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Report Highlights:

On January 30, 2022, China's State Council released two updated technical guidelines for preventing and controlling COVID-19 in cold-chain food. The Technical Guidelines for the Prevention and Control of Novel Coronavirus in Cold Chain Food Production and Operation (Second Edition) and the Cold Chain Food Production and Operation Process Covid Control and Disinfection (Second Edition) establish guidelines for producers and operators involved in cold-chain food, including production, loading and unloading, transportation, storage, and sales. In September 2020, the PRC notified emergency measures to the WTO regarding China's cold chain food and alleged concerns over COVID-19.

Summary

On January 30, 2022, China's State Council released two updated technical guidelines for preventing and controlling COVID-19 in cold-chain food. The guidelines establish required and best practices for producers and operators involved in cold-chain food, including imported cold-chain food. Expansive in scope, the guidelines cover production, loading and unloading, transportation, storage, and sales.

Updates to the *Technical Guidelines for the Prevention and Control of Novel Coronavirus in Cold Chain Food Production and Operation (Second Edition)* include an increased focus on monitoring and testing cold-chain workers, including up to daily testing of "Personnel in high-risk positions" (see attachment 1). Updates to the *Cold Chain Food Production and Operation Process Covid Control and Disinfection (Second Edition*) include a section on commonly used low-temperature disinfectants in cold chain food production and operation and methods of use (see attachment 2).

Despite referencing the United Nations Food and Agriculture Organization (UNFAO) Guidance for preventing transmission of COVID-19 within food businesses (also available in Chinese), which concludes "neither food nor food packaging is a pathway for the spread of viruses causing respiratory illnesses, including SARS-CoV-2", the guidelines often focus on the handling of food and packaging, particularly imported cold-chain food and packaging, as presenting a serious risk for virus transmission.

Note: Updates to the Guidelines are colored in red text.

The recent, updated information from the State Council was distributed to several diplomatic missions in China by the General Administration of Customs of the People's Republic of China (GACC) Import and Export Food Safety Bureau on February 17, 2022. GACC previously notified emergency measures to the World Trade Organization in September 2020 with Announcement No. 103 (see: G/SPS/N/CHN/1173).

BEGIN TRANSLATION

Attachment 1

The Technical Guidelines for the Prevention and Control of Novel Coronavirus in Cold Chain Food Production and Operation (Second Edition)

1. Basis and Scope of Application

In order to standardize and guide the normal operation of cold chain food related units and employees during the normalization of the prevention and control of the new corona virus epidemic, the main responsibility for the prevention and control of production and operation shall be implemented in accordance with the "New corona virus in meat processing enterprises" issued by the State Council in response to the joint prevention and control mechanism of the new crown pneumonia epidemic Guidelines for Epidemic Prevention and Control [2020] No. 216 of Joint Prevention and Control Mechanism), Technical Guidelines for Prevention and Control of New Coronary Pneumonia Epidemics in Agricultural Trade (Market Trade) Market (No. 223 of Joint Prevention and Control Mechanism [2020]), Coronavirus Pneumonia Prevention and Control Plan (Eighth Edition)" (Joint Prevention and Control Mechanism [2021] No. 51), "Notice of the State Council's Joint Prevention and Control Mechanism for New Coronavirus Infection Pneumonia Epidemic on Strengthening the Prevention and Control of New Coronary Pneumonia Epidemic in Port Cities" (Guoban Fangfangdian [2021] No. 14), as well as relevant national food safety standards issued by the Food and Agriculture Organization of the United Nations/World Health Organization: "Guidelines for Preventing the Spread of New Coronary Pneumonia in Food Production and Operation" (August 2021) and other documents, this guide is formulated for cold chain food producers and operators and key links in production and operation.

This guide is applicable to the prevention and control of new coronavirus pollution in the production, loading and unloading, transportation, storage, and sales of cold chain foods that are processed by freezing and cold storage methods, and the products are always in a low temperature state from the factory to the sale. The business units and relevant practitioners of places where imported cold chain food is stored in the port area can refer to the implementation.

This guide focuses on preventing cold chain food practitioners and related personnel from being infected by the new corona virus, highlight the epidemic prevention and control of personnel in high-risk positions such as porters and unpackers who are engaged in key links such as loading, unloading, storage and transportation in key places such as centralized supervision warehouses or first-station cold storage, and focusing on strengthening the cleaning and disinfection of cold chain food packaging. Producers and operators strictly abide by the laws and regulations and relevant national food safety standards and implement the regulations of the local competent authorities on the prevention and control of the new crown pneumonia epidemic are the prerequisites for the application of this guide.

2. Health Management of New Corona Virus Prevention and Control for Employees

The health of employees is fundamental to prevent cold chain food from being contaminated by the new coronavirus. Producers and operators involved in the production, loading and unloading,

transportation, storage, sales and catering services of cold-chain food should adjust and update the health management system of employees in a timely manner according to the requirements for the prevention and control of the new crown pneumonia epidemic, improve the management measures for the prevention and control of the new crown virus, and strictly implement the personal protection of employees.

