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China Announces New Standards on Fermented Vinegar

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Approved By:

Jennifer Clever

Prepared By:

Chu Liwen

Report Highlights:

On September 4, 2015, China notified the WTO of the National Food Safety Standard on Fermented Vinegar, issued by the National Health and Family Planning Commission (NHFPC), as SPS/N/CHN/992. The deadline for submission of final comments to China is November 3, 2015. This standard pertains to vinegar production, and it specifies the essential requirement and management rule for site, facility and personnel involved in raw materials procurement, processing, packaging, storage and transport and so on in vinegar production process. 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 Fermented Vinegar, issued by the National Health and Family Planning Commission (NHFPC), as SPS/N/CHN/992. The deadline for submission of final comments to China is November 3, 2015. This Standard partially replaces (GB 8954-88) on Hygienic Specifications of Vinegar Factory and pertains to vinegar production, and it specifies the essential requirement and management rule for site, facility and personnel involved in raw materials procurement, processing, packaging, storage and transport and so on in vinegar production process. 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:

Joe Hain

Joe.Hain@fas.usda.gov

International Regulations and Standards Division

USDA Foreign Agricultural Service

Washington, DC, 20250

BEGIN TRANSLATION:

National Food Safety Standard Hygienic Specification for Vinegar Production

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

PREAMBLE

This national standard will replace GB 8954-88 Hygienic Specifications of Vinegar Factory.

In comparison with GB 8954-88, the main changes in this standard are as follows:

- The title was modified;
- The standard structure was modified;
- The terms and definitions were added;
- The related requirements of raw materials procurement, acceptance, transport and storage, product tracing and recall and record and document were added;
- Annex A “guide for microbiological monitoring of vinegar production and processing process” was added;
- Annex B “hygienic requirements for self-cultured strain” was added.

National Food Safety Standard

Hygienic Specification for Vinegar Production

1 Scope

This standard specifies the essential requirement and management rule for site, facility and personnel involved in raw materials procurement, processing, packaging, storage and transport and so on in vinegar production process.

This standard is applicable to vinegar production.

2 Terms and definitions

2.1 The terms and definitions given in GB 14881 are applicable to this standard.

2.2 Vinegar

A kind of liquid acid condiment brewed, via microbial fermentation, from various materials containing starch and sugar or edible alcohol in a separate or mixed way.

3 Site selection and plant environment

3.1 Site selection

It shall meet the relevant regulations of GB 14881.

3.2 Plant environment

3.2.1 It shall meet the relevant regulations of GB 14881.

3.2.2 It is forbidden to raise the poultry and livestock and other animals in the plant area.

4 Factory building and workshop

4.1 Design and layout

4.1.1 It shall meet the relevant regulations of GB 14881.

4.1.2 According to the demand of vinegar production process, the raw material pretreatment, self-cultured strain, saccharification, liquor production, vinegar production, vinegar spraying/, squeezing and decoloring, parched rice color, solid-substrate fermentation, vinegar exposure to sun, ageing, filtration, mixing, sterilization, storage, bottle washing and filling and other processes can be set. The area of production places for various processes shall meet the production need. The production areas of raw material pretreatment, self-cultured strain, parched rice color and solid-substrate fermentation and other processes shall be separated. The filling room belongs to the cleaning work area and other sites belong to the quasi-cleaning work area.

4.1.3 The inspection room, raw material warehouse, packaging material warehouse, finished product warehouse, changing room and toilet and so on shall be provided and the sites for storage and the like for serving the production are called as the common work area. The food additives shall be placed in the separate and dedicated storage facility respectively.

4.1.4 The filling room shall be provided with the changing, hand washing and disinfection as well as air disinfection facilities; and if necessary, the boots and shoes disinfection facilities may be provided.

4.1.5 For those provided with the culturing apartment (room), their design and layout shall meet the relevant regulations in Annex B.

4.1.6 The field inspection site shall be separated to the production area in the production process.

4.2 Building's interior structure and material

4.2.1 Interior structure

It shall meet the relevant regulations of GB 14881.

4.2.2 Ceiling

It shall meet the relevant regulations of GB 14881.

4.2.3 Wall

4.2.3.1 It shall meet the relevant regulations of GB 14881.

4.2.3.2 The production workshop wall shall be finished with the non-toxic, anticorrosive, mould proof, smooth, easy cleaning, nonabsorbent, watertight and light-colored material, and the finish height shall not be lower than 1.5m wainscot and the filling room shall be finished to the top.

4.2.3.3 The appropriate arc shall be reserved between walls, wall and ceiling as well as wall and ground in the cleaning work area, for convenience in cleaning.

