meet the relevant regulations of GB14881.

8.2.2 The environmental monitoring plan shall be worked out for salmonella existing in egg product cleaning work area according to Annex A and shall be implemented effectively, and if the monitoring result shows a deviation, the appropriate correction shall be made for the control measures.

8.3 Control of chemical pollution

They shall meet the relevant regulations of GB14881.

8.4 Control of physical pollution

They shall meet the relevant regulations of GB14881.

8.5 Packaging

It shall meet the relevant regulations of GB14881.

8.6 Specific processing steps

8.6.1 General requirements

Each treatment process of the production process of egg and egg product, shall meet the respective requirements of specific processing steps and the following regulations:

8.6.2 Fresh egg separation and selection

Check the fresh egg and remove the bad egg with damaged or broken shell, crack and malformation and so on.

8.6.3 Egg feeding

It is required to check the egg feeding device on the egg tray to ensure the egg tray integrity during egg feeding, collect the egg tray and egg not fed properly and handle them correctly.

8.6.4 Egg washing and disinfection

The fresh egg shall be cleaned and disinfected as required by use of the cleaning disinfectant from qualified supplier elected, to control the detergent quality safety hazard (e.g., heavy metal). The cleaning and disinfection procedures shall be established and the disinfectant concentration shall be monitored regularly.

8.6.5 Shell breaking

The measures shall be developed for use of egg breaker to ensure the integrity of bar screen on balance bar jar and the egg breaker shall be checked regularly and maintained in time to prevent the large eggshell from falling into the balance bar jar.

8.6.6 Filtration and collection

The appropriate filter and centrifuge or other appropriate equipment shall be used for filtering the liquid egg. The appropriate mesh number of filter screen shall be selected and the corresponding control measures shall be developed to ensure the filter screen’s integrity and cleanness. Moreover, the filter screen shall be checked, cleaned and replaced on a regular basis. The cleaning shall be carried out in a strict accordance with the operating instruction and the cleaning effect shall be verified after completion of cleaning, to ensure that the subsequent product is not contaminated.

8.6.7 Pasteurization

8.6.7.1 The liquid egg shall be pasteurized according to the approved procedure and heated at a certain temperature adequate to kill the salmonella or treated by other approved methods having the same effect. Different liquid eggs (e.g., whole egg, liquid whole egg, egg white, liquid egg white, yolk and liquid yolk) shall be pasteurized according to different time (temperature) combinations, so the microbiological examination shall be carried out for the product treated by sterilization machine, to check the sterilization effect.

8.6.7.2 All liquid products shall be cooled down immediately to below 7℃ (45℉) for temporary storage if their subsequent processing is not required immediately after completion of pasteurization.

8.6.7.3 Each pasteurization operation requires a continuous record, including the pasteurization temperature and time by date, and the record shall be kept for two years for inspection purpose.

8.6.7.4 The dry egg product, which has not been subjected to pasteurization, shall be sterilized according to the approved heat treatment.

8.6.7.5 The protective measures shall be taken for each stage after pasteurization, to prevent various products being contaminated.

8.6.8 Key factor control for fresh egg process.

8.6.8.1 Greasing

The enterprise shall selected the qualified supplier for greasing on fresh egg surface and the grease used shall meet the requirements of relevant standards; Moreover, the greasing volume shall be controlled appropriately to ensure that the pathogenic bacteria does not reproduce and the fresh egg is free from grease contamination.

8.6.8.2 Candling

The controls measures shall be developed to ensure that each egg is subjected to candling, the egg sundries and bloodstain and so on are monitored and the cull egg is picked out.

8.6.9 Key factor control for liquid egg product process

8.6.9.1 Pre-cooling

The appropriate measures shall be taken for pre-cooling the filtered egg liquid to reduce its temperature to the appropriate range and restrict the growth and reproduction of microorganism in egg liquid. The ice water temperature shall be monitored during pre-cooling and in case of abnormal temperature the corresponding control measures shall be taken.

8.6.9.2 Temporary storage

The egg liquid shall be temporarily stored at the appropriate temperature and be further processed within a certain time (48 hours in general) to ensure that the pathogenic bacteria does not grow.

8.6.10 Key factor control of egg powder process

8.6.10.1 Powder spraying

The water content in egg powder shall be controlled in an appropriate range and the inlet and outlet temperatures shall be controlled during powder spraying, and the water content in egg powder shall be detected on a regular basis and the non-conforming product shall be handled properly.