2.1 Establish a Health Registration System for Employees

Cold chain food producers and operators must do a good job of registering the itinerary and health status of their employees (including new recruits and temporary workers) within 14 days, establish health cards for employees on duty, newly recruited employees need to provide a certificate of vaccination against the new coronavirus, a negative nucleic acid certificate within 48 hours, no abnormality in the health code and itinerary code, and master the movement and health of the employees.

2.2 Daily Health Monitoring of Employees

Cold chain food producers and operators should strengthen personnel entry and exit management and health monitoring, establish a health record (including 10 main symptoms: fever, dry cough, fatigue, loss of smell and taste, nasal congestion, runny nose, sore throat, conjunctivitis, myalgia, diarrhea) and risk exposure information reporting system for all employees, set up temperature measurement points at the entrance of food production and operation areas, and implement registration, temperature measurement, disinfection, and health codes and other prevention and control measures, implement the "green code" induction system.

2.3 Nucleic Acid Detection of Practitioners

Nucleic acid testing is an important means of early detection of infected persons. Cold chain food practitioners should conduct relevant tests in accordance with the "New Coronavirus Pneumonia Prevention and Control Plan (Eighth Edition)" (Joint Prevention and Control Mechanism Zongfa [2021] No. 51). For personnel in high-risk positions in key places and key links, the frequency of nucleic acid testing should be appropriately increased.

Personnel in high-risk positions include but are not limited to the following personnel: Porters of centralized supervision warehouses or cold storage at the first station, loader, unpacker, sterilizer, forklift operator, warehouse management, sampling personnel, garbage cleaning personnel, etc. Personnel in high-risk positions of imported cold-chain food that are preventatively sterilized; front-end personnel for mitigation of imported cold-chain food production and processing enterprises, such as porters, unpackers, etc.

Personnel in high-risk positions should implement high-frequency nucleic acid testing, and the specific frequency can be appropriately adjusted based on risk research and judgment according

to local conditions. In principle, reasonable arrangements should be made to ensure that nucleic acid testing is carried out by the same type of personnel every day.

2.4 Registration and Management of Outsiders

Minimize the entry of outsiders into the production and operation area. If it is really necessary to enter, it is necessary to register the unit, health status, and contact with people in the area where the epidemic occurred and implement the inspection and registration of health codes and itinerary codes, temperature measurement, and personal protection (such as Wear a mask, etc.) and other measures to enter. When the vehicle enters and exits, the personnel in the vehicle shall not leave the vehicle unless it is necessary, and those who do need to leave the vehicle shall be managed according to the above requirements. Doorman on duty, staff and drivers should avoid unnecessary contact.

2.5 Practitioners' Hygiene Requirements

2.5.1 Healthy employment. Before starting work, ensure that your health is in good condition, report health information to the production operator, and take the initiative to accept the temperature of the production operator. If symptoms such as fever, dry cough, fatigue, etc. occur, you should report it immediately and seek medical attention in time.

2.5.2 Do personal protection. Practitioners correctly wear masks, gloves and overalls when they work. Work clothes are kept clean and tidy, washed regularly, and disinfected when necessary. In addition to work clothes, employees in special positions (fresh slaughter, cutting workshop, etc.) should wear waterproof aprons and rubber gloves according to protective requirements. It is recommended that food workers wear disposable gloves, but they must be replaced frequently, and they should wash their hands between changes and when they are not wearing gloves. To avoid secondary contamination of protective equipment, gloves must be replaced after non-food related activities (such as opening/closing the door by hand and emptying the trash can).

2.5.3 Pay attention to personal hygiene. When sneezing or coughing, cover your mouth and nose with a tissue or cover it with your elbow arm. Do not spit and pay attention to hygiene when blowing your nose. Try to avoid touching your mouth, eyes, and nose with your hands.

2.5.4 Strengthen hand hygiene. When handling goods, or when your hands touch shelves, handrails and other public objects, wash your hands with hand sanitizer or soap under running water, or rub your hands with quick-drying hand disinfectant.

2.6 Establish Procedures for Reporting Abnormal Health

Once an employee finds that he or his co-living person has fever, dry cough, fatigue and other suspected symptoms, he should promptly report it to the top management of the producer and operator and report it level by level or directly depending on the situation. Once the production

and business operators discover that their employees have the above-mentioned abnormal health symptoms, no matter what their health status is, they should take effective measures to quickly exclude them and their close contacts from the food working environment. In areas with a high risk of spreading new crown pneumonia, it is recommended to require healthy employees to make a "zero" report in accordance with the prevention and control regulations of the local competent authority.

2.7 Procedures for Returning Employees to Work

According to the registration and health files of the employees in the production and operation area, timely track the treatment and rehabilitation status of employees with abnormal health, physical discomfort, suspected or infected with the new crown virus (patients or asymptomatic infections), and scientifically evaluate whether they are eligible for return after recovery. Post conditions. If the symptoms of a confirmed case of new coronary pneumonia subside, and two PCR nucleic acid tests at least 24 hours apart are negative, the isolation can be lifted. Practitioners who are close contacts of patients with new coronary pneumonia should also meet the above control requirements before returning to work.

2.8 Strengthen the Promotion of Prevention and Control Knowledge

Carry out various forms of health education, guide practitioners to master knowledge and skills related to the prevention and treatment of new coronary pneumonia and other respiratory infectious diseases, develop good hygiene habits, and strengthen self-protection awareness.

