AUSTRALIAN INSTITUTE OF ACCREDITATION

FOOD SAFETY SUPERVISOR COURSE REFERENCE MANUAL

TABLE OF CONTENTS

INTRODUCTION TO FOOD HYGIENE

In an environment where food is being produced, you may have a number of responsibilities in relation to food safety, including:

- Understanding the roles and responsibilities as food handlers under the legislation
- Understanding how to reduce risk through good personal hygiene, cleaning and sanitising
- Identifying and apply safe food handling practices
- Understanding and conducting temperature monitoring
- Recognising, preventing and minimising food hazards at your premises, and
- Making sure that your company's Food Safety Program is followed

By following good food safety and hygiene practices in your workplace, you will be helping to prevent some of the five million food poisoning cases reported every year in Australia.

FOOD POISONING STATISTICS

Did you know that everyday in Australia 11500 people suffer from some sort of Food Borne disease?

That's 4.2 million cases every year and these are likely to be conservative estimates. Health Authorities have found that Food Poisoning is consistently under reported. This costs Australia more than 2.6 billion dollars every year.

THE COSTS OF FOOD POISONING AND POOR HYGIENE

A food poisoning outbreak can be devastating. Aside from people getting sick, what could some of the other consequences be?
For a business and its employees, a food poisoning outbreak could mean:

- Legal action
- Closure
- Fines
- Civil action
- Loss of business
- Loss of jobs
- Bad publicity, and
- Loss of customer confidence

Food poisoning can affect many people, not just the person who becomes ill.

FOOD STANDARDS AUSTRALIA & NEW ZEALAND - NATIONAL STANDARDS

There are laws to ensure food and beverages remain safe and suitable for human consumption. Food Standards Australia & New Zealand (FSANZ) developed National
Food Safety Standards designed to help prevent the incidence of food borne illness in Australia.

In the food industry, FSANZ is responsible for surveillance, enforcement, information supply, research, risk assessment advice and the development of food safety standards. These national standards are detailed in the document titled Safe Food Australia.

If you want to know more visit this link:
Safe Food Australia

STATE LEGISLATION

States have individual acts and regulations that govern food hygiene.
You must ensure that you do everything reasonably practicable to ensure the food you serve is safe.
Penalties may apply if you knowingly serve food that is unsafe.
To find out more about these acts, follow the link below.
Food Acts and Regulations

FOOD SAFETY OFFICER

Food safety officers, who may also be known as Environmental Health Officers (or EHOs) are inspectors responsible for enforcing individual State Food acts.
The Food Act in each state and territory prescribes certain rights to Environmental Health Officers - let's look at what these are.

ENFORCING THE FOOD LAWS

An Environmental Health Officer (EHO) has certain rights, including the right to:

- Enter and inspect premises, yards, outbuildings at any reasonable time
- Ascertain compliance
- Inspect and conduct inquires about equipment, fittings, fixtures and any food storage, preparation, packaging, handling or selling area
- Open and examine any package
- Take photos or audio visual recordings if necessary
- Stop, detain or search any food transportation vehicle
- Take samples of food items
- Request help from the police if required

Remember - You should always allow entry and abide by any lawful request.

FOOD SAFETY PROGRAMS (FSP)

To reduce the risks of food-borne illness, and to make sure that they meet customer's expectations and any legislative requirements, many companies develop a food safety program. In some states a food safety program is a legislative requirement.

A Food Safety Program is made up of several components which may include:

- Identification of food safety risks
- Control and monitoring those risks
- Corrective actions
- Reviewing and
- Record keeping

A Food Safety Program must be supported by:

- Ongoing training for food handlers
- Senior management
- Internal audits and Inspections

THIS TRAINING

The training you are doing now is to ensure that you have the necessary skills and knowledge to implement the requirements of the legislation and may form part of an overall Food Safety Program.
The main concern of any Food Safety Program is the prevention of food poisoning.
We will look at an overview of food poisoning in the next section.

KEY POINT SUMMARY

Let's summarise the key points of this section.

- The costs of food Poisoning are high- conservative estimates put the financial cost at $2.6 billion every year
- States have individual acts and regulations that govern food hygiene
- An Environmental Health Officer is "a person authorised under the Act or other legislation for the purposes of enforcement of the Act or similar purposes"

To find out more about these acts, you can follow the link below before moving on. The information will open in a new window and will not prevent you from continuing with the course.
Food Acts and Regulations

INTRODUCTION TO FOOD POISONING

This section of the course will give you a brief introduction to the symptoms and risks of food poisoning.
Before we do that, however, it's important that you understand the difference between food spoilage and food poisoning.
Have you ever eaten food that tasted and smelt great but later made you sick? This is what we call food poisoning. Food poisoning is when food may appear to be fine but is contaminated by bacteria. You cannot see, smell or taste the bacteria but it can make you very sick.

FOOD SPOILAGE

Food poisoning and food spoilage are not the same thing.
Food spoilage is when food is unacceptable to eat based on its smell, look or taste.
For example:

- Sour milk which looks and smells off
- Bread that has gone mouldy
- Mushy tomatoes

It's easy to control food spoilage (and the associated bacteria) because you can smell, see or taste it and wouldn't want to eat it.
Remember - Food Poisoning is harder to control because you cannot see the bacteria - the food may look, smell and taste great - but can make you sick!

SYMPTOMS OF FOOD POISONING

If you or someone you know has suffered from food poisoning, you probably realise how severe the symptoms can be.
The symptoms of food poisoning include:

- Nausea
- Vomiting
- Fever
- Headaches
- Diarrhoea
- Weakness
- Abdominal Cramps

The final outcome of food poisoning can be very severe, including things like:

- Severe dehydration
- Organ failure
- Severe arthritis
- Death

GROUPS AT RISK

Certain groups within society are more at risk from food poisoning than others. These include:

- Children
- The elderly
- The sick
- Pregnant women

These groups usually have weaker immune systems than the general population. The chances of contracting a food poisoning illness is significantly increased, as is the potential severity of the illness.

FSANZ estimates that more than 4 million Australians are affected by some type of food borne illness each year.

WHY ARE THERE LAWS FOR FOOD SAFETY?

The first thing we need to look at in relation to food safety are the legal responsibilities. In Australia, we have laws governing all aspects of food manufacturing. These laws are in place to make sure that food is not contaminated while it is being:

- Processed
- Stored
- Prepared
- Served
- Distributed

Food safety in Australia is governed by the Food Standards Code, which was developed by Food Standards Australia New Zealand (FSANZ).

NATIONAL FOOD SAFETY STANDARDS

Arising out of the Food Standards Code are the National Food Safety Standards. These standards were adopted in 2001 in all states and territories in Australia.
The standards apply to all food businesses in the following industries:

- Food Processing - manufacturers, flour mills, canneries, packers, bakers and breweries.
- Retail -supermarkets, convenience stores, grocers and delicatessens.
- Health - hospitals
- Community Services - childcare centres, nursing homes, hostels and Meals on Wheels.
- Hospitality - restaurants, cafes, B & Bs and hotels.
- Transport & Distribution - warehouses and distribution centres

CURRENT NATIONAL FOOD SAFETY STANDARDS (FROM THE FOOD STANDARDS CODE)

The following standards, taken from the Food Standards Code, are currently applied to businesses that are responsible for the production, sale, processing or transporting of food:

- 3.1.1 Interpretation and Application
- 3.2.2 Food Safety Practices and General Requirements
- 3.2.3 Food Premises and Equipment, and
- 3.2.1 Food Safety Programs

Let's look at what each of these cover.

STANDARDS 3.1.1 AND 3.2.2

The Interpretation and Application Standard defines and explains the terms used across all the food safety standards.

