A Practical Food Safety Guide for Food Recovery Programmes

Applicable for Food Banks, Food Pantries and Community Kitchens



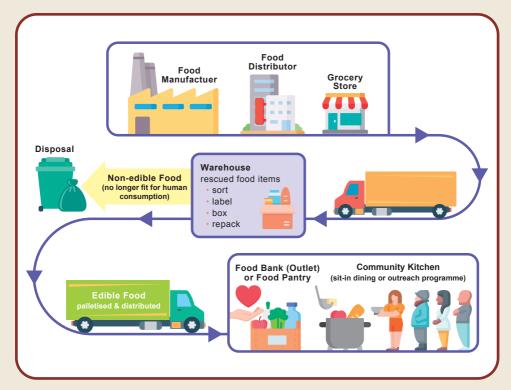






Introduction

To make better use of the food resources available in the community, food recovery, i.e. collecting donated food and redistributing them, provides meals for people in need and minimises food waste at the same time. There are various types of food recovery programmes that differ in the types of food collected and the food processing steps involved. While food banks typically collect donated food to a warehouse and redistribute them via outlets (e.g. food pantries), community kitchens often involve additional food processing steps such as reheating and cooking. Moreover, some food recovery programmes offer delivery services of recovered food and meals.



A schematic diagram of how food recovery programmes receive food from different sources, rescue and redistribute them to people in need.

Food recovery generally starts with receiving good faith food donations that are apparently wholesome. Food banks gather and distribute various food commodities, but the varied quality of the food received may raise food safety concerns. Moreover, improper food handling during meal preparation by community kitchens can lead to foodborne illnesses. Recovered food should comply with food law and be fit for human consumption.

This practical guide is intended to assist organisations in ensuring food safety while running food recovery programmes and preparing food. Food handlers and staff should always observe the "Five Keys to Food Safety" throughout the food production and recovery processes.

This guide is divided into four chapters:

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The following symbols are used in this set of guidelines as reminders:



1

Food Safety Basics



Food can be exposed to various conditions that may lead to contamination at different stages along the supply chain. Therefore, it is crucial to exercise extreme caution throughout the supply chain to ensure food safety. Food handlers should make use of the 'Five Keys to Food Safety' and Good Hygiene Practices (GHPs) to ensure that all food given to people in need is safe to eat.

Food Hazards

Food hazards have the potential to harm consumers' health, and they arise when food is exposed to hazardous agents, resulting in contamination of that food. They are subdivided into four primary categories: biological, chemical, physical and allergenic hazards.

Hazard	Description	 Examples
Physical hazards	They are associated with the presence of foreign objects.	 Foreign objects such as wood, glass or metal chips from damaged tools or utensils Accessories worn by food handlers, hair or plasters
Chemical hazards	They occur when chemicals are present in food at levels that can be hazardous to humans.	 Natural toxins (from food plants and animals), mycotoxins (from mould), pesticide residues Detergents, sanitising agents, bleaching agents and insecticides
Biological hazards	They are mainly microorganisms that cause illness.	Bacteria, yeasts, moulds, viruses and parasites
Hazards from food allergens	Food allergy refers to the immune system's reaction to certain substances or ingredients in foods.	Some individuals may be allergic to specific foods or food ingredients.

Food Contamination

There are three ways how food contamination could happen: primary, direct and cross-contamination.

1 Primary contamination

Occurs in primary food production processes such as harvesting, slaughtering, collecting, milking and fishing. An example is the contamination of eggs by a hen's faeces.