3. Prevention and Control Requirements During Loading, Unloading, Storage and Transportation

3.1 Sanitary requirements for loading and unloading workers

For those in high-risk positions, such as porters, loader, unloading workers, and sterilizers in centralized supervision warehouses or first-station cold storage, who have direct contact with imported cold chain food without preventive disinfection for the first time, the personnel are required to be fixed, closed-loop management, and nucleic acid testing reference. 2.3 to proceed.

In addition to the general personal hygiene requirements, you should wear work clothes and hats, disposable medical masks, gloves, etc., and wear goggles and face screens when necessary to avoid frequent contact between the surface of the goods and the body surface.

Especially when loading and unloading imported cold chain foods from areas where epidemics are occurring, relevant personnel must wear masks during the whole process of transporting goods, avoiding the goods from sticking to the face and touching the mouth and nose with their

hands to prevent direct contact with the new crown. Virus contaminated frozen aquatic products, etc. If the mask is damaged during transportation, it should be replaced immediately.

3.2 Hygienic requirements for transport drivers

In addition to self-protection in accordance with the hygiene requirements of employees, personnel (drivers, etc.) transporting imported cold-chain food shall not open the box without authorization during transportation and shall not open the packaging of cold-chain food at will to directly contact the cold-chain food. When the vehicle enters and exits, the driver and accompanying personnel should avoid unnecessary contact with the guards on duty and staff.

3.3 Sanitary management at the source of goods

For imported cold chain food, the importer or consignor should cooperate with relevant departments to sample and test the food and its packaging. For food from other cities, distributors should take the initiative to obtain relevant food safety and anti-epidemic inspection information from suppliers. If an importer or cargo owner entrusts a third-party logistics company to provide transportation, warehousing and other services, when the goods are delivered to the third-party logistics company, they should actively provide the third-party logistics company with relevant food safety and epidemic prevention inspection information.

In the cold chain logistics process, if supports or pads are added to the logistics packaging, it should meet the relevant food safety and sanitation requirements. The logistics packaging should indicate the temperature conditions for cold chain food storage and transportation. Strengthen the operation and management of cargo handling, etc., so that the cargo cannot directly touch the ground, and the cold chain food packaging cannot be opened at will. It should be ensured that the temperature of cold chain food is always within the allowable fluctuation range during transportation, storage, and sorting. Record and keep the time, temperature and other information of each delivery link.

3.4 Hygienic management of vehicles It should be ensured that the interior of the vehicle compartment is clean, non-toxic, harmless, non-odor, and non-polluting, and regular preventive disinfection should be carried out. For specific disinfection measures, please refer to the "Technical Guidelines for Prevention and Control of Novel Coronavirus in Cold Chain Food Production and Operation (Second Edition)".

3.5 Sanitary management of storage facilities

In addition to checking the appearance and quantity of cold chain foods, the storage inspection should be strengthened. The center temperature of cold chain foods should also be checked. Strengthen storage management in the warehouse, cold chain food stacking should be placed on pallets or shelves in accordance with regulations. Cold-chain foods should be placed in storage

according to their characteristics or locations. Cold-chain foods that have large differences in temperature and humidity requirements and are prone to cross contamination should not be mixed. The temperature and humidity in the warehouse should be checked regularly, and the temperature and humidity in the warehouse should meet the storage requirements of cold chain food and remain stable. Regularly clean and disinfect the internal environment, shelves, and work tools of the warehouse. For specific cleaning and disinfection measures, refer to the "Technical Guidelines for Prevention and Control of Novel Coronavirus in Cold Chain Food Production and Operation (Second Edition)"

4. Prevention and Control Requirements for Production and Processing

4.1 Personnel hygiene requirements

Follow 2.5 requirements.

For the mitigation front-end personnel of imported cold chain food production and processing enterprises, such as porters, unpackers and other high-risk positions, the personnel are required to be fixed, closed-loop management, and nucleic acid testing should be carried out according to 2.3.

4.2 Keep a Safe Distance

Keep a distance of at least 1 meter between employees. Feasible measures to maintain distance in the food processing environment include: setting up workbenches on one side of the production line, displacing production, or assembling baffles in the middle of the production line to prevent employees from facing face-to-face situations; strictly limiting the number of employees in the food preparation area, Eliminate all non-essential personnel; divide employees into working groups or teams, while reducing communication and mutual influence between working groups.

4.3 Incoming Protection and Inspection

4.3.1 Loading and unloading protection. Loading and unloading workers who need to directly contact cold-chain food goods should wear work clothes, disposable medical masks, gloves, etc. before moving the goods, and wear goggles and face screens when necessary to avoid frequent contact with the surface of the goods.

4.3.2 Source control. Cold chain food companies should do a good job in supplier compliance inspection and evaluation, carefully do a good job in the inspection of each batch of food purchases, and truthfully record and store food and raw material purchase inspections, factory inspections, food sales and other information in accordance with the law to ensure food traceability. The retention period of records and vouchers shall not be less than 6 months after

the expiration of the product warranty period. If there is no guarantee period, the retention period shall not be less than 2 years.