The Food Safety Practices and General Requirements standard covers food handling practices for receipt, storage, processing, display, packaging, transport, disposal and the recall of food.

It requires that food handlers and their supervisors have the skills and knowledge relating to health and hygiene, cleaning and sanitising, and maintenance of food premises and equipment.

This standard must be met by all businesses except charities, community groups and businesses operating from temporary premises or private homes.

STANDARDS 3.2.3 AND 3.2.1

The Food Premises and Equipment standard describes which standards are required for food premises, fixtures, fittings, equipment and food transport vehicles. All businesses must meet these standards.

Finally, the Food Safety Programs standard explains what is required for a documented food safety program showing how the business complies with standard 3.2.2.

AUSTRALIAN FOOD SAFETY LEGISLATION

For further detail on the national standard visit foodstandards.gov.au.

The legislative requirement to comply with the national standard, training and certification requirements can differ between state and territory governments.

For detail on state legislation visit: foodstandards.gov.au

LEGISLATION – SUMMARY

OK, you should now have a good understanding of:

- The legislation surrounding food safety, and
- Some of the requirements that arise from the legislation.

Under the Food Safety Standards, each organisation needs to have a system in place to manage these legal requirements. This will generally take the form of a Food Safety Program, which we will look at next.

GENERAL EMPLOYEE REQUIREMENTS

The Food Safety Standards requires that all food handlers and supervisors have skills and knowledge in food safety and hygiene. Making sure that appropriate training is provided to all staff is generally the responsibility of the Food Safety Supervisor (FSS).

These requirements include an understanding of the following:

- How to prevent cross contamination
- When hand washing is required
- How to handle high risk foods
- Personal hygiene practices
- How to maintain a clean work area and equipment
- How illnesses need to be reported

BUSINESS OWNERS SUPPORTING FOOD SAFETY SUPERVISORS

To make sure that the FSS can perform their role, there are requirements for businesses to support the FSS under the Food Safety Standards.
A business owner should make sure that the FSS has everything they need to perform their role properly, including:

- Training for the FSS in their role and responsibilities
- Any other relevant training
- Allocated working time to complete supervisory tasks
- The authority to supervise other staff (and staff should know who the Food Safety Supervisor is), and
- Training on what to do and where to go if something goes wrong with food safety in the business

FOOD BORNE HAZARDS

One of the key focuses of a Food Safety Program is to prevent the contamination of food by physical, chemical and biological contaminants

People who eat food containing contaminants can become very sick, so it is important that the Food Safety Program in place effectively controls the risks presented by hazards.

HAZARDS

The three main categories of food safety hazards, or contaminants, are:

- Physical hazards
- Chemical hazards, and
- Biological hazards

PHYSICAL HAZARDS

Physical Hazards are objects or foreign matter which originate from:

- Foodstuff or raw material, such as: stones, stalk, bones, seeds or dirt
- Equipment or environment, such as: bolts, wood, glass, insects or droppings, and
- Food handlers, such as: hair, nail polish, jewellery or band aids

CHEMICAL HAZARDS

Chemical Hazards are poisonous or harmful chemicals, which can be further broken down into:

- Cleaning and pest control chemicals, such as: detergent, oil, grease or pesticides
- Natural toxins, such as: rhubarb leaves or solanine in green potatoes
- Agricultural or environmental, such as: mercury in fish, fertilisers or antibiotics, and
- Food additives above safe limits, such as: preservatives e.g. sulphites & colours

BIOLOGICAL HAZARDS

Biological Hazards are micro-organisms, which can come from one of five main groups:

- Mould
- Yeast
- Bacteria
- Viruses
- Parasites

Most disease-causing bacteria grow or survive because of bad food handling practices, insufficient cooking temperatures, storage at incorrect temperatures and poor personal hygiene. Some examples include:

- Salmonella and Campylobacter - survive in food due to insufficient cooking or reheating temperatures
- Bacillus cereus and Staphylococcus aureus - grow in food due to storage at incorrect temperatures
- Cross-contamination (person to food/food to food) can occur due to poor handling or personal hygiene

OTHER WAYS MICRO-ORGANISMS ARE SPREAD

Viruses such as Hepatitis A, Rotavirus and Norwalk do not grow in food, but can be passed from person to person through food.

Parasites such as Cryptosporidium and Giardia can cross over into food via contaminated water.

While food spoiling micro-organisms, such as mould on bread or slimy meat, don't cause illness, they do make the food unfit for sale or consumption.

FAT TOM - HOW FOOD POISONING BACTERIA GROW

Food poisoning bacteria can reproduce very quickly - their rate of reproduction depends on a combination of factors, which are represented in the acronym FAT TOM. The letters stand for:

- Food type
- Acid
- Time
- Temperature
- Oxygen, and
- Moisture

FAT

In FAT, F stands for Food type.

Food poisoning bacteria require a supply of nutrients and will grow and multiply in food such as dairy, meat and seafood, which contain protein, and rice and pasta, which contain carbohydrate.

A stands for Acid.
Foods that have a low acidity (pH 4.5 to 7) are ideal for bacterial growth - these are generally high moisture protein foods. In more acidic foods (foods with pH 4.5 or less) such as pickles, yoghurt and salami, bacteria find it harder to reproduce.

T stands for Time.
In the right conditions, one bacterial cell can multiply to more than two million in seven hours - so the longer food is left in the wrong conditions, the greater the chance of food poisoning.

TOM

In TOM, T stands for Temperature.

Bacterial growth is possible between 5˚ to 60˚ C (the danger zone), and particularly quick between 20˚ to 40˚ C.

O stands for Oxygen.
Most food poisoning bacteria needs oxygen to grow - this is referred to as 'aerobic' bacteria.

Finally, the M in TOM stands for Moisture.
Food poisoning bacteria grow well in high moisture foods containing protein, (such as meat, dairy and seafood), and carbohydrates (such as cooked pasta and rice). In low moisture foods, like flour and uncooked rice, bacterial growth slows down or stops.

ALLERGY AND INTOLERANCE TO FOOD

As well as food poisoning, there are other negative impacts food can have on people. Some people have an allergy or intolerance to certain food types. Effects can be:

Skin irritation, like eczema and dermatitis

Gastrointestinal problems, like nausea and vomiting

Respiratory problems, like asthma and sinus, or

In extreme cases, life-threatening effects, such as an anaphylactic shock

Allergies usually result in an immediate, immune reaction to protein in food. Food intolerance is usually due to a chemical reaction to food, such as not being able to digest lactose in milk. Symptoms often develop gradually and are related to how much of the food is consumed over time.

ALLERGENS AND FOOD LABELLING

Since new labelling standards were introduced in 2003, food labels must contain warnings about known allergens to reduce the chances of people consuming foods they are allergic to.