2 Direct contamination

The contaminants (hazards) affect the food when the person handles it with direct contact. This is the most common type of contamination. Some examples are:

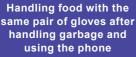




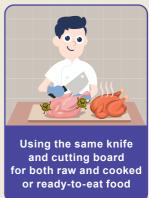
3 Cross-contamination

The contamination is caused by the transference of a hazard present in a food to another food via the surfaces of utensils that have contact with both without cleaning and disinfection. Some examples are:









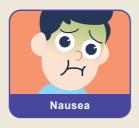
Food Poisoning

Food poisoning, also known as foodborne diseases, is usually caused by the consumption of contaminated food or water containing bacteria (e.g. *Salmonella*), viruses (e.g. norovirus), parasites or toxins (e.g. ciguatoxin). Depending on the causative agent involved, patients may fall ill within hours or days after consumption of contaminated food.

Common symptoms of food poisoning include nausea, abdominal pain, diarrhoea and vomiting.











Bacteria and viruses are the most common causative agents of foodborne diseases related to food premises and food businesses in Hong Kong. The common causes of food poisoning are:

- · Inadequate cooking;
- Cross-contamination of cooked or ready-to-eat food by raw food;
- Improper holding temperature (e.g. storage at room temperature for too long or inadequate chilling temperature); and
- Poor personal and environmental hygiene.





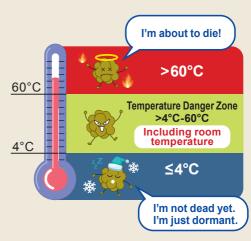






Temperature Danger Zone

Storing food at the Temperature Danger Zone (i.e. between 4°C and 60°C) can allow bacteria to grow Therefore, rapidly. proper temperature control to keep food away from the Temperature Danger Zone at all stages of food preparation is important to prevent bacterial food poisoning. While chilling will inhibit bacterial growth,



high temperature treatment can destroy bacteria effectively.

2-hour / 4-hour rule: to keep, to eat or to throw away?

The **2-hour / 4-hour rule** is a good way to keep food safe even if it has been out of refrigeration or placed at Temperature Danger Zone after cooking.

The table below outlines the 2-hour / 4-hour rule. ✓ means "yes" and ✗ means "no".



Five Keys to Food Safety and Good Hygiene Practices

To prevent food poisoning, food handlers and other staff should follow the "Five Keys to Food Safety" as below:

- 1 Choose: Choose safe raw materials;
- Clean: Keep hands and utensils clean;
- 3 Separate: Separate raw and cooked food;
- 4 Cook: Cook thoroughly; and
- 5 Safe temperature: Keep food at safe temperature.



Choose Choose safe raw materials



Clean Keep hands and utensils clean



Separate
Separate raw and
cooked food



Cook Cook thoroughly



Safe temperature Keep food at safe temperature

Good Hygiene Practices (GHPs) are an extension of the "Five Keys to Food Safety" to cover personal hygiene, environmental hygiene and food hygiene. Apart from preventing contaminants during food production and maintenance of well-equipped establishment, operation monitoring, product information, food delivery and on-going training are equally important. GHPs are fundamental to ensuring food safety in food premises.

Training of Food Handlers

Any staff member who prepares and handles food in a food recovery programme should be trained, instructed and supervised in food hygiene matters before reporting duty to ensure that they are



familiarised with the working environment and adhere to safe food preparation practices. Food handlers should be trained in accordance with their responsibilities, working environment, and tasks. Refresher training is also essential, whereas the frequency will vary depending on the type of facility, its risks, the foods/drinks given and the competence of the staff. It is recommended to provide retraining courses to food handlers every two years.

2

Food Safety in Food Recovery



Food banks have different requirements than other food catering or retail premises. Food banks depend mostly on donated foods, which bring with some food safety challenges. For example, the origin of donated food varies, while its history may be unknown: How was the food kept? How long was the food kept for? A number of staff and volunteers at food banks may be involved in food handling. Before providing donated food to those in need, it is important to conduct a thorough evaluation of the food items followed by proper storage. For management and food tracing purposes, it is recommended that food recovery programmes establish a list of accepted donors.