4.2.4 Door & Window

4.2.4.1 It shall meet the relevant regulations of GB 14881.

4.2.4.2 The vent of production place shall be provided with the measures for insect pest protection.

4.2.5 Ground

4.2.5.1 It shall meet the relevant regulations of GB 14881.

4.2.5.2 The reasonable gradient shall be prepared for the ground of the production place, to achieve a smooth surface without stagnant water.

5 Facility and equipment

5.1 Facility

5.1.1 Water supply facility

It shall meet the relevant regulations of GB 14881.

5.1.2 Drainage facility

5.1.2.1 It shall meet the relevant regulations of GB 14881.

5.1.2.2 The arc pipe shall be used as the drainage pipeline for production workshop.

5.1.3 Cleaning and disinfection facility

5.1.3.1 It shall meet the relevant regulations of GB 14881.

5.1.3.2 According to the process requirements, the bottle washing room shall be provided with the empty bottle disinfection, flushing and cleaning facilities.

5.1.3.3 The workshop shall be provided with the cleaning and disinfection facilities for air (except for vinegar production process), equipment, facility and tools and instruments in a rational way. The adequate hot water source shall be provided if necessary according to the production need.

5.1.4 By-product (vinegar residue and vinasse) treatment facilities

- 5.1.4.1 The by-product (vinegar residue and vinasse) storage site and facility adaptive to the production scale and obvious mark shall be provided and be separated from the production workshop.
- 5.1.4.2 Made of the material easy for cleaning and disinfection. The structure shall be tight enough to prevent the leakage and access of insect pest.
- 5.1.5 Waste storage facility
 - 5.1.5.1 It shall meet the relevant regulations of GB 14881.
 - 5.1.5.2 The intensively waste storage site and facility shall be provided in the appropriate place outside of the production workshop and shall be provided with the obvious mark.
- 5.1.6 Private sanitary facility
 - 5.1.6.1 It shall meet the relevant regulations of GB 14881.
 - 5.1.6.2 The rest room shall be provided in the changing room of the production workshop and shall its passageway shall not face the production workshop door directly. The flushing apparatus, foot-pedal/ inductive handwashing facility as well as good ventilation and lighting facilities shall be provided in the rest room.
- 5.1.7 Ventilation equipment
 - 5.1.7.1 It shall meet the relevant regulations of GB 14881.
 - 5.1.7.2 The production workshop and warehouse shall be well-ventilated.
 - 5.1.7.3 The mechanical ventilation inlet shall be equipped with the anticorrosive on-off protective cover easy for cleaning and replacement and be kept away from the pollution source and vent.
- 5.1.8 Lighting facilities
 - 5.1.8.1 It shall meet the relevant regulations of GB 14881.
 - 5.1.8.2 The lighting of bottle inspection site shall meet the requirements of bottle inspection process.
- 5.1.9 Warehousing facilities
 - 5.1.9.1 It shall meet the relevant regulations of GB 14881.
 - 5.1.9.2 The grain storage warehouse shall be shady and cool, ventilated, dry and clean , and be provided with the mold proof, mold proof, insect prevention, rat proof and sparrow prevention facilities, etc.
 - 5.1.9.3 The appropriate pollution prevention facility shall be provided in the packaging container storage site.
 - 5.1.9.4 The food additives shall be stored separately, packaged in a secure way and labeled clearly.
 - 5.1.9.5 The storage container and site, adaptive to the vinegar process requirement shall be provided.
- 5.1.10 Temperature control facility
 - 5.1.10.1 It shall meet the relevant regulations of GB 14881.
 - 5.1.10.2 The self-cultured strain, alcoholization, acetification and other processes shall be provided with the ventilation, cooling and thermal insulation facilities, to meet the demand of technological procedure.
- 5.2 Equipment
 - 5.2.1 Production equipment

5.2.1.1 General requirements

It shall meet the relevant regulations of GB 14881.

5.2.1.2 Texture

5.2.1.2.1 It shall meet the relevant regulations of GB 14881.

5.2.1.2.2 The tubular product and pipe fitting for vinegar transfer shall be corrosion resistant, non-toxic and odorless.

5.2.1.3 Design

5.2.1.3.1 It shall meet the relevant regulations of GB 14881.

5.2.1.3.2 The raw material pretreatment, self-cultured strain, saccharification, liquor production, vinegar production, vinegar spraying/ squeezing and decoloring, parched rice color, solid-substrate fermentation, vinegar exposure to sun, ageing, filtration, mixing, sterilization, storage, bottle washing, filling equipment and so on capable of guaranteeing the food safety shall be selected according to the different production process, production capacity and packaging form, and the automatic or semi-automatic filling equipment, other than the manual operation, shall be adopted.