Some known allergens are:

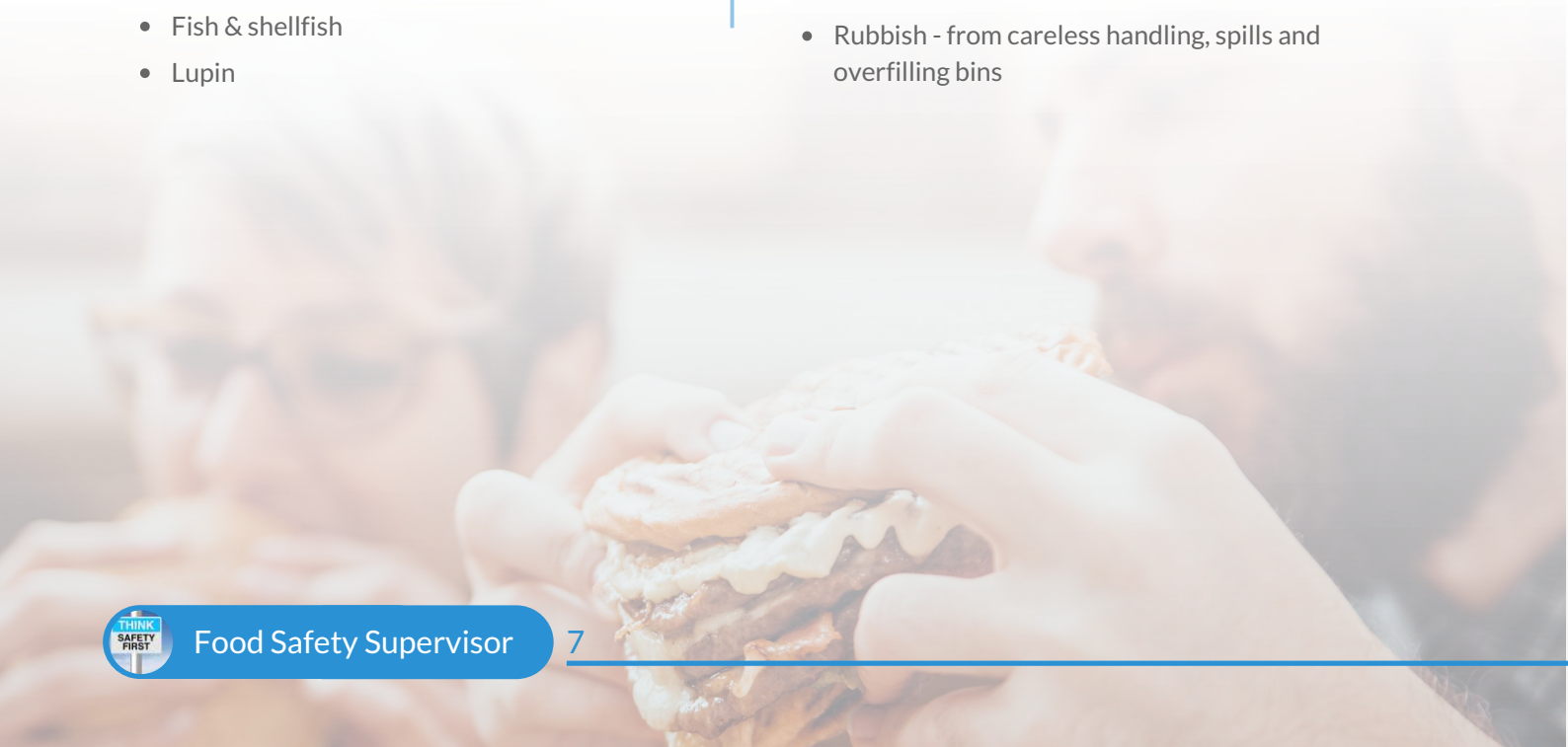
- Peanuts
- Tree nuts & sesame seeds
- Wheat (gluten)
- Milk
- Eggs
- Soybeans
- Fish & shellfish
- Lupin

HOW FOOD BECOMES CONTAMINATED

So far we've discussed how food can become contaminated by physical, chemical and biological hazards. What we haven't covered is HOW all this happens - how does food become contaminated?

Contaminants can spread to food in a range of ways, which include:

- People - from bacteria on hands, personal items or dirty clothes
- Raw materials & ingredients - from meat, seafood, eggs or dirt on vegetables
- Pests - from rats, mice, flies, cockroaches or birds
- Equipment & workplace - From unclean or chipped surfaces or dirty premises, and
- Rubbish - from careless handling, spills and overfilling bins



CONTROLLING FOOD HAZARDS

The focus of the FSP, and the role of the FSS, is to control these hazards, and to prevent contamination of food.

Food hazards are controlled in the workplace by focusing on:

- Regular and effective pest control
- Thorough cleaning and sanitation
- Maintenance of equipment and the workplace
- How received goods are handled and stored
- Staff work practices, and the environment in which they work
- How chemicals are handled and stored
- Staff training
- Personal hygiene of all staff, and
- Time and temperature control

FOOD SAFETY HAZARDS – SUMMARY

OK, now you should have a good idea of:

- What food hazards are
- What factors affect the growth of bacteria in food
- How contaminants are spread, and
- How food hazards can be controlled

Below and on the following two pages, we are going to review and summarise how we handle food safely...

HANDLING FOOD SAFELY

Contamination of food and growth of Bacteria can occur during any stage of food production.
In this section we will look at some 'Quick Tips' for each stage of food production that will help you make sure the food is served safe:

- Receipt
- Storage
- Cooking
- Cooling
- Reheating
- Serving

In addition, we will also review the requirements of food business and food handlers for safe food disposal.

HANDLING FOOD SAFELY – RECEIPT

The following quick tips apply for the receipt of food:

- Always check temperatures of potentially hazardous foods
- Check that packaging is clean, dry and has not been tampered with or damaged and
- Check for use-by or best before dates and quality

HANDLING FOOD SAFELY – STORAGE

Storage is important to maintain quality, prevent damage and cross contamination.
Quick Tips:

- Always store like food with like foods
- Separate raw and cooked foods
- Keep food off the floor
- Always cover food during storage
- Always date and label food
- First in, First Out (FIFO)
- Store food at the correct temperatures
- Clean storage areas regularly

HANDLING FOOD SAFELY – COOKING

Cooking can be a particularly hazardous step if not done correctly.
Quick Tips:

- Always ensure food is cooked adequately
- Always ensure frozen food is fully defrosted before cooking
- Handle food as little as possible during the process

Ensure food contact surfaces are cleaned and sanitised.

HANDLING FOOD SAFELY – COOLING

While food is cooling it is in the temperature danger zone. Food needs to be cooled as quickly as possible to reduce the growth of bacteria.

The Food Standards Code 3.2.2 states "that food needs to be cooled from 60˚C to 21˚C within two hours and from 21˚C to 5˚C within a further four hours".

If you don't have access to blast chillers you can cool food quickly by:

- Removing it from a heat source, such as take out of pot used for cooking
- Decanting or pouring into shallow containers with a large surface area
- Use of an ice bath

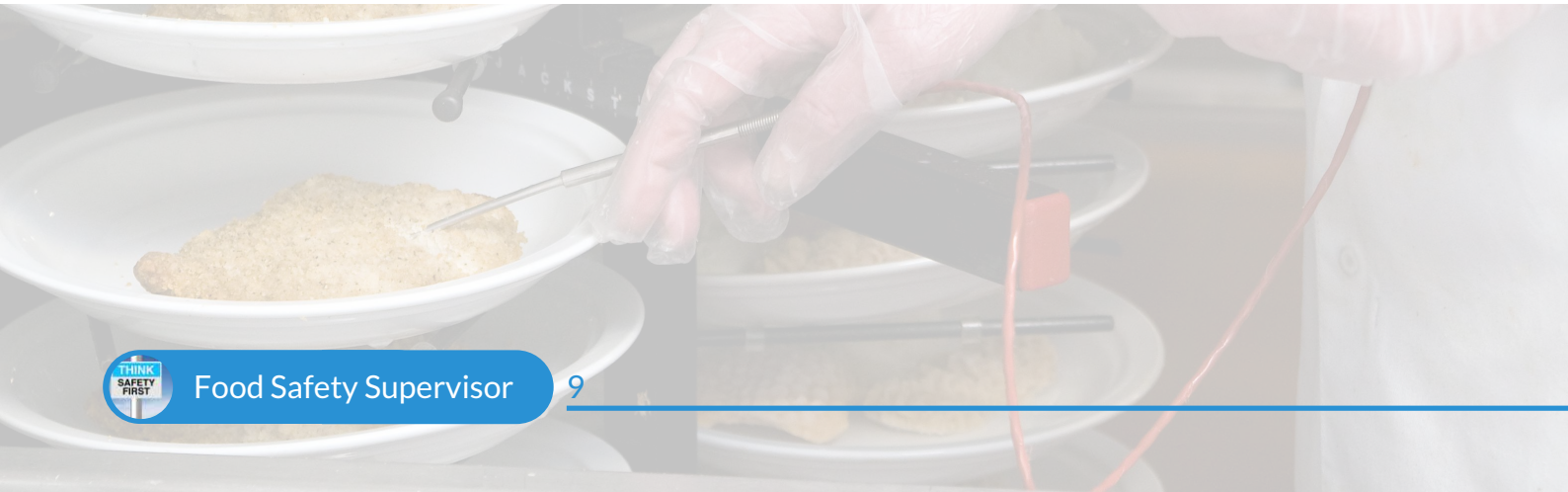
Remember to cover, date and label the food before placing it in the cool room.