4.3.3 Inspection certificate. For imported cold chain food, the importer or consignor should cooperate with relevant departments to sample and test the food and its packaging. For food from other cities, distributors should take the initiative to obtain relevant food safety and anti-epidemic inspection information from suppliers.

4.4 Cleaning and disinfection

See "Technical Guidelines for Prevention, Control and Disinfection of New Coronavirus in Cold Chain Food Production and Operation Process (Second Edition)".

4.5 Other protective measures

4.5.1 Ventilation requirements. Natural ventilation is preferred for ordinary factories, and mechanical ventilation can be supplemented if conditions are not available. The closed factory area shall maintain indoor air circulation and air-conditioning system safety. The air-conditioning and ventilation system shall be inspected, cleaned and disinfected regularly to ensure clean and safe operation.

4.5.2 Water supply and drainage facilities. There should be perfect sewers and kept unblocked. It should be equipped with ground flushing faucets and disinfection facilities for the flushing and disinfection of sewage. Sewage discharge shall comply with relevant regulations.

5. Requirements for Prevention and Control During Sales Operations

Cold chain food centralized trading markets (agricultural product wholesale markets, farmers' markets, community vegetable markets), supermarkets, convenience stores, catering, self-operated e-commerce and other food operators shall have corresponding cold storage and freezing facilities.

5.1 Personnel Hygiene Requirements

Follow 2.5 requirements. In addition to work clothes, food operators at special stalls such as fresh slaughter also need to wear waterproof aprons and rubber gloves.

5.2 Keep a safe distance

Reasonably control the number of customers entering the cold chain food sales area, avoid gathering and crowding, keep the distance between people at least 1 meter, and the enclosed space should be increased appropriately. Ground signs can be used to guide and manage

customers' orderly queuing and other measures to facilitate customers to keep their distance, especially in crowded areas, such as service counters and checkout counters.

5.3 Cleaning and disinfection See "Technical Guidelines for Prevention, Control and Disinfection of New Coronavirus in Cold Chain Food Production and Operation Process (Second Edition)".

5.4 Warning notice

5.4.1 Set up signs at the entrance, requiring customers not to enter the store when they have abnormal health, physical discomfort, or suspected symptoms of the new coronavirus.

5.4.2 Regularly broadcast or post notices in cold chain food retail areas (stores, stores, supermarkets) to remind customers to keep their distance and clean their hands in time. If consumers bring their own shopping bags, it is recommended that they should pay attention to washing before using cold chain food.

5.5 Other protective measures Set up glass barriers at checkout counters and counters to encourage the use of contactless payments to reduce contact. It should be considered not to publicly display or sell unpackaged cold chain food at self-service counters.

6. Requirements for Prevention and Control of Catering Processing

In order to Prevent and Control the new crown virus pollution involving cold chain food and catering services, catering service operators should pay attention to the following prevention and control points.

6.1 Personnel hygiene requirements

Follow 2.5 requirements.

6.2 Keep a safe distance

6.2.1 Use appropriate measures to prevent overcrowding and keep a distance of at least 1 meter between food workers.

6.2.2 The dinning seat arrangement should achieve a safe social distance.

6.2.3 Use floor markings in the store to help customers keep their distance, especially in crowded areas, such as service counters and cashier counters.

6.3 Cleaning and disinfection

See "Technical Guidelines for Prevention, Control and Disinfection of New Coronavirus in Cold Chain Food Production and Operation Process (Second Edition)".

6.4 Other protective measures

6.4.1 Provide cleaning and disinfectant solution. Provide hand sanitizer or no-clean disinfectant for employees and consumers who enter and exit the catering area.

6.4.2 Prevent cross contamination. Raw and cooked foods are processed and stored separately, and the tools and utensils for handling uncooked foods shall be fully disinfected before serving or processing cooked foods.

6.4.3 Avoid unnecessary physical contact. Encourage mobile contactless payment, contactless delivery, etc.

6.4.4 Maintain air circulation, and frequently open windows for ventilation indoors.

6.4.5 Try to provide cooked food. During the epidemic, the food should be fully heated.

6.4.6 Catering services should promote the use of meal sharing methods, and public spoons and chopsticks should be provided if meals cannot be split.

7. Emergency Response Measures

In relevant areas cold-chain food producers and operators should formulate emergency response plans for the new coronavirus epidemic and use timely handling and reporting of the epidemic situation to effectively prevent the spread of the new corona virus.

7.1 Emergency measures for persons with abnormal health conditions once a case or an abnormal condition suspected of COVID-19 is found in the relevant area of cold chain food production and operation, the prevention and control measures of internal non-proliferation and external prevention of export must be implemented, and the relevant departments must carry out epidemiological investigations, close contact tracking management, and epidemic points Disinfection and other work, and conduct sampling and nucleic acid testing of the personnel working and appearing areas and the processed cold chain food. If there is an air conditioning and ventilation system, it should be cleaned and disinfected at the same time, and it can be reactivated after being qualified. According to the severity of the epidemic, the work area will be temporarily closed, and production will be resumed after the epidemic is controlled. In accordance with the requirements for the prevention and control of COVID-19 epidemic, measures such as cutting off the route of transmission and isolating close contacts and disposing of pollutants in accordance with regulations.