8.6.10.2 Screening

The relevant control measures shall be developed to ensure the integrity and cleanness of screen mesh. The screen mesh shall be checked for integrity and shall be repaired or replaced if damaged, to prevent product contamination.

8.6.10.3 Egg powder thermal treatment

The temperature in thermal treatment room and egg powder center shall be monitored and the thermometer shall be calibrated on a regular basis.

8.6.11 Key factor control of reformed egg product process

8.6.11.1 Dosing

Use the calibrated platform scale to weigh various seasoners, assign special person to re-check it, monitor the additive dosage in dosing and implement it in a strict accordance with the relevant regulations of GB2760 Standards for Uses of Food Additives, to ensure that it is within the appropriate range.

8.6.11.2 Shelling

The boiled egg shall be cooled down to below a certain temperature prior to shelling and the appropriate measures (e.g., manual shelling) shall be taken for the egg not shelled completely by the sheller to ensure the boiled egg has no eggshell on the surface. The egg after shelled shall be marinated within a certain period of time; otherwise, it shall be stored under the appropriate temperature conditions.

8.6.11.3 Marinating

The egg shall be marinated according to the specified operating steps, the marinating time and temperature shall be monitored and the thermometer and timer shall be calibrated regularly to ensure the marinating under the appropriate temperature and time.

8.6.11.4 Drying

The egg shall be dried within a certain period of time after marinating, with drying temperature and time monitored during drying to ensure that the spiced egg has a dry surface and meets the specified requirements. The egg shall cool down to a certain temperature after drying, prior to packaging.

8.6.11.5 Vacuum soft packaging

The packaging material shall be sterilized appropriately prior to packaging and the parameters of vacuum packaging machine shall be monitored during packaging, to ensure that they do not deviate from the limit values. Moreover, the vacuum packaging machine shall be cleaned and disinfected regularly and maintained properly. The vacuum soft packaging seal shall be monitored to ensure it is level and is free from air leakage, and the appropriate measures shall be taken for handling the non-conforming product in a reasonable way.

8.6.11.6 High temperature sterilization

The vacuum-packed product shall be sterilized according to the specified operating procedure and the sterilization equipment temperature and pressure and sterilization time shall be monitored to ensure the sterilization parameters do not exceed the limit values. The product after sterilized shall be cooled down to room temperature prior to packaging.

9. Inspection

They shall meet the relevant regulations of GB14881.

10. Product storage and transport

10.1 They shall meet the relevant regulations of GB14881.

10.2 Different egg product shall be stored in the appropriate warehouses, placed according to the identification and marked with the product date of manufacture, specification and quantity, etc. The warehouse temperature and humidity shall be monitored to ensure the product is stored at the appropriate temperature and humidity.

10.3 The barrel or box for transport of liquid egg product shall be made of stainless steel and appropriate material and be designed for convenience in cleaning and adequate drainage and shall not be used for other purposes. The transport shall not break from the cold chain, with temperature controlled within 0℃-4℃ (below 0℃ for frozen product), and the temperature control device shall be placed in the transport container and shall be calibrated and maintained regularly.

10.4 The pipeline for convey the liquid egg product shall be designed reasonably, made of the appropriate material and cleaned and disinfected prior to use.

11. Product recall management

It shall meet the relevant regulations of GB 14881.

12. Training

It shall meet the relevant regulations of GB 14881.

13. Management system and personnel

They shall meet the relevant regulations of GB14881.

14. Record and document management

14.1 Record management

They shall meet the relevant regulations of GB14881.

14.2 Document management

They shall meet the relevant regulations of GB14881.

Annex A

Guide for environmental monitoring in salmonella in cleaning work area for egg product

A.1 Salmonella is harmful to both livestock and human by infection through livestock. As the main carrier of salmonella, egg and egg product is the main cause of food safely affair, so the salmonella in production environment shall be monitored to confirm whether the hygienic control procedure is effective, and in case of any deviation, the manufacturing enterprise shall take the corrective measures. The basic data concerning hygienic condition can be obtained and the trend variation can be traced by continual monitoring. The quantity of salmonella in finished product may be decreased by reducing the quantity of it in the environment.

The environmental monitoring plan shall be developed to prevent the contamination accident and limitation of microorganism and sampling and inspection. The monitoring plan can be used as a food safety management tool for evaluation of hygienic conditions in cleaning work area (dry area) and as a basic procedure for hazard analysis and critical control point (HACCP).