HANDLING FOOD SAFELY – REHEATING

Reheating is another stage which takes food through the danger zone. As a consequence there are certain rules that you must follow when heating and
cooling food.

- Food can only be reheated - Once
- Do not re-heat food that is not fully defrosted and
- Always check the temperature of reheated food before serving

When food is cooked or reheated it goes through the danger zone. Remember that each time food passes through the temperature danger zone, bacteria is multiplying. As a consequence, there are certain rules you must follow when reheating food.



HANDLING FOOD SAFELY – SERVING

Food service is the final step between the food handler and the person who needs to be protected from bacteria.
Make sure you:

Always ensure equipment and utensils used for serving food is clean and sanitised

Ensure that temperature checks are done on hot and cold displays. (Remember that hot food should be held above 60 degrees celsius minimum and cold food should be under refrigerated temperatures
0˚C - 4˚C)

Do all you can to protect food from contamination

FOOD DISPOSAL

A food safety program must outline the organisation's procedures for safe food disposal. Food disposal can refer to any food that is:

- No longer safe to eat
- Suspected of no longer being safe or suitable
- Subject to a recall
- Subject to return to its supplier

FOOD DISPOSAL REQUIREMENTS

Food safety standard 3.2.2 (Clause 11) describes the requirements of food businesses when disposing of food. Food that is to be disposed of must be kept separate from other foods and be clearly marked to ensure it is not used or consumed incorrectly prior to disposal or destruction, or until it is deemed safe to consume.

In addition, it is prohibited to sell food that has already been served to another person unless that food item was wrapped when served and has remained completely wrapped throughout the entire process.

To view the relevant section of the Food Safety Practices and General Requirements Standard 3.2.2, follow the link below.
Food Safety Standards

WHAT IS HACCP?

HACCP is a system which looks at, or analyses, all the steps in a food production process to identify all possible food safety hazards. The letters of HACCP stand for:

- Hazard - something that can harm the consumer
- Analysis - what is the risk
- Critical - essential for food safety
- Control - check or monitor, and
- Point - a step in the process

HACCP has been widely used by industry since the late 1970s, and is now internationally recognised as the best system for ensuring food safety.

HACCP PRINCIPLE 1 - CONDUCT A HAZARD ANALYSIS

Hazard Principle 1 is to conduct a hazard investigation. During this process, you'll need to ask the question: What is likely to occur?

A hazard investigation involves looking for potential food hazards, and finding ways to control those hazards.

Some examples of potential sources of food hazards are:

- People
- Raw materials
- Equipment
- Pests, and
- Rubbish

Ways of controlling hazards include:

- Good personal hygiene
- Proper storage of food
- Maintaining equipment
- Pest control, and
- Rubbish removal

FOLLOW THE SEVEN PRINCIPLES OF HACCP

As we've discussed, HACCP is a system which identifies, evaluates, and controls food safety hazards. The system is based on seven principles.

- Conduct a hazard analysis
- Determine the critical control points (CCPs) in the process
- Establish critical limits for each CCP
- Establish monitoring procedures
- Establish corrective actions
- Establish an effective record-keeping and documentation system, and
- Establish verification procedures

The seven principles of HACCP are applied to each of the stages identified in your food process e.g : Delivery, Storage, Cooking, Cooling, Reheating, Serving. These stages are often documented as a flow diagram.

Let's look at each of the seven principles of HACCP.

HACCP PRINCIPLE 2 - DETERMINE THE CRITICAL CONTROL POINTS (CCPS)

Principle 2 is to determine the Critical Control Points. During this process, you need to ask the question: What is to be checked and measured?

Critical control points (CCPs) are points during the food production process where food safety hazards can be controlled or eliminated - it could be a place, practice or procedure.

A CCP must be able to be controlled and monitored (i.e. measured, assessed and recorded).

CRITICAL CONTROL POINT – EXAMPLE

For example, food storage in your business could be identified as a CCP.

A food safety hazard at this point could be the refrigerator temperature, or how the food is stored.

By checking that the refrigerator temperature is at the correct setting and that the food is covered, and in the correct wrapping or container, the food safety hazard can be controlled or eliminated.

HACCP PRINCIPLE 3 - ESTABLISH CRITICAL LIMIT(S) FOR EACH CCP

HACCP Principle 3 is to establish critical limits for each CCP. For this principle, you need to ask the question: What limits are allowed?

Once you have identified a CCP, you need to set up critical limits or guidelines to make sure that hazards at that point in the process can be controlled or eliminated.

Critical limits help to show whether conditions are acceptable or unacceptable.

Critical limits need to be: measurable (time, temperature); precise (<5˚C); and workable (able to be carried out).

CRITICAL LIMITS

Critical control limits are usually based on standards or codes of practice which have been developed from scientific evidence (for instance, cold storage needs to be less than 5˚C).

If storage has been identified as a CCP, your guideline or critical limit would be that the cold storage temperature must be less than 5˚C at all times.

In the next section, we'll look at ways of monitoring critical limits.

HACCP PRINCIPLE 4 - ESTABLISH MONITORING PROCEDURES

Principle 4 is to establish monitoring procedures. This principle needs you to ask the question: What, how, who and when to check?

Potential hazards are controlled by monitoring, using things like checks, measurements or tests. These checks and tests can help to identify and locate problems, as well as point to a break down in processes, and allowing preventative measures to be taken.

Monitoring includes checking things like:

- Appearance
- Taste and smell
- Observation, and
- Physical measurement (such as cooking time and temperature)

DETAILS OF MONITORING

Your Food Safety Program needs to include the following details about monitoring, for example:

What? Fridge temperature
How? Thermometer
Who? Kitchen hand, and
When? Weekly

It is important to keep good monitoring records as part of the process, as they will help you to verify your Food Safety Program when your business is audited.

Using the refrigerator temperature example again, you may decide that the monitoring procedure for this CCP involves a weekly check by the kitchen hand of the temperature gauge in each refrigerator in the kitchen area, with the details logged on a running sheet. A copy of this record is filed for future reference.

HACCP PRINCIPLE 5 -ESTABLISH CORRECTIVE ACTIONS

HACCP principle 5 requires you to establish the corrective actions you need to take should a CCP exceed a critical limit. When establishing correct actions, you need to ask the question: What do you do if something is wrong?

When there is a problem (a process deviation) corrective action must be taken. This should include both short and long-term actions and solutions, including steps such as:

- **Correction or rework** - Adjust the product or process to regain control
- **Isolate, discard or destroy** - Deal with non-conforming products
- **Review process** - Determine the cause of non-compliance to ensure that it will not recur

Again, written records must be kept during this process for future reference.