7.2 Emergency measures for samples found to be positive in nucleic acid testing

Once notified that there is a positive sample of the new coronavirus nucleic acid test, cold chain food producers and operators should promptly initiate the emergency response plan of their unit, and promptly take emergency response to related items and the environment under the guidance of professionals in accordance with local requirements. Temporary storage, cooperate with sampling, harmless treatment of related items, disinfection of work areas, and timely implementation of nucleic acid testing and health screening for persons who may be exposed. Before the items are processed, refrigerating and refrigerating equipment such as refrigerators, freezers, and cold storages shall be kept in normal operation to prevent the items from becoming corrupted and deteriorating and possible pollutant diffusion. Avoid spills or leaks during transportation when handling related items. The personnel involved in the clearance and transportation of related items shall take personal protection.

For cold chain food that is positive for the new coronavirus nucleic acid, it shall be implemented in accordance with the relevant requirements for the classification and disposal of cold chain food for the prevention and control of the new coronary pneumonia epidemic.

Attachment 2

Technical Guidelines for the Cold Chain Food Production and Operation Process Covid Control and Disinfection (Second Edition)

1. Basis and Scope of Application

In order to standardize and guide the prevention and control of COVID-19 in the cold chain food production and operation process, and prevent food packaging materials be contaminated by COVID-19, refer to the "Guidelines for the Prevention and Control of COVID-19 of Meat Processing Enterprises" issued by the State Council's Joint Prevention and Control Mechanism for covid-19 ”(Joint Prevention and Control Mechanism [2020] No. 216), “Emergency Notice on Strengthening the Nucleic Acid Testing of the New Coronavirus in Cold Chain Foods” (Joint Defense and Joint Control Mechanism [2020] No. 220), “Agricultural Trade Market’s COVID-19 Prevention and Control Technical Guide (Joint Prevention and Control Mechanism [2020] No. 223), "COVID-19 Prevention and Control Plan (8th Edition)" (Joint Prevention and Control Mechanism [2021] No. 51)), as well as relevant national food safety standards and the “Guidelines for Preventing the Spread of COVID-19 in Food Businesses " (August 2021) issued by the Food and Agriculture Organization of the United Nations/World Health Organization and other documents to formulate this guide.

This guide is applicable to cold chain foods that are processed by freezing, refrigeration and other methods, and the products are always in a low temperature state from the factory to the sale. It is used to guide the normal operation of food production and business units and

individuals during the normalization of the prevention and control of COVID-19. Disinfection of cold chain foods from high-risk areas of COVID-19 from abroad during the process of loading and unloading, transportation, storage, production and sales. The business units and relevant practitioners of places where imported cold chain food is stored in the port area can refer to the implementation.

Relevant units and individuals of food production and operation strictly abide by laws and regulations and relevant national food safety standards and implement local competent authorities' regulations on the prevention and control of COVID-19 are the prerequisites for applying this guide.

2. Cleaning and Disinfection During Production and Processing

During the production and processing of cold chain food, an effective cleaning and disinfection system should be formulated for processing personnel, production environment, and related equipment and facilities based on the characteristics of food raw materials and product characteristics, and the characteristics of production and processing technology, and the implementation and effects of disinfection measures should be regularly reviewed.

2.1 Food Production and Processing Personnel

Food production and processing personnel entering the work area, on the premise of confirming that their health and personal protection meet the requirements, should focus on hand hygiene, disinfect their hands with quick-drying hand sanitizer, and take an appropriate amount of hand sanitizer to rub their hands until dry. When using it, keep away from fire sources.

2.2 Outer Packaging of Raw Materials and Semi-finished Products.

2.2.1 The outer packaging of cold-chain food raw materials and semi-finished products from high-risk areas (countries) of COVID-19 should be strictly and effectively disinfected before entering the enterprise or warehouse. The coordination and cooperation of departments should be strengthened, and in principle, preventive disinfection of imported cold chain food transportation vehicles and packaging should be carried out only once, and repeated disinfection should be avoided.

2.2.2 Tools and equipment (such as transfer boxes, spoons, pliers, etc.) used to transport cold chain food raw materials or semi-finished products should be cleaned and disinfected in time after each use.

2.2.3 For food raw materials or/and semi-finished products from foreign epidemic areas that have been tested and contaminated by the new crown virus, they should be implemented in

accordance with the relevant requirements for the classification and classification of cold chain food for the prevention and control of the new crown pneumonia epidemic.2.3 Production and processing equipment and environment.

2.3.1 Equipment and appliances. Utensils used before and after processing should be placed separately and kept properly to avoid cross contamination. All equipment and utensils after production and processing (or when necessary, during production and processing) should be effectively cleaned and disinfected, and the selected cleaning and disinfection procedures and disinfectants should be able to effectively kill the new coronavirus.

2.3.2 Environment. Increase the frequency of disinfection in high-risk areas such as the production workshop environment of each stage of cold chain food raw material processing, the workshop environment of each production stage of ready-to-eat and cooked food, and the storage cold storage. The environment must be thoroughly cleaned and disinfected during the production process and after production. In particular, it is necessary to strengthen the frequency of cleaning and disinfection of various operating surfaces, contact surfaces/points (such as door handles, switches, appliance handles, telephones, toilets, etc.) that people touch during production and processing, and crowded environments.