5.2.1.3.3 The distilling kettle (pot) or other sterilization equipment, fermentation tank (jar), storage tank (barrel) and tubular product for liquid material transfer, pipe fitting and other vessel and equipment shall be free from dead angle and be convenient for cleaning and maintenance.

5.2.2 Monitoring equipment

5.2.2.1 It shall meet the relevant regulations of GB 14881.

5.2.2.2 The thermometer or automatic temperature controller shall be installed on the self-cultured strain, saccharification, and fermentation and sterilization equipment and so on. Where the common glass thermometer is applied, the appropriate measures shall be taken to prevent the product pollution due to its breakage.

5.2.3 Equipment maintenance and repair

5.2.3.1 It shall meet the relevant regulations of GB 14881.

5.2.3.2 Under the normal conditions, the factory building, equipment, other mechanical facilities and water supply and drainage system, shall be subjected to the complete maintenance and repair at least once a year.

6 Hygienic management

6.1 Hygienic management system

It shall meet the relevant regulations of GB 14881.

6.2 Hygienic management of factory building and facility

It shall meet the relevant regulations of GB 14881.

6.3 Health management and hygienic requirements for food processing personnel

6.3.1 Health management of food processing personnel

It shall meet the relevant regulations of GB 14881.

6.3.2 Hygienic requirements for food processing personnel

6.3.2.1 It shall meet the relevant regulations of GB 14881.

6.3.2.2 The staff in finished product filling workshop shall wear the clean work clothes, cap and mask.

6.3.3 Visitor

It shall meet the relevant regulations of GB 14881.

6.4 Insect pest control

It shall meet the relevant regulations of GB 14881.

6.5 Disposal of the waste and by-product

6.5.1 It shall meet the relevant regulations of GB 14881.

6.5.2 The waste in the vinegar production workshop and other work places shall be cleared , and collected in the sewage facility regularly and be cleared away the plant area in time.

6.5.3 The by-product (vinegar residue and vinasse) shall be transported from the production workshop in time and stored in the by-product site.

6.5.4 The waste and by-product storage site shall be cleaned and disinfected on a regular basis.

6.6 Work clothes management

It shall meet the relevant regulations of GB 14881.

7 Food material, food additives and food-related product

7.1 General requirements

It shall meet the relevant regulations of GB 14881.

7.2 Food material

7.2.1 The procurement, transport and storage of food material shall meet the relevant regulations of GB 14881.

7.2.2 Conduct the assessment of raw material supplier and ask for the valid product qualification certificate for incoming raw and auxiliary material.

7.2.3 The food material shall meet the requirements of national food safety standards and relevant quality standard and so on.

7.2.4 The enzyme and koji seeds strain and other starters shall meet the requirements of production process requirements; and the selected strain shall be purified and identified on a regular basis (except for the traditional koji-making technique). The enzyme and koji seeds strain and other starters shall meet the requirements of production process requirements; and the selected strain shall be purified and identified on a regular basis (except for the traditional koji-making technique). The hygienic requirements for self-cultured strain shall meet the relevant regulations of Annex B.

7.3 Food additives

It shall meet the relevant regulations of GB 14881.

7.4 Food-related product and others

It shall meet the relevant regulations of GB 14881.

8 Food safety control in production process

8.1 Product contamination risk control

8.1.1 It shall meet the relevant regulations of GB 14881.

8.1.2 It is encouraged to use the HACCP principle for management of the critical control points in vinegar processing process and establishment and implementation of production process procedure and post operation procedure.

8.1.3 According to the product feature and process requirement, the critical control points can be monitored, including the pre-treatment of raw and auxiliary material, self-cultured strain, sterilization, filling and used of food additives and other processes and posts.

8.1.4 In case of any abnormal condition discovered by production monitoring, it is required to find out the cause and make a timely correction and record of it.

8.2 Bio contamination control

8.2.1 It shall meet the relevant regulations of GB 14881.

8.2.2 Refer to regulation in Annex A for microbiological monitoring in vinegar production and processing process.

8.2.3 It is required to clean and disinfect the production equipment, facility, pipeline and tools and instruments prior to production.

8.2.4 The sterilization process temperature and time shall ensure the sterilization effect. The necessary measures shall be taken for the intermediate product after sterilized, to prevent contamination.

8.2.5 The empty bottle, barrel, bag and cover and other packaging articles for filling, shall be provided with the cleaning and disinfection measures and meet the related hygienic requirements.

8.2.6 The surface of objects in the filling workshop shall be cleaned and disinfected on a regular basis to prevent the dirt retention, condensate and mold growth.