CORRECTIVE ACTIONS – EXAMPLE

Going back to the refrigerator example, let's say that the kitchen hand who does the weekly emperature check has found that the temperature in fridge A is at 6o degrees Celsius.

Your corrective action plan may look something like this:

- Kitchen to be notified immediately. If high risk food has been at 5-60 degrees C for longer than four hours, it must be thrown out.
- Notify the Food Safety Supervisor, who then adjusts fridge temperature or organises repair or replacement of fridge or thermometer
- Review frequency of ongoing temperature monitoring
- Write, file and distribute an incident report, and
- Review training of staff

The next step looks at the value of good record keeping.

HACCP PRINCIPLE 6 - ESTABLISH EFFECTIVE RECORD KEEPING AND DOCUMENTATION

Principle 6 is to establish record keeping and documentation systems. This principle requires you to ask the question: How and where are records kept?

A vital part of an effective FSP is making sure all records required in the various parts of the HACCP plan are stored and accessible if needed.

TYPES OF RECORDS KEPT

The types of records you would need to retain include records of:

- Incoming goods,
- Cold storage, and
- Cooking, reheating and holding

Other key records include some of the support programs, such as pest control records, approved supplier list and equipment maintenance and calibration. Support Programs cover several or all of the steps in the process.

All checks and tests need to be documented on standard forms and maintained for a minimum of two years. They need to be kept in a safe and organised system, which is easily accessed for auditing.

Remember: A key requirement of a HACCP based system is that accurate and efficient records are kept of all areas that are critical to food safety.

HACCP PRINCIPLE 7 - ESTABLISH VERIFICATION PROCEDURES

Finally, HACCP principle 7 requires you to establish verification procedures. This principle requires you to ask the question: How do you know the system is working?

Verification means methods, procedures or tests that are done at least once a year to prove that the HACCP Food Safety Plan is working properly, and that it is accurate and effective in producing safe food.

Verification should be done regularly, and involves an audit of all aspects of your business, including monitoring, corrective action, support programs and a review of all your records.

RECORD KEEPING – EXAMPLE

Let's go back to the refrigerator example, as it illustrates some reasons why it is important to keep records and documents.

A copy of the temperature log will be useful for kitchen staff trying to determine whether food has been stored at incorrect temperatures. It may also be helpful for the maintenance people who repair the fridge, as well as those who purchase equipment.

The log and any maintenance documents may also be looked at as part of the FSP auditing process.

HOW TO VERIFY YOUR SYSTEM

Some of the ways to verify that your Food Safety Program is working include checking that:

Records are completed correctly and kept up to date

Non-conformances (process problems) are recorded and corrective action is taken

- Food handlers are following correct personal hygiene procedures
- Correct cleaning chemicals and procedures are being used
- Thermometers are calibrated correctly and regularly, and
- Time and temperature recording devices are working correctly
- Records of verification activities and reviews must be kept for auditing purposes.

If there are changes to the business or processes, or there are customer complaints or loss of control, verification needs to be done more frequently.

SIMILAR BUT NOT THE SAME: HACCP AND FOOD SAFETY PROGRAMS

The requirements of Standard 3.2.1 of the Food Standards Code (regarding Food Safety Programs) are similar but not identical to the principles of HACCP.

Both involve a documented system which identifies and controls food safety hazards. However, Food Safety Programs require documented support programs (such as training), as well as documentation which identifies and controls food safety hazards.

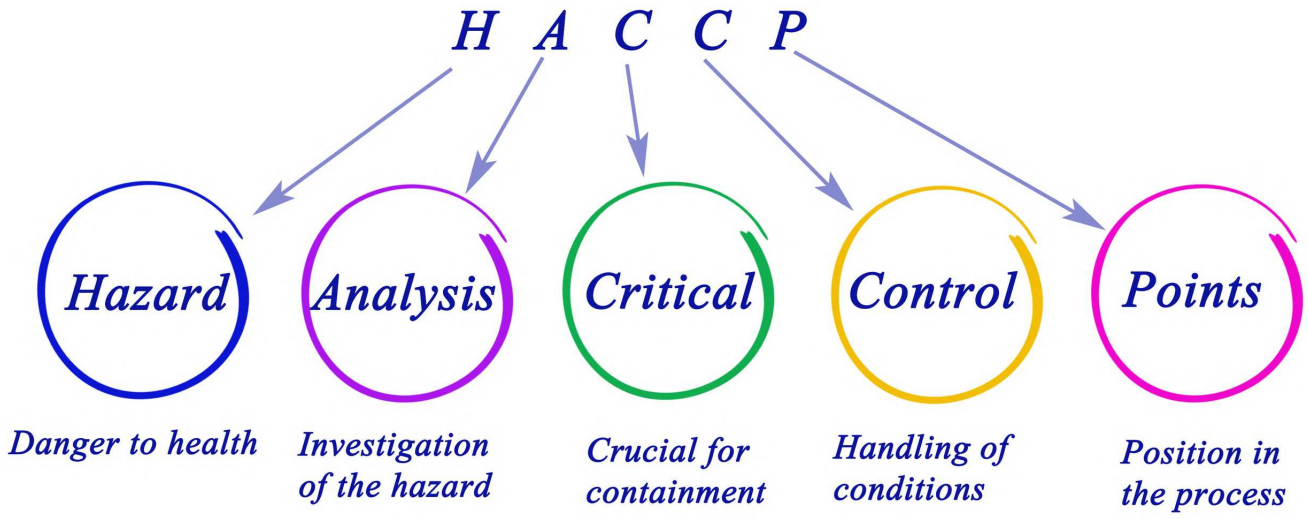
HACCP, on the other hand, assumes that businesses already have support programs in place, and focuses only on food safety hazards and controls.

HACCP – SUMMARY

At this stage, you should have a good understanding of:

- The 7 principles of HACCP
- How to practically implement those 7 principles, and
- The information you need to include as part of your FSP

One of the earlier stages in the HACCP process was to develop a flow diagram of the food processing steps followed in your business. In the next section, we're going to look in more detail at each of these steps, looking at some of the more common hazards and how to control them.



FOOD PROCESSING STEPS

One of the first steps in developing a Food Safety Program is drawing a flow chart showing the food handling activities of your business. The flow chart shows all steps in the process, from purchasing ingredients through to serving food to customers.

Now we will look at some common steps and procedures in the food handling process, and provide some practical directions on how to control some of the potential hazards at each step.

STEP 1 - GOODS RECEIVAL

The first step in the food handling process is goods receival, which involves receiving purchased or ordered food and ingredients.

When receiving food, you must never accept it unless you can identify it and trace it back to its supplier. The food must be protected from contamination, and if it is a high risk food like meat, dairy or seafood, it must be at the right temperature.

There are a number of potential hazards which need to be considered when ordering and receiving food and ingredients from a supplier. These include:

- **Physical objects,** such as damage to packaging, and pest activity
- **Chemical contamination,** which affects the quality of supplies
- **Bacteria growth,** which results from incorrect storage or transport temperatures, and
- **Cross contamination,** which can arise from problems with supplier quality control or packaging

GOODS RECEIVAL - CONTROL OF HAZARDS

When receiving goods, following a checklist can help to make sure that any potential hazards are identified and controlled, and that your received goods are the best quality possible.

Part of reducing the risks of hazards arising from goods received is making sure that you select quality suppliers. When selecting a supplier, make sure that they are reputable and certified. Don't go for the cheap supplier if you feel that the quality of your supplies is compromised.

It's also important to make sure you regularly review your suppliers - if the quality is not consistently good, change suppliers.