2.3.3 For all kinds of meat, aquatic products, egg products and other foods rich in protein and fat, it is difficult to remove dirt due to the easy formation of dirt on the surface of the contact object, and the production and processing environment is usually low in temperature and high in humidity, in order to improve the disinfection effect , Minimize the amount of disinfectant used, shorten the action time of the disinfectant on the surface of the object, all meat, aquatic products, egg products and other foods rich in protein and fat contact with the container, equipment or environmental object surface must be Disinfect after thorough cleaning.

2.3.3.1 Selection of cleaning agent

Commonly used food processing equipment and environmental cleaning agents include alkaline solutions, salt solutions (such as phosphate, carbonate, silicate), acid (such as citric acid, phosphoric acid) solutions and synthetic detergents (such as anions, cations, non- Ionic alkaline detergent) and so on. Among them, alkaline solution is the most commonly used cleaning solution in the processing environment of meat, aquatic products and egg products. At present, the most commonly used cleaning agent for meat processing enterprises is 1.5% sodium hydroxide solution, which can saponify fat and hydrolyze protein deposits. In addition, various synthetic detergents can also effectively remove meat deposits, fats and dirt. They should be in full contact with the surface to be cleaned at an appropriate temperature and kept for a certain period of time before being rinsed with water. Another way to saponify fat and facilitate cleaning is to prepare a protease solution with a low-concentration alkaline solution that can decompose protein. Since the enzyme is inactivated at high pH and high temperature, the temperature and

pH value of the enzyme solution are moderate, which can greatly reduce the corrosion of the surface to be cleaned.

2.3.3.2 Cleaning procedures

(1) To save detergent and water, first use physical methods to remove the dirt on the surface.

(2) Use water to further rinse off the dirt. In order to reduce the generation of aerosols, try not to use high pressure water flushing.

(3) Apply an alkaline solution or a synthetic detergent/enzyme solution at a temperature of 50-55°C to the surface to be cleaned. After contacting for 6-12 minutes, clean and wipe the surface to be cleaned. In order to make the cleaning agent fully contact the surface to be cleaned, it is best to use foaming detergent to clean the vertical surface.

(4) Rinse the alkali solution or detergent with clean water.

(5) Alkaline solution cannot remove scale or rust spots. Acid (such as phosphoric acid, hydrochloric acid or organic acids such as citric acid, gluconic acid) can be used to remove scale or rust spots.

2.3.3.3 Disinfection

(1) In order to improve the disinfection effect and prevent insufficient contact between the disinfectant and the surface of the object and reduce its activity, all equipment or environmental surfaces to be disinfected must be thoroughly cleaned according to the above procedures before they can be disinfected. Commonly used disinfectants include chlorine, iodine-containing disinfectants or quaternary ammonium salt solutions.

(2) Whether the disinfected surface needs to be cleaned depends on the disinfectant used. Quaternary ammonium salt and iodine-containing disinfectants need to be thoroughly rinsed with water after use.

(3) If the surface of the equipment is corroded after disinfection, the corroded area can be coated with oil for protection. There is no need to remove when using food grade spreads, non-food grade spreads need to be removed before the start of the next processing shift.

(4) Use the in-situ cleaning method to continuously clean the moving conveyor belt and other parts of the production and processing equipment.

3. Cleaning and Disinfection During Transportation and Distribution

3.1 Personnel

During the cold chain food delivery process, drivers and transport attendants should maintain personal hand hygiene, and alcohol-based hand sanitizers, disinfectants and paper towels should be provided in the car to ensure that hands are disinfected regularly without washing hands with clean water.

3.2 Object surface

Drivers should wash or disinfect their hands before transferring or submitting delivery documents to employees. To avoid washing the returned items, the documents are best placed in disposable containers and packaging materials. For reusable containers, regular and appropriate sanitary cleaning and disinfection should be carried out.

Surfaces that are most likely to be contaminated by viruses, such as steering wheels, door handles, and mobile devices that are frequently touched by human hands, should be disinfected regularly.

During the transportation of cold chain food, it is strictly forbidden to unpack and dump the goods. If it is necessary to unpack and dump the goods, they must be disinfected according to the requirements of 2.2.

3.3 Transportation

In order to avoid contamination of cold chain food, drivers must ensure that transport vehicles, handling tools and containers are clean and regularly disinfected. When goods are mixed, keep food and other goods as separate as possible when loading vehicles. Before and after the vehicle carries a batch of goods, the parts in the vehicle that may be touched by human hands, especially the inside and outside of the vehicle, must be thoroughly disinfected.

4. Cleaning and Disinfection During Sales Operation

4.1 Personnel in the cold chain food sales and operation area shall maintain good hygiene practices and frequently use hand sanitizer to wash and disinfect their hands to keep their hands clean and hygienic.

4.2 Clean and disinfect all kinds of surfaces, handles (such as door handles, refrigerating equipment handles, container handles, cart handles, etc.), buttons (such as calculators, electronic weighing device buttons, etc.) frequently touched by human hands in time. After the operation is completed every day, the operation area shall be fully disinfected.