8.2.7 The production equipment, facility, tools and instruments, operating floor and pipeline and so on shall be cleaned after completion of production.

8.2.8 The production place, wall and drainage ditch shall be cleaned on a regular basis and disinfected if necessary (except for the vinegar production process).

8.2.9 The tap for hand washing and hand drying apparatus shall be kept in normal use and the disinfectant shall be prepared by specially-assigned person in accordance with the specification to ensure the disinfection effect.

8.2.10 The staff of non-cleaning work area is not allowed to enter into the cleaning work area without permission and the staff of cleaning work area shall wear the work clothes, wash hands and conduct disinfection prior to entering into the cleaning work area.

8.3 Chemical contamination control

8.3.1 It shall meet the relevant regulations of GB 14881.

8.3.2 The equipment, tools and instruments and operating floor shall be treated by detergent or disinfectant and then cleaned completely by production water for removal of residual, prior to use in production.

8.3.3 The tubular product, pipe fitting and storage container and facility directly contacting vinegar shall not adopt the texture possibly result in the leakage of heavy metal and plasticizer and other toxic and harmful

substances.

8.4 Physical contamination control

8.4.1 It shall meet the relevant regulations of GB 14881.

8.4.2 The filter screen on production workshop vent shall be integral and ensure the clean production environment.

8.4.3 The appropriate measures shall be taken for raw material selection and removal of impurity in raw material pretreatment phase.

8.4.4 The effective measures shall be taken to prevent, the empty bottle containing glass fragments and mental foreign bodies and other sundries, from entering into the production line.

8.5 Packaging

8.5.1 It shall meet the relevant regulations of GB 14881.

8.5.2 The packaging container shall meet the requirements of relevant regulations in relevant regulations and shall be inspected prior to use.

8.5.3 The packaging container shall be kept clean prior to filling. The recycled bottle shall be treated by soaking, washing by alkaline water, soaking by clean water, flushing by clean water, draining off, disinfection and empty bottle inspection and other procedures.

8.5.4 The clean packaging container shall be inspected by specially-assigned person and be conveyed the filling process in the shortest distance.

8.5.5 The product shall be sealed tightly by the material of good sealing property and shall be free from air leakage and liquid leakage.

9 Inspection

9.1 It shall meet the relevant regulations of GB 14881.

9.2 The inspection item, limit standard, sampling and inspection method of raw material, intermediate product and finished product, shall be determined according to the actual production process demand.

9.3 The product shall be subjected to random sampling for inspection in accordance with the inspection item specified in the standard prior to delivery.

9.4 The sample shall be reserved for each batch of product and the amount of reserved sample shall meet the demand of inspection; Moreover, the reserved sample shall be labeled by variety, batch number and category and be stored in special warehouse and the reserved sample shall be kept for a period not shorter than the product shelf life or 2 years for those without shelf life.

9.5 The instrument and equipment, for inspection, shall be calibrated and verified regularly, to ensure the accuracy of inspection data.

10 Food storage and transport

It shall meet the relevant regulations of GB 14881.

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

13.1 It shall meet the relevant regulations of GB 14881.

13.2 The management personnel shall receive the professional training; have the relevant work experience in food safety and mastered relevant laws and regulations and rules, etc.

14 Record and document management

It shall meet the relevant regulations of GB 14881.

Annex A

Guide for microbiological monitoring of production and processing process

A.1 General Requirements

A.1.1 It shall meet the relevant regulations in Annex A of GB 14881.

A.1.2 The annex specifies key points for microbiological monitoring in vinegar production and processing process.

A.1.3 The food safety shall be ensured by monitoring the target microorganisms in vinegar production and processing process, including the environmental microorganism monitoring and process product microbiological monitoring.

A.1.4 The monitoring results in various monitoring points shall meet the monitoring index limit and remain stable. In case of a minor non-conformity, the monitoring shall be strengthened by increase of sampling frequency and other measures; and in case of a major non-conformity, it is required to corrective measures and find out the causes immediately.

A.2 Environmental microorganism monitoring

A.2.1 Monitoring items: vinegar contact surface, contact surface adjacent to vinegar or vinegar contact surface and ambient air.

A.2.2 Monitored microorganism: total bacteria, coliform and other microorganisms required by vinegar production. See table A.1 for details.

A.2.3 Monitoring frequency: once two weeks or once a month, the monitoring frequency may be increased as required by vinegar production. See table A.1 for details.

A.2.4 Monitoring index limit: to be determined in accordance with the actual production conditions.

A.2.5 Monitoring sampling: Smear sampling or direct random sampling.