Food receiving / picking up

In Hong Kong, donated food is often picked up by food recovery programmes at the donor establishments, rather than delivered by the donors to the food recovery programmes. Similar to making food purchases, food donations should be obtained from reliable sources, such as licensed food premises. Practices related to food safety at this stage include the following:

- Pack the food in clean and covered containers, and mark the date of packing.
 The date of pick up may not be on the same date the food is made available.
- Do not pick up food that has been kept at inappropriate temperatures, such as ready-to-eat foods kept at the Temperature Danger Zone for more than 4 hours.
- Keep the food at a safe temperature when commuting, such as using insulated containers and ice packs to store chilled food at or below 4°C.
- Use a designated transporting vehicle for delivering food. The vehicle should not be used for other purposes and should be cleaned on a regular basis.
- Do not accept food from illegal or questionable sources.

Food inspection and evaluation

The purpose of food inspection in food recovery is to evaluate donated food to determine its fitness for human consumption. Prepackaged food received may be past its 'use by' date, while non-prepackaged food may be damaged or spoiled. Whenever a clear decision cannot be made as to whether the food is fit for consumption, the best practice is to throw it away. Any food that is not fit for human consumption should be put in containers clearly marked as "food for disposal".

Prepackaged food

Prepackaged food refers to any food packaged, whether completely or partially, in such a way that the contents cannot be altered without opening or changing the packaging. Prepackaged food should be checked for irregularities on containers, such as cracks or tears, and properly labelled with instructions like expiry dates, allergen information and storage guidelines. Throw away food with irregularities detected, including:-

- Food with mould, odd smell, discolouration, unusual product separation, and/or signs of insect or rodent infestation;
- Food that are in packages with holes or tears, broken seal or tampered resistant tape;
- Canned foods that are swollen/bulging, moderately to severely dented, rusty, leaking, mouldy and/or with improperly formed/defective seam;
- Food in glass or plastic containers that are with bulged, loose or crooked cap, leaks, cracks or chips on containers;

- · Food that has past their "use by" date; and
- Food that are not properly labelled such as inaccurate or missing food name, ingredients and expiry dates.

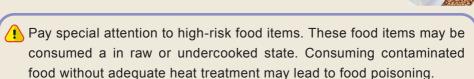


Non-prepackaged food

For non-prepackaged food, such as fresh meat and produce, only wholesome items should be accepted.

In general, mouldy and rotten items or items with bruises should be rejected. Select fresh and wholesome food and throw away:

- Food that are mouldy, slimy, limp, dried out, wrinkled, smell bad, and/or with excessive bruises/scars/soft spots;
- · Potatoes that have sprouting eyes;
- Frozen food that has been previously thawed and then refrozen; and
- Raw meat that has rotten odours, discolouration, and/or large amount of blood/liquid in a "puddle" found in the package









Storage and inventory

Collected food should be stored properly before redistribution. The first-in-first-out principle may not be applicable in the food recovery as the same product may come from different sources with different manufacturing dates and expiry dates. Expiry dates are essential information on inventory records to facilitate timely outgoing transactions and avoid wastage. Food recovery operators should keep track of the inventory not only for storage purpose, but also for traceability. It is also suggested that food recovery operators enrol in the Centre for Food Safety's Rapid Alert System to receive timely information on food incidents.

Food recovery should follow good storage practices:

Dry storage

- Store food off the floor and away from the walls, e.g. store on shelves or pallets.
- Store non-food items, such as liquid soaps and bleach, separately.
- Clean the storage area, including the floor, pallets and shelves, regularly.
- · Keep doors, windows and roofs well sealed.
- · Implement a pest control programme.

Cold food storage

- Maintain proper temperature of cold storage at or below 4°C for refrigerator, and at or below -18 °C for freezer.
- Check and record temperature regularly.
- Store raw food and cooked or ready-to-eat food separately.
 Ideally, use two separate refrigerators; if not, store raw food below cooked or ready-to-eat food to prevent meat juices from dripping onto the cooked or ready-to-eat food.
- · Do not overstuff the refrigerator or freezer.
- Clean the refrigerator and freezer regularly.
- Defrost freezer when necessary to prevent the development of thick frost.