A.1.1 When the monitoring plan is developed, consideration shall be given to ecological characteristic and other factors below:

The salmonella is rare in dry environment, but the monitoring plan shall be developed to prevent its access; Moreover, it is required to evaluate the effectiveness of control measures in the production environment and guide the relevant personnel to prevent the salmonella, if discovered by inspection, from spreading.

A.2 Consideration shall be given to factor A.2.1 product category and technical process, for design of sampling plan.

The demand and scope of sampling plan shall be determined according to the product feature, consumer age and health condition. In this standard, the salmonella is specified as the pathogenic bacteria for various egg products.

Emphasis shall be placed in monitoring the areas in which the microorganism is easy to harbor and breed, e.g., cleaning work area in dry environment. Special attention shall be paid to the junction between the adjacent areas of low hygienic level and to the places close to the production line and equipment and easy to be contaminated. Priority shall be given to monitoring the areas with known or possible contamination.

A.2.2 Sample variety

The monitoring plan shall cover the two kinds of samples below:

A.2.2.1 Sampling from the surface not contacting the food, e.g., external section of equipment, ground around the production line, pipeline and platform. In these cases, the pollution risk level and contaminant content will determine the location and design of production line and equipment.

A.2.2.2 Sampling from the surface directly contacting the food, e.g., egg liquid transport pipeline and sheller surface. The existence of salmonella on food contact surface indicates a high risk of food contamination.

A.2.3 Target microorganisms

Salmonella is the main target microorganism.

A.2.4 Sampling point and sample size

The sample size shall change with the process and production line complexity.

The sampling point shall be located in the place where the microorganism may harbor or access to cause contamination. The sampling point may be determined according to relevant document literatures, experience and professional knowledge or historical data collected in the process of factory pollution survey. The sampling point shall be evaluated on a regular basis. In case of heavy maintenance and construction activity or bad hygienic conditions, the sampling points shall be increased in the monitoring plan.

The sampling plan shall be comprehensive and representative, with consideration given to the different production shifts and different periods in these shifts, for scientific and reasonable sampling. The sampling shall be carried out p prior to starting up the machine, to verify the effect of the cleaning measures.

A.2.5 Sampling frequency

The sampling frequency shall be decided by the factors in A.2.1 and determined according to the existing data concerning existence of microorganism in various areas. Where such data is unavailable, adequate data shall be collected, to determine the reasonable sampling frequency, including long-term collection of salmonella occurrence conditions.

The frequency of implementation of environmental monitoring plan shall be adjusted according to the detection result and contamination risk level. If it is detected that the quantity of pathogenic bacteria in finished product increases, the environmental sampling and investigation and sampling shall be strengthened to determine the contamination source. In case of increase of contamination risk (e.g., maintenance, construction or after wet cleaning), the sampling frequency shall also be increased.

A.2.6 Sampling tool and method

The sampling tool and method shall be selected according to the surface type and sampling spot, e.g., scrape of surface residue or direct use as the sample, and for the large surface, the sampling can be carried out through wiping by sponge (or swab).

A.2.7 Analytical method

The analytical method shall detect the target microorganisms effectively, with the acceptable sensitivity and relevant records. Many samples may be mixed for detection under the condition that the sensitivity is ensured. If the detection result is positive, the location of positive sample shall be further determined. The genetic technology, if necessary, can be used for analysis of information concerning salmonella source and egg product contamination path.

A.2.8 Data management

The monitoring plan shall cover the data record and evaluation system, e.g., trend analysis. The data shall be evaluated continually, for appropriate modification and adjustment of monitoring plan.

A.2.9 Corrective measures of positive result

The monitoring plan is intended for discovering whether the target microorganism exists in the environment. The acceptance criteria and countermeasures shall be developed prior to establishment of monitoring plan. The monitoring plan shall specify the concrete action measures and illuminate the corresponding causes. The relevant measures shall include but not limited to: no action (no contamination risk), promotion of cleaning, contamination source tracing (addition of environmental test), and evaluation of hygienic measures, sample detaining and product testing.

The manufacturing enterprise shall develop the action measures for salmonella detected, so as to deal with the salmonella content over standard properly. The hygienic procedure and control measures shall be evaluated. When the salmonella is detected, the corrective action shall be taken immediately, and the corrective action shall be decided by the according to the possibility of product contamination by salmonella.