POINT OF RECEIVAL

At the point of receival, a thorough checklist can help to make sure that any potential hazards are identified. A checklist should require the receiver to:

- Check the use-by, best-before or packed on dates
- Check the quality
- Check the appearance and flavour of the food
- Inspect packaging for damage or signs of pest infestation
- Check that food has been kept at the right temperature. High risk foods should be delivered at less than 5˚ C or more than 60˚ C
- Check that the labelling is correct, and that it includes identity, batch, date, and manufacturer's details, and
- Inspect delivery vehicles and make sure that they are certified, clean and well-maintained

Those responsible for receiving goods must also keep accurate records of deliveries, dates, product details, use-by or best-before dates and temperatures.

GOODS RECEIVAL - CORRECTIVE ACTION

Corrective action refers to what you do to fix the situation when food handling risks are present. Unsafe food, or food that does not meet the agreed quality standards, must be:

- Rejected at the delivery stage
- Put to one side (isolated), awaiting return, or
- Returned to the supplier

Your supplier should consistently provide good quality food and ingredients, and you should be confident that it has been processed, packaged, stored and transported correctly. If this is not happening, you should change suppliers.

STEP 2 – STORAGE

Following on from receival is the storage of goods. Storage presents a number of potential hazards that you need to make sure are controlled.

When stored, food needs to be in the correct location, and at the correct temperature, so that it remains in top condition.

When your food and ingredients are delivered or received, you must make sure that all products - particularly cold and frozen foods - are immediately put away in the correct storage section.

STORAGE - POTENTIAL HAZARDS

There are a number of potential hazards which need to be considered when storing food and ingredients. These include:

- Physical objects: Hair, dirt and pests can get into food through damaged packaging or incorrect storage
- Chemical contamination: Incorrect storage of food can mean that chemicals, such as cleaning products or pesticides, could contaminate food
- Bacteria growth: Can result from storing food at incorrect temperatures, and
- Cross contamination: Can occur when food is handled and stored incorrectly - for example, raw meat should not be stored above ready to eat food in the fridge, as it could drip onto the food below it.

STORAGE - CONTROLLING HAZARDS

Generally the main area for potential hazards in relation to storage is the cool room and freezer. By following a checklist that includes the things below, you'll be able to make sure that potential food hazards are controlled. This will also ensure that your cold and frozen ingredients are stored safely. Things that need to be checked include:

- Temperature gauges and equipment
- Temperatures at which food is stored
- That raw foods are stored below ready-to-eat foods in refrigerators to prevent cross contamination
- Making sure cool rooms and freezers are well maintained and clean, inside and out
- Food is covered or stored in covered containers, and
- That spills are cleaned up promptly

COLD STORAGE

One of the most important things in relation to cold storage is making sure that cold and frozen ingredients are maintained at the correct temperature. Cool rooms and refrigerators need to be set at 0˚ to 5˚C. Freezers should be set to -15˚C to -18˚C.

To make sure that the temperature is maintained in refrigerators and freezers, you need to ensure that doors are always kept closed, and that seals around the cool room or freezer doors are not damaged.

It's also important to make sure that refrigerators and freezers are not overloaded, as this restricts air circulation and can affect the temperature.

STORAGE - CONTROL OF HAZARDS - DRY STORAGE

As well as cold storage, dry storage can present a number of potential food hazards that need to be controlled.

Making sure there is a checklist or procedure around how dry storage is managed will ensure potential food hazards are controlled, and that your dry ingredients are stored safely.

When storing dry ingredients, you need to make sure that they are:

- Free from moisture and humidity
- Checked for pests such as ants, mice and cockroaches, and
- Stored in containers with air tight lids

When using dry goods, you need to make sure that the oldest stock is used first, and any spills in the storage area need to be cleaned up promptly to avoid pest activity.

STORAGE - CORRECTIVE ACTION

If food hazards do occur in storage areas, you need to make sure that the hazards are addressed immediately. If you think that any food is unsafe to eat, you must dispose of it immediately.

Some examples of food that needs to be thrown out include:

- Food that appears to be **spoiled**, or you think is **unsafe** or **unfit** to **eat**
- Food contaminated by **pests**
- Food that has **damaged packaging**, or
- Food **past its use-by-date**

FRIDGE AND FREEZER BREAKDOWN

If fridges or freezers break down and high risk food remains stored at a temperature between 5˚C and 60˚C for longer than four hours, then you need to throw the food out.

If frozen food thaws, it may be used as refrigerated food. If it cannot all be used immediately, then it needs to be thrown out.

Remember that if you serve potentially hazardous food to someone, you could make them very sick, and cause your business considerable harm. If you are ever in doubt, throw it out.

STEP 3 – THAWING

The next step to consider in processing food is thawing. The safest way to thaw frozen high risk food is in a refrigerator or coolroom, or, if practical, in the microwave.

This prevents the growth of any food poisoning bacteria that may be in the food, and is particularly important for ready-to-eat foods.

THAWING - POTENTIAL HAZARDS

Potential hazards that need to be considered when thawing food include:

- **Growth of bacteria,** which can result from thawing food at the incorrect temperatures, and
- **Cross contamination,** which can result from improper handling of the food

Improper handling means doing things like thawing food without covering it, or thawing on contaminated surfaces.

THAWING - CONTROL OF HAZARDS

Having a procedure in place or following a checklist whenever food is thawed ensures that potential food hazards are controlled.

Some of the key things to remember when thawing food are:

- Thaw frozen food at 5˚C or less, or in the microwave
- Plan ahead when defrosting large portions of frozen food. If necessary, divide food into smaller portions before freezing
- Make sure large portions of raw meat are completely thawed before cooking
- Cover thawing food
- Never refreeze thawed food, and
- Thaw frozen raw meats below ready to eat food in the refrigerator to prevent cross-contamination.

THAWING - CORRECTIVE ACTION

As with storage, you need to make sure you have corrective actions to follow if food hazards are presented by thawing.

You must throw out food if you think that it is unsafe to eat. Some examples of food that should be thrown out include:

- Food that has been thawed uncovered or had damaged packaging
- Food that has been frozen more than once, and
- Food that has been left at room temperature for more than four hours after thawing

STEP 4 – PREPARATION

Food preparation is the fourth step in processing food, and includes washing, sorting, slicing, chopping, mixing, lending, weighing and peeling of ingredients.
Some potential food safety hazards in preparation include:

- Physical objects: Items (such as glass, hair, and insects), getting into food during processing. There can also be foreign objects in raw ingredients, such as insects in flour
- Chemical contamination: Exposure to chemicals, such as cleaning agents or pesticides, during preparation
- Growth of bacteria: Bacteria growing in high risk foods left out of the refrigerator for too long, or if equipment and surfaces are not sanitised, and
- Cross contamination: If food is not handled properly, cross contamination can occur (for instance, raw meats not being kept separate from ready-to-eat foods)

PREPARATION - CONTROL OF HAZARDS

As with the other steps in the process, having procedures or checklists in place around preparation will assist in controlling any potential hazards, and will ensure that you prepare food safely.

During preparation, you need to make sure that good hygiene practices are followed at all times to protect the food from contamination. You need to ensure that you:

- Use clean, sanitised and dry utensils, equipment and surfaces
- Follow hand washing procedures, and
- Separate cleaning chemicals from food items

CROSS CONTAMINATION AND BACTERIAL GROWTH

To reduce the risks of cross contamination, you need to make sure that you:

- Separate raw foods from cooked or ready-to-eat foods
- Separate and colour-code utensils and cutting boards used for raw and ready-to-eat foods, and
- Use only correct colour-coded utensils for food preparation
- To reduce the chance of bacterial growth in high risk foods, you need to make sure you limit the time that you keep food out of cold storage.