3

Food Safety in Preparing Meals with Recovered Food



Preparing meals with recovered food requires a keen understanding of food safety practices to ensure that the food is safe for consumption. As described in the previous chapter, recovered food can come from a variety of sources and may have been exposed to conditions that could impact its safety, such as improper storage or handling during transportation. This chapter will focus on the importance of food safety in preparing meals with recovered food, discuss the potential risks associated with recovered food, and explore the necessary steps to mitigate these risks. It will also cover best practices for preparing safe meals, including good preparation techniques, proper storage and handling, and safe distribution.

Common food safety issues of community kitchens

Preparing meals in bulk is not an easy task as it can impose food safety hazards. During bulk cooking, heat may not be evenly distributed in the food, resulting in food that is not thoroughly cooked or reheated before consumption.

Cooking of food in large quantities can often result in food staying within the Temperature Danger Zone (4-60°C) for long periods of time before consumption, allowing foodborne pathogens to thrive. Cooling down large amounts of food can also be problematic, as heat trapped deeply within the food may not escape quickly enough, resulting in bacterial growth in food.



Furthermore, poor hygiene practices and a lack of kitchen space can increase the risk of cross contamination between raw and cooked food. Therefore, trained manpower as well as adequate room for purchasing, storing, preparing, cooking and distributing food are crucial.



Operators of community kitchens should ensure that the kitchen has sufficient capacity, and is well-equipped, regularly maintained and hygienic. The staff who prepare and handle food should be supervised, instructed and trained in food hygiene practices.



The following simplified guide is adopted from the *Safe Kitchen: An Illustrated Guide to Good Hygiene Practices for Food Handlers* which covers GHPs necessary for working in a kitchen. All food handlers are advised to go through the materials before work:

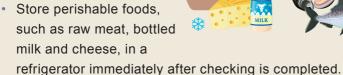


Scan the QR code to access the *Safe Kitchen: An Illustrated Guide to Good Hygiene Practices for Food Handlers* on the Centre for Food Safety website.



A. Receiving and Storage of Raw Materials

 Check food for its quality, appearance, expiry dates, labelling and package integrity upon arrival and prior to storage. Check for any signs of infestation and dispose any suspicious foods.





- Store raw foods separately from cooked and ready-to-eat foods to avoid cross-contamination.
- Store food items to be kept at room temperature, such as canned food, cereals and potatoes, in a cool and dry place.
- For prepackaged foods, follow the storage instructions on the package.
- Practise an effective stock rotation system.
- Store chemicals and cleaning equipment away from food storage areas.

B. Preparation

- Ensure that adequate facilities such as wash basins, refrigerators, cooking appliances and areas for cutting and defrosting are available in the kitchen.
- Use separate food preparation areas to handle raw and cooked or readyto-eat foods. No unauthorised switch of area use is allowed. If raw and cooked or ready-to-eat foods need to be handled in the same preparation area, disinfect the area thoroughly between uses.



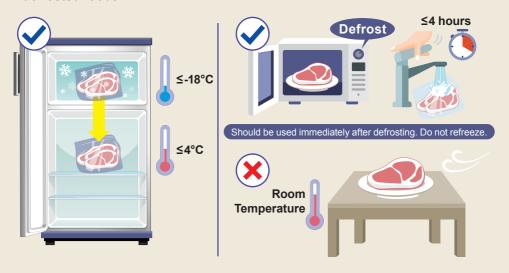


- Should washing raw meat or poultry be needed, clean and sanitise the sinks and the surrounding areas after use.
- Use designated tools and utensils, e.g. chopping boards and knives for handling raw and cooked or ready-to-eat foods.
- Fruits and vegetables should be washed thoroughly under clean running water, and rinsed in cooled boiled water before preparation. Scrub hard surfaces of produces, such as melons, using a clean brush to remove dirt and contaminants.
- Keep perishable food out of the refrigerator for as little time as feasible during preparation.