4.3 It is convenient for customers to wash their hands and disinfect. It should be ensured that the hand washing facilities in the store are operating normally and equipped with quick-drying hand disinfectants; when conditions permit, they can be equipped with induction hand disinfection facilities.

5. Cleaning and Disinfection of Catering Processing

5.1 The catering industry should regularly clean and disinfect all cold-chain food contact surfaces, outer packaging and utensils, and strengthen the cleaning and disinfection of tableware (drinking) utensils and condiment containers.

5.2 Do a good job of disinfecting the surface of high-frequency contact objects, and perform various equipment, areas, contact surfaces/high-frequency contact points (such as countertops/clips/service appliances/open self-service display stands/doorknobs), trash cans, sanitary ware, etc. More frequent cleaning and disinfection. At the same time, increase the frequency of cleaning and disinfecting the work clothes of the staff.

5.3 Ensure that the hand washing facilities in the store are operating normally and are equipped with quick-drying hand disinfectants; when possible, they can be equipped with induction hand disinfection facilities.

6. Commonly Used Disinfection Methods in the Production and Operation Process

In the production and operation process of cold chain food production, transportation and sales, chemical and physical disinfection techniques can be selected for disinfection.

6.1 Physical Disinfection

The physical disinfection methods that have been validated by laboratories and on-site and have been evaluated as qualified by relevant institutions can be used to disinfect all aspects of cold chain food production and operation.

6.2 Chemical Disinfection

Commonly used disinfectants and methods of use are shown in the attached table.

6.3 Quality Control of Disinfection

Relevant units of cold chain food production and operation should be equipped with professional disinfection personnel and special equipment to disinfect cold chain food, production equipment, and the environment. Among them, disinfection personnel should be systematically trained and qualified before they can take up their posts; disinfection equipment should be regularly repaired and maintained; The effect evaluation should be carried out in strict accordance with the requirements of the attached table or annex.

6.4 Whether chemical or physical techniques are used to sterilize, ensure that all sides of food packaging materials are thoroughly sterilized. In order to avoid the heterogeneity of artificial disinfection, it is recommended to use automatic disinfection equipment.

Appendix 1

Commonly Used Low-Temperature Disinfectants in Cold Chain Food Production and Operation and How to Use Them

Low-temperature disinfectants commonly used in cold chain food production and operation and how to use them

Commonly Used Disinfectants in Production and Operation and Methods of Use

Types of Disinfectants	Main active ingredients and dosage forms	Instructions	Precautions
Chlorine-containing low temperature disinfectant	Sodium dichloroisocyanurate Binary packaging, powder and liquid	1. Disinfection method: spray disinfection, soak disinfection, wipe disinfection. 2. Dosage of disinfectant: The concentration of low-temperature disinfectant at -18°C is 3000mg/L, the action time is 10-20min, and the spraying is about 200ml/m2. The concentration of -40°C low temperature disinfectant is 5000 mg/L, the action time is 10-20min, and the spraying is about 200ml/m2.	1. The low-temperature disinfectants used on site must be legal and effective and should comply with the requirements of the "Notice of the General Office of the National Health and Health Commission on Printing and Distributing the Technical Requirements for Hygienic Safety Evaluation of Low-temperature Disinfectants" (Supervision Letter [2020] No. 1062 of the State Health Office) Do a good job in sanitation and safety evaluation and filing of disinfection products. 2. Disinfect in strict accordance with the scope of use and method of use. It is strictly forbidden to use it beyond the scope. It is recommended to measure the content of active ingredients (chlorine-containing disinfectant) before use. 3. In the case of mechanized low-temperature disinfection, the disinfection equipment should be debugged so that it can be reasonably matched with the low-temperature disinfectant to ensure that the low-temperature disinfectant fully covers the six sides of the outer packaging; when using

Types of Disinfectants	Main active ingredients and dosage forms	Instructions	Precautions
			it for the first time, the on-site disinfection effect evaluation should be done, and the disinfection effect is qualified. can be used. 4. During low-temperature disinfection, the technical training of disinfection staff should be strengthened to ensure the disinfection operation standard and achieve full coverage of the disinfectant. 5. Organic matter has a great influence on the disinfection effect. When the disinfection object is seriously polluted, rinse or soak it with low-temperature disinfectant before processing. It is strictly forbidden to spray or wipe for disinfection. 6. When preparing, sub-packaging and using low-temperature disinfectants, personal protection should be strictly carried out, and work clothes, masks, gloves, etc. should be worn to avoid contact with the skin. 7. The low-temperature disinfectant is an external disinfectant. It should not be taken orally. It should be placed in a place that is not easy for children to reach. If it accidentally splashes into the eyes, it should be washed with water immediately. If it is serious, seek medical attention immediately. It should not be in contact with flammable materials and should be kept away from fire sources.
Carbon dioxide	Carbon dioxide	1. Disinfection method: spray disinfection, wipe disinfection.	

Types of Disinfectants	Main active ingredients and dosage forms	Instructions	Precautions
low temperature disinfectant		2. Disinfectant dosage: Strictly follow the product instructions for use.	
Peroxide type low temperature disinfectant	Hydrogen peroxide or peracetic acid	1. Disinfection method: spray disinfection, soak disinfection, wipe disinfection. 2. Disinfectant dosage: Strictly follow the product instructions for use.	
Quaternary ammonium salts low temperature disinfectant	Quaternary ammonium salt	1. Disinfection method: spray disinfection, soak disinfection, wipe disinfection. 2. Disinfectant dosage: Strictly follow the product instructions for use.	