Remember - bacteria grow very quickly in high-risk foods, such as meat, poultry and seafood, when left at room temperature (between 20˚C and 40˚C).

PREPARATION -2 HOUR/4 HOUR RULE

When handling and preparing food, it is very important to make sure that the food is not left out in the Danger Zone (5˚-60˚C) for longer than necessary. To make it easier to remember what you can and can't do, you can follow the two hour / four hour rule.

If food has been at a temperature of between 5 and 60˚C:

- For less than 2 hours, you need to refrigerate it, freeze it or use it immediately
- Between 2 to 4 hours - Use it immediately
- Over 4 hours - Throw it out

These guidelines are from Standard 3.2.2, sub clause 7(3), in the Food Standard Code.

PREPARATION - CORRECTIVE ACTION

Even if you do everything you can to control potential hazards in the food preparation process, sometimes mistakes can happen. If a food safety hazard has occurred during preparation, you must take the following corrective actions:

- If food has been at **5˚C-60˚C for longer than 4 hours, throw it out**
- If food has been affected by **cross-contamination, throw it out**
- If issues regularly occur in preparation, retrain all staff members in food handling practices and personal hygiene

STEP 5 – COOKING

Food poisoning bacteria do not survive at temperatures greater than 75˚C, so care must be taken when cooking to make sure that food is cooked thoroughly. Specific hazards when cooking include:

- Physical objects: Such as hair, insects, metal and glass getting into food during the cooking process from food handlers and the equipment they use
- Growth of bacteria: Bacteria growing in food if it is kept for too long between 5˚C and 60˚C
- Survival of bacteria: Bacteria surviving in food if it is not cooked thoroughly, or at the right temperature, and
- Cross contamination: If food is not handled properly, or if raw ingredients come into contact with ready-to-eat foods

COOKING - CONTROL OF HAZARDS

To cook food safely, procedures or checklists need to cover things like:

- Cooking all food thoroughly, or until it reaches 75˚C in the centre. You can use a thermometer to check if food is cooked properly. Exceptions include solid pieces of red meat (steak, roast meat) or oily fish (tuna and salmon)
- Cooking poultry, minced meat, sausages and rolled roasts to a minimum temperature of 75˚C in the thickest part, or until the juices run clear
- Stirring and heating soups, casseroles and gravies to boiling point, and
- Checking and recording temperatures

Once food is cooked, be careful to **avoid recontamination** through **poor handling** (unclean hands or utensils), or **cross-contamination** (cooked food coming in contact with raw food).

COOKING - CORRECTIVE ACTION

There are several corrective actions you can take if food safety hazards occur during the cooking process:

- If you notice that the food does not reach the required temperature, or it takes too long to reach the required temperature, then you will need to review the recipe or reduce the quantity to make smaller serves
- If food becomes re-contaminated after cooking, throw it out

As with preparation, if food safety issues regularly occur during the cooking process, you need to retrain all staff in correct cooking procedures.

STEP 6 – COOLING

Step six of the cooking process is cooling cooked food that you intend to use later. When cooling, you must cool food to less than 5˚C or colder as quickly as possible.

Even though it has been cooked, food may contain food poisoning bacteria from incorrect handling, or spores. By cooling the food quickly, you limit the time for bacteria to grow or form toxins, and prevent spores from germinating.

However, do not place hot food straight into the fridge - this will affect the fridge's temperature. Instead, divide the food into smaller, shallow containers and, when it has cooled to room temperature, store in the fridge or freezer.

COOLING - POTENTIAL HAZARDS

Potential food safety hazards associated with the cooling of food include:

Physical objects: Such as hair, band aids, insects, metal and glass, getting into food from food handlers and the equipment and utensils they use

Growth of bacteria: Bacteria growing in food if it is between 5˚C and 60˚C for too long

Spores germinating: Occurs if food is left out too long to cool down. This occurs commonly with rice dishes, where spores survive the cooking process, and may germinate if cooked rice is left between 5˚C and 60˚C for too long, and

Cross contamination: If food is not handled properly, or if raw ingredients come into contact with cooked food

COOLING - CONTROL OF HAZARDS

Food poisoning bacteria grow most rapidly between 20˚C and 40˚C. As a result, food that has been cooked, but won't be used straight away, must be cooled to 21˚C within 2 hours, and then to below 5˚C within the next 4 hours.

Remember: Never place hot food directly into the cool room or fridge - this can affect the temperature of the cool room, and the safety of the other food stored in it.

COOLING - CORRECTIVE ACTION

To address any food safety hazards that arise from the cooling of food, you need to:

- **Throw out** food that has been **at 5˚C-60˚C for longer than 4 hours**
- **Throw out** food that has taken **longer to cool down** than it should have
- **Retrain all staff** in correct procedures for cooling down cooked food, and

Review the cooling **process** if problems continue

STEP 7 - COLD HOLDING (PREPARED FOOD)

Cold holding refers to storing high risk food that has been previously prepared for display or serving. Examples of prepared food include cooked meat balls, dips, spinach and ricotta tortellini.

Cold holding presents a number of potential food safety hazards, and to control them you need to make sure that previously prepared high risk foods are:

- Stored at temperatures that minimise the growth of food poisoning bacteria, and are
- Protected from contamination while in storage

Prepared food that is displayed or served cold must be stored (held) at 5˚C or below.

COLD HOLDING - POTENTIAL HAZARDS

Some potential food safety hazards associated with cold holding, include:

- **Physical objects:** Items like jewellery, skin, hair, band aids, insects, metal and glass can get into food via food handlers and the equipment and utensils they use
- **Growth of bacteria:** Occurs if food is stored at incorrect temperatures
- **Spores germinating:** Occurs if food is held above 5˚C for too long, and
- **Cross contamination:** Occurs if food is not handled properly, or if raw ingredients come into contact with prepared foods

COLD HOLDING - CONTROL OF HAZARDS

Checklists and procedures to control hazards around cold holding need to cover:

- Making sure the temperature of the cool room or fridge is kept below 5˚C
- All prepared food going into cold storage as soon as possible
- Storing raw food below prepared food to prevent cross-contamination
- Covering and labelling food with a use-by-date, and
- Using the oldest stock in the fridge first

When storing food, avoid overloading the fridge, as it can affect the temperature. Avoid contaminating food with dirty equipment or labels and always use clean thermometers to check food temperatures.

COLD HOLDING - CORRECTIVE ACTION

To make sure that you don't risk the health of your customers, you need to take the following steps if food safety hazards occur in cold holding:

- Throw out any food that is past the use-by-date
- Throw out any ready-to-eat food that has been contaminated by raw food
- Follow the 2hr/4hr rule
- Clean and maintain your cool room and fridge on a regular basis, and
- Retrain all staff in the correct procedure for cold holding

If there is something wrong with the refrigerator temperature and food can't be stored at less than 5˚C, adjust the temperature gauge or seek advice from your supplier.

STEP 8 – REHEATING

As with cooling cooked food, reheating high risk foods increases thechances of bacteria being present in the food.

When reheating high risk food that has already been cooked and cooled, it needs to be rapidly heated to 75˚C or more to prevent the chances of this happening

Potential food safety hazards associated with reheating, include:

- Physical objects: Such as hair,band aids, insects, metal and glass can get into food during the reheating process
- Growth of bacteria: Occurs in food if it is reheated to the wrong temperature
- Survival of bacteria: Occurs in food if it is not reheated rapidly and thoroughly, and
- Cross contamination: Occurs from poor handling or if reheated food comes in contact with raw food

REHEATING - CONTROL OF HAZARDS

To control hazards when reheating food, you need to make sure you:

- Only use clean and dry equipment and utensils
- Wash and dry your hands thoroughly and regularly
- Avoid handling food that you are reheating with bare hands
- Reheat food rapidly to above 75˚C
- Keep reheated food at 60˚C or higher,
- Check and record temperatures

Any reheated food leftovers should be thrown out.