 Defrost frozen foods in a refrigerator at 0-4°C, in a microwave, or under clean running water. Food defrosted by the latter two methods should be cooked immediately after defrosting. Do not defrost food at room temperature. Always defrost frozen ready-to-eat foods in a refrigerator. Except for food properly defrosted in the refrigerator, do not refreeze defrosted foods.



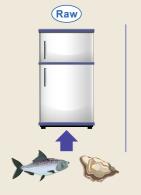
C. Cold Storage



Chilling does not kill bacteria, but slow them down from growing. If food is improperly chilled, it can enter the Temperature Danger Zone (4-60°C) and encourage bacteria to grow, increasing the risk of food poisoning.

- Perishable food should be wrapped or put into an airtight container, and stored at the correct temperature:
 - Chilled food: 4°C or below
 - Frozen food: -18°C or below
- Ideally, use separate refrigerators for raw foods and cooked or ready-to-eat foods. Otherwise, store cooked or ready-to-eat foods on the upper shelves of the refrigerator, and raw foods on the lower shelves.









- Transfer any opened foods into a clean container and mark with the name and date of opening before keeping them in the refrigerator.
- Check and record the temperature of the refrigerators regularly (e.g. twice a day).
- Do not overcrowd the refrigerator.

D. Cooking and Reheating



Proper cooking and reheating are important ways of eliminating pathogens including bacteria that can cause foodborne diseases.

- · Always cook or reheat foods thoroughly before serving. Use a food thermometer to ensure that the centre or the thickest part of the food reaches 75°C or above for at least 30 seconds.
- Follow the cooking instructions on the food packaging if present.



- · Preferably adopt the "cook-serve system" (i.e. serve the food right after cooking) to shorten the preparation time.
- Reheat foods only once; do not refrigerate again after reheating.

E. Hot and Cold Holding



Prolonged storage of food at room temperature can allow bacteria to thrive and spores to germinate, proliferate and even generate heat-resistant toxins.

- · Pre-cooked foods, especially rice, pasta, eggs, meat, poultry and gravy, should be stored properly in hot-or cold-holding devices within 2 hours of cooking if not served immediately.
- Preheat suitable hot-holding equipment before storing hot food ingredients. Hot food must be kept over 60°C.
- · Pre-chill cold-holding equipment before storing cold food ingredients. Cold food must be kept at 4°C or below.





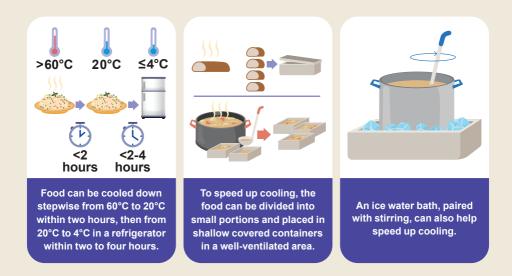
F. Cooling



Cooked food, if not immediately consumed, should be cooled down quickly using safe chilling methods. When food, such as cooked rice, pasta, noodles, beans, nuts, eggs, casseroles and meat-containing sauces, sits out at room temperature for too long, harmful bacteria can grow and produce toxins. Certain toxins are heat-stable and cannot be destroyed by thorough reheating.

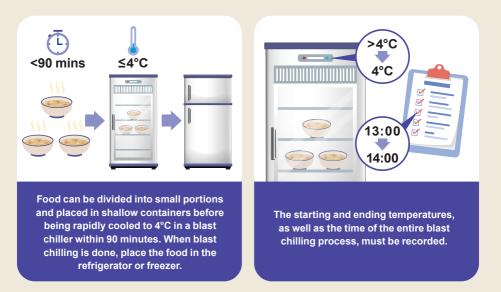
1. Two-stage cooling method

- Cooked food is divided into smaller portions and placed in shallow containers.
- Food is cooled down stepwise from 60°C to 20 °C within 2 hours, and then cooled further from 20°C to 4°C within 2-4 hours.
- A thermometer is used to ensure that the ice water temperature remains consistently at 4°C or below.
- An ice water bath, paired with stirring, can help to speed up the cooling process.