Table A.1 Environmental microorganism monitoring in vinegar production and processing process

Monitoring items	Monitoring sampling point	Monitored microorganism	Monitoring frequency ^a	Monitoring index limit
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Vinegar contact surface	The filling machine mouth and packaging container (empty bottle/, barrel, bottle/ barrel head).	Total bacteria and coliform	The cleaning effect shall be verified after cleaning and disinfection. A minimum of once two weeks for other monitoring indexes.	The monitoring index limit shall be determined according to the actual production condition.
Contact surface adjacent to vinegar or vinegar contact surface.	Filling personnel's hands, work clothes, product conveyor belt and control panel directly contact to the filling personnel's hands.	Total bacteria and coliform	A minimum of once two weeks	The monitoring index limit shall be determined according to the actual production condition.
Ambient air	Filling room and bottle washing room	Total bacteria	A minimum of once two weeks	The monitoring index limit shall be determined according to the actual production condition.
a The monitoring frequency is adjustable according to the monitoring result				

A.3 Microbiological monitoring of process product

A.3.1 Monitoring items: intermediate product.

A.3.2 Monitored microorganism: total bacteria, coliform and other microorganisms required by vinegar production. See table A.2 for details.

A.3.3 Monitoring frequency: once two weeks, the monitoring frequency may be increased as required by vinegar production. See table A.2 for details.

A.3.4 Monitoring index limit: See table A.2 for details.

A.3.5 Monitoring sampling: Direct random sampling.

Table A.2 Microorganism control in vinegar production and processing process

Monitoring items	Monitoring sampling point	Monitored microorganism	Monitoring frequency ^a	Monitoring index limit
Intermediate product	Prior to filling and after sterilization.	Total bacteria and coliform	A minimum of once two weeks	Total bacteria: n=5,c=2, m=1000CFU/ml, M=10000 CFU/ml Coliform: n=5,c=2, m=10 CFU/ml, M=100 CFU/ml
^a The monitoring frequency is adjustable according to the monitoring result				

Annex B

Hygienic requirements for self-cultured strain

B.1 Requirements of microorganism culturing apartment (room)

B.1.1 The microorganism culturing apartment (room) adaptive to the production capacity shall be provided; the design and facility of culturing apartment (room) shall meet the technical requirements of aseptic operation; the culturing apartment (room) shall be provided with the bio clean room and super clean bench or

aseptic operating floor); And the channel with buffer room and complete disinfection and isolation facility shall be provided.

B.1.2 The design and facility of koji-making workshop shall meet the process technical requirements of microbe cultivation and shall be adaptive to the production capacity. Door & window structure shall be convenient for adjustment of indoor temperature and humidity and the ground and wall shall adopt the impermeable material convenient for cleaning and disinfection; and the ceiling of workshop adopting open koji-making shall be dust proof, mold proof, damp proof and condensate proof and have the solid surface coating free from fall-off.

B.2 Strain requirement

B.2.1 The strain shall be strictly inspected prior to use in production, to ensure its activity and un-contamination by other infectious microbes.

B.2.2 The equipment and technical capacity of separation, breeding and purification of the bacterial strain used shall be provided, and the strain shall be kept in the low-temperature and dry conditions to prevent the variation.

B.2.3 The degraded, mutant and contaminated strain shall be separated, rejuvenated or purchased, to ensure the excellent and strong strain.

B.2.4 The new strain adopting the non-traditional technology shall meet the relevant national regulations.

B.3 Requirement for preparation of pure microbial starter culture

B.3.1 The cultivation room, koji room, pure microorganism koji-making, yeast wine and acetic bacteria culture room (tank) shall be cleaned and disinfected on a regular basis. All culture vessels, containers and equipment, tools and instruments and materials shall be disinfected prior to use.

B.3.2 The koji operation shall be carried out under aseptic condition and different kojis shall be cultured in different koji room, for preventing mutual contamination. The culture temperature and humidity in koji room shall be strictly controlled according to the specific process requirement for strain culture.

B.3.3 The inoculation operation shall be carried out under aseptic conditions.

B.3.4 The subculture and inoculation expansion operation of koji-making, yeast wine and acetic bacteria shall be carried out under the accurate culture temperature and be protected against infectious microbe contamination.

B.4 Requirement for preparation of multiple microorganism saccharification fermentation starter

B.4.1 The koji-making processing and operation site, equipment, tools and instruments and culture room shall be cleared according to the specific process requirement prior to use.

B.4.2 The koji-making shall be subjected to dosing, fabrication and culture according to the specific process technical requirements and in a strict accordance with the culture temperature and humidity required.