Appendix 2

On-site Low-Temperature Disinfection of Cold Chain Food Packaging

Guidelines for Job Evaluation

1. Evaluation principles

On-site low-temperature disinfection evaluation includes process evaluation and effect evaluation. Process evaluation should be carried out for each low-temperature disinfection, generally by the self-inspection and self-evaluation of the disinfection implementation unit. Relevant supervision departments can conduct random inspections on the disinfection process and the self-inspection and self-evaluation process to ensure that the disinfection process is effective. The effect evaluation generally adopts the method of regular random inspection, and it is recommended to evaluate every six months. When changing the low-temperature disinfection method, the disinfection effect should be evaluated, and it can be put into use only after it is proved that the low-temperature disinfection is effective.

2. On-site low-temperature disinfection process evaluation

The disinfection implementation unit should make disinfection records and conduct self-evaluation in each disinfection process and evaluate whether the entire disinfection operation is carried out in accordance with the disinfection work plan, whether the low-temperature disinfection products used are legal and effective, and whether the disinfection method matches the disinfection object and the environment. Whether the disinfection site is fully covered, whether the usage amount meets the requirements, whether the disinfection time is sufficient, and whether the disinfection records are standardized, etc. The contents include but are not limited to disinfection date, disinfection location, disinfection scope, disinfection object, disinfection procedure, disinfectant preparation, disinfectant concentration and dosage, action time, disinfection method, use of disinfection equipment, personal protection, etc.

The low-temperature disinfection products used should meet the requirements of relevant national health standards and norms and pass the health and safety evaluation. The disinfectant information includes the name of the disinfectant, the main active ingredients and their content, the validity period, the preparation method, the scope of use, and the method of use.

3. On-site low temperature disinfection effect evaluation

(1) Evaluation objects and indicators

The low-temperature disinfection effect evaluation object is the surface of the object. The indicator microorganism is selected according to the resistance of the new coronavirus to the disinfection factor, and the killing rate of the indicator microorganism is used as the evaluation index. The resistance of the indicator microorganism should be comparable to or higher than that of the novel coronavirus, easy to cultivate, and meet the requirements of laboratory biosafety and WS/T 683. For chemical disinfection, Staphylococcus aureus (ATCC 6538) and Escherichia coli (8099) can be used. During physical disinfection, indicator microorganisms that meet the above requirements should be selected according to the characteristics of the disinfection factor.

(2) Evaluation method

Prepare bacterial tablets for experiment according to GB/T 38502 (tryptone soybean broth medium is used as organic interfering substance in the evaluation of low-temperature on-site disinfection effect), so that the number of recovered bacteria per tablet is 1×106CFU/tablet ~ 5×106CFU/piece. Put the indicator microbes into the corresponding low temperature environment for at least 30min and ensure that the indicator microbes reach the same low temperature before proceeding to the next step.

Before disinfection: place the fungus tablets on the site, with desktops, door handles, buttons, etc. as the key objects, and each type of object should have no less than 2 samples; cold chain food outer packaging should be distributed on all six sides of the outer packaging; The total number of test samples shall not be less than 30.

After sterilization: After the sterilization reaches the action time, use sterile tweezers to transfer the bacterial slices into a test tube containing 5.0 mL of the corresponding neutralizer, vibrate 80 times in the palm of the hand or mix with a mixer, and neutralize for 10 minutes. At the same time, a positive control group was established.

Laboratory culture: shake the sampling tube on a mixer for 20 s or vigorously vibrate 80 times, draw 1.0 mL of the sample to be tested and inoculate it on a sterile plate, inoculate 2 plates in parallel for each sample, add the dissolved 45 ℃ ~ Add 15 mL to 18 mL of culture medium at 48 °C, shake while pouring, wait for the agar to solidify, and incubate at 36 °C ± 1 °C for 48 h, count the number of colonies, and calculate the killing rate.

(3) Judgment of results

The average killing rate of indicated microorganisms on the surface of the object is ≥99.9%, and the number of samples with a killing rate ≥99.9% accounts for more than 90%, and the disinfection is judged to be qualified.

4. matters needing attention

(1) Combining the characteristics of the site, clarify the disinfection objects, strictly follow the disinfection procedures, and standardize the disinfection work.

(2) The implementation unit of the disinfection work should have the ability to perform on-site disinfection, and the operators should undergo professional disinfection training, master the basic knowledge of disinfection and personal protection, and be familiar with the use of disinfection equipment and the preparation of disinfectants.

(3) All on-site disinfections shall be recorded and kept for at least 2 years, and self-monitoring shall be carried out at the same time. When carrying out the evaluation of disinfection effect, attention should be paid to standardized operation, and the samples and relevant test materials should be treated in a harmless manner in strict accordance with the biosafety requirements.

(4) During on-site disinfection, personal protection should be done well, and formal and effective personal protective equipment should be selected according to the on-site situation and relevant standard requirements.

END TRANSLATION

Attachments:

No Attachments.