2. Blast chilling method

Food is divided into smaller portions and placed in shallow containers before being rapidly cooled down to 4°C in a blast chiller within 90 minutes.



G. Distribution

When portioning for sit-in dining:

- There should be clean and adequate space, equipment (e.g. electronic warming devices or insulated containers), and designated utensils for portioning. Sufficient manpower should be arranged to distribute the meals efficiently.
- Cooking and portioning should be performed in separate areas.
- There should be sufficient hand-washing facilities for food handlers.
- Kitchen staff appointed for portioning should wear hand gloves. They can
 wear hair nets, aprons and masks as appropriate. Gloves should be
 changed when they are torn or soiled.
- Food temperature should be checked just before distributing the meal. Hot
 food should be kept above 60°C while chilled food is at 4°C or below. All
 foods, once portioned, should be consumed immediately and finished within
 two hours.
- Reusable containers and cutlery should be stored in sealed containers that are rendered proof against dust and pests.

If community kitchens choose to provide buffet meals, they should ensure that:

- The warming devices and cold units are in good condition.
- The food temperatures are monitored; cold foods should be held at 4°C or below, while hot foods above 60°C.
- Core temperature of foods displayed should be checked by using a clean probe thermometer regularly.
- Follow the 2-hour / 4-hour rule.
 Leftover foods should be disposed of properly.
- Food should be covered during display.



H.Transportation and delivery

Meals prepared by food recovery programmes may be either consumed at site or provided to the people in need in the form of meal boxes. Food delivery agents should safeguard food against cross-contamination by hygienic transportation means and close monitoring of the right storage temperature. The service management should:

- Strictly control its delivery capacity by checking the time record against any delayed deliveries.
- Organise logistics well to shorten the food delivery time as much as possible.





- Clean contact surfaces of delivery containers and motorcycle storage compartment like rear trunk or tail box case with sanitisers, disinfectants or liquid soap thoroughly before and after each delivery.
- Store cold and hot food separately in insulated bags. Keep hot food at above 60°C and cold food at or below 4°C. Installation of thermometers for temperature records at containers and food storage compartment is useful for validating food temperature control measures.



 Organise the delivery load well to minimise unnecessary ransacking and exposing the food packs at ambient temperature. 4

Other Food Safety Issues

While ensuring that the food is safe to consume, it is equally important to address other safety issues that may arise during the food recovery process. These issues include but are not limited to, expiry dates, food allergies, pest and rodent control, food recalls, and the rapid alert system.

Expiry dates

Expiry dates indicate how long the food can be kept before it starts to spoil or can no longer be eaten. It is important to note that different types of expiry dates serve different purposes. The 'use by' date is about food safety, whereas the 'best before' date is about food quality but not safety.

A.'Use by' date

A 'use by' date on food is about food safety. The food can be eaten until the
'use by' date but not after. 'Use by' dates are typically found on foods that
deteriorate quickly, such as meat products or salads.

B.'Best before' date

 'Best before' date is about food quality but not safety. The food will be safe to eat after this date but may not be at its best. Its flavour and texture might not be as good as before. 'Best before' dates appear on a wide range of foods, including frozen, dried and canned foods. Nonetheless, consumers should avoid eating spoiled foods.



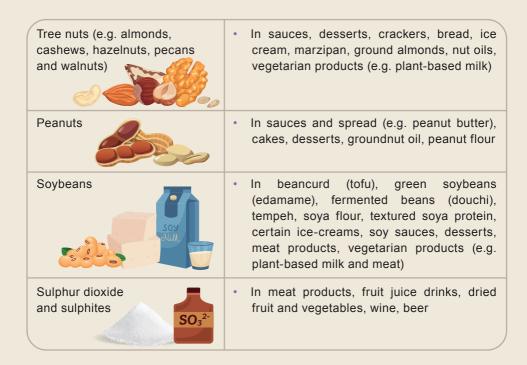
The date mark may become irrelevant once the packaging of the food is opened. Follow the manufacturer's instructions for storage time and conditions after opening, e.g. 'refrigerate after opening at or below 4°C and finish within 7 days'.

Food Allergy

Food allergy is a reaction of the body's immune system to some substances in food. A very low level of an allergenic substance may cause a potentially fatal allergic reaction in susceptible individuals.

Common food allergens include:

Allergens	Food examples in which allergens may be found
Cereals that contain gluten (e.g. wheat, rye, barley and oats)	 In foods containing flour, such as bread, pasta, cakes, pastry, meat products, sauces, soups, batter, stock cubes, breadcrumbs, foods dusted with flour, vegetarian products (e.g. plant-based milk)
Crustaceans (e.g. prawns, crabs and lobsters)	In shrimp paste
Eggs	 In cakes, mousses, sauces, pasta, quiche, some meat products, mayonnaise, foods brushed with egg
Fish	 In some salad dressings, pizzas, relishes, fish sauce, other sauces (e.g. soy and Worcestershire sauces)
Milk	In yoghurt, cream, cheese, butter, milk powders, foods glazed with milk
Molluscs (e.g. mussels and oysters)	In oyster sauce



Symptoms of food allergies usually develop within several minutes to two hours after consuming the offending food. Common food allergy symptoms include swollen face, swollen tongue or lips, shortness of breath and itchy skin. Food allergies can cause a potentially fatal reaction known as anaphylactic shock in severe instances. This can present severe symptoms, including constriction of the airways, difficulty breathing, severe drop in blood pressure and loss of consciousness. Anaphylactic shock requires immediate emergency care.

Allergen Information

Allergen

How to avoid food with allergens?

- Read food labels to identify if any food or food ingredients of your allergic concern are present.
- Avoid the food or food ingredients which you are allergic to.
- As best practice, anyone who prepares or donates food for a food bank should properly label it, describing what it is, when it was made, and any allergens so that those with food hypersensitivities can avoid it.

 Inform those preparing meals (i.e. staff of community kitchens) to avoid using food ingredients containing allergens.

Pest and rodent control

Pests such as insects and rodents can spread germs to food, so it is crucial to ensure that the environment for handling food is free from pests. Food remnants should be cleared every night, and accumulation of articles should be avoided. Articles stored in the premises should be moved regularly to prevent rodents or pests from harbouring inside.

Food recall

A food recall is defined as an action to remove from sale, distribution and consumption, foods which may pose a safety hazard to consumers. Food businesses can receive recall notifications through the Rapid Alert System.

A food product may occasionally need to be recalled (when customers are asked to return or destroy a product) due to some irregularities, including:

- · physical contamination, such as glass or metal fragments
- chemical contamination, such as excessive levels of chemical contaminants
- · containing harmful microorganisms
- containing food allergens without correct labels

Food businesses might learn about the problem of the food product from:

- the product's manufacturer
- a supplier or distributor
- a trade organisation

Food businesses might identify a problem in a food product that makes it potentially unsafe to consume. If this occurs, they should immediately stop using or selling it and notify the Centre for Food Safety (CFS). They might need to alert anyone who has used or plans to use the product in issue.

Rapid Alert System

The CFS has been continuously tracking overseas food safety incidents and evaluating their potential effects on local public health. When a local impact is likely, the CFS will notify the trade and the general public so that they can act as soon as possible. Through the CFS' Rapid Alert System, food businesses can now receive alert messages related to food product recall by email, fax, and SMS.



Click here to learn more and to register for the system.