REHEATING - CORRECTIVE ACTION

Some of the corrective actions you can take if food safety hazards occur during reheating include:

- Throwing out any food that has been re-contaminated after reheating
- Following the 2hr/4hr rule, and
- Retraining all staff in correct procedures for reheating

If the temperature of the food hasn't reached 75˚C, then continue to reheat until it does. If you find that food doesn't reach the required temperature on a regular basis, or it takes too long to reheat, then review the recipe or reheat smaller portions.

STEP 9 - HOT HOLDING

High risk food that is hot-held on display for sale or service must be protected from contamination. This includes foods like meat pies, hot dogs, dim sims and curries.

These foods must be maintained at a temperature of 60˚C or more to prevent growth of food poisoning bacteria or germination of spores.

It's important to remember that food warmers or bain-maries are designed to maintain heat - not to heat food up. When using a bain-marie, food must first be cooked or reheated to 75˚C.

HOT HOLDING - POTENTIAL HAZARDS

Some potential food safety hazards associated with hot holding include:

- **Physical objects:** Such as hair, dirt, band aids and insects can find their way into food via food handlers and the equipment and utensils they use.
- **Growth of bacteria:** Occurs if food is held below 60˚C
- **Spores germinating:** Can occur if food is not held at the correct temperature
- **Cross contamination:** Occurs if raw ingredients come into contact with prepared food

HOT HOLDING - CONTROL OF HAZARDS

To control the hazards presented by hot holding, you need to make sure that:

- Fresh batches of cooked food aren't added to older batches of food - replace the whole tray
- Food warmers or bain-maries arecleaned and pre-heated prior to adding food
- Food is heated to 75˚C before going in the food warmer
- Food is kept warm at 60˚C or more, and
- Food is stored so it is evenly heated

To prevent contamination of food:

- Protect food from customers (for instance, in a display cabinet, open on your side only)
- Use clean thermometers to check reheating temperatures, and
- Only use clean equipment or labels

HOT HOLDING - CORRECTIVE ACTION

If food handling hazards happen during hot holding:

- Throw out contaminated food
- Throw out food if it has been held at less than 60˚C for more than 4 hours, and
- Review your procedures and equipment if food can't be maintained at more than 60˚C

STEP 10 - DISPLAY AND SERVING

Food on display for sale, service or self-service must be held at the correct temperature to prevent food poisoning bacteria growing. It must also be protected from contamination by customers.

Some of the potential hazards presented by display and serving of food include:

- Physical objects: Can find their way into food from food handlers and customers
- Growth of bacteria: Occurs if hot food is held below 60˚C or if cold food is held above 5˚C
- Spores germinating: Can occur if food is not held at the correct temperature, and
- Cross contamination: Can occur if raw ingredients come into contact with prepared food

DISPLAY AND SERVING - CONTROL OF HAZARDS

To control the hazards presented by displaying and serving food, you need to:

- Make sure that you clean and preheat(or chill) food units prior to adding food
- Maintain hot food above 60˚C and cold food below 5˚C
- Never add a fresh batch of food to an older batch - replace the whole tray
- Make sure that all staff have food safety skills and knowledge, and
- Always separate raw and ready-to-eat high risk foods

DISPLAY AND SERVICE – CONTAMINATION

To reduce the possibility of food contamination, you need to make sure that:

- Labels are clean, and that they don't come in contact with food
- You provide clean utensils for each item for self-service food
- Food you have on display is supervised and protected from customers
- You always use clean and dry food trays, and
- You use clean thermometers to check temperatures

DISPLAY AND SERVING - CORRECTIVE ACTION

If a food safety hazard occurs while you are displaying or serving food, you need to:

- Throw out food that has been contaminated
- Throw out food which has been between 5˚C - 60˚C for more than four hours
- Review procedures and equipment if food can't be kept at correct temperatures, and
- Remember the 2hr/4hr rule

STEP 11 – PACKAGING

When packaging food, there are a number of potential hazards that you need to be aware of. Packaging used to serve high risk food, including take-away, must be suitable for that particular food and the way it is used.

For example, a business may produce ready-made meals that are sold frozen, but the customer needs to microwave them at home. Suitable packaging for this product should work safely in the freezer and the microwave, and not compromise the quality of the food.

Some potential hazards in the packaging stage include:

- **Physical objects:** Can come into contact with the packaging
- **Chemical contamination:** Chemicals from plastic or foam packaging can contaminate food
- **Cross contamination:** Can occur when packaging is damaged

PACKAGING - CONTROL OF HAZARDS

When developing procedures and checklists around packaging food, you need to make sure that:

- Food is protected before and during packaging
- Food being packaged is kept at the correct temperature
- The packaging area is clean and sanitised before use
- Packaging is stored away from dirt, chemicals or food stuffs
- Food labelling is correct, and that it complies with legal requirements, and
- Packaging is inspected for damage or signs of pest infestation

PACKAGING - CORRECTIVE ACTION

Some of the food hazards that can occur, and corrective actions you need to take, include:

- Contacting your supplier if you receive goods with incorrect packaging or labelling
- Making sure that your packaging machinery area is clean and well maintained
- Throwing out any food that has been contaminated during packaging, and
- Throwing out any high risk food that has been left between 5˚C to 60˚C for longer than 2 hours

STEP 12 - TRANSPORTING FOOD AND CATERING

Transporting food and catering present some specific food safety hazards, as well some of the same hazards present in other areas of food processing.

Transported food must be kept at correct temperatures, and protected at all times from contamination. Frozen and chilled food should be transported in refrigerated vehicles, but chilled food may be kept cold using insulated coolers and frozen ice packs.

If it is necessary to transport food at temperatures between 5˚C and 60˚C, the time taken must closely be monitored, and the 2hr/4hr rule applied.

TIME IN TRANSPORT

When transporting food, the total time that the food is in the temperature danger zone needs to be taken into consideration.

The maximum time allowed depends on the temperature of the food during transport, the time in the danger zone prior to transporting, and how the customer will be using and storing the goods.

In general, if the transport time exceeds 2 hours, then the business must use refrigerated transport, unless it can demonstrate that the transport time will not be detrimental to the safety of the food.

High risk food that is transported hot may be reheated if kept between 5˚C and 60˚C for less than two hours. However, if this is longer than four hours, it must be rejected.

TRANSPORTING FOOD/CATERING - POTENTIAL HAZARDS

There are a number of potential hazards associated with transporting food & catering, including:

- **Physical objects:** Damaged packaging can lead to contaminated food, and dirt and foreign objects can get into the food
- **Chemical contamination:** Food may come in contact with cleaning agents and pesticides
- **Growth of bacteria:** Occurs if hot food is transported below 60˚C for longer than 4 hours, and
- **Cross contamination**: Can occur with poor handling or if raw food comes into contact with cooked food

TRANSPORTING FOOD/CATERING - CONTROL OF HAZARDS

To control the potential hazards presented by transporting food and catering, it's important that you:

- Use reputable and certified transport companies
- Always follow the 2hr/4hr rule
- Check that food is packaged or appropriately protected
- Check that food has been correctly labelled with identity, ingredients and use-by dates
- Monitor the temperature of the vehicle and the food during transport
- Make sure that the delivery vehiclesare clean and well maintained, and
- Protect food so that it is not contaminated by other items during transport

TRANSPORTING FOOD/CATERING - CORRECTIVE ACTION

If food safety hazards arise in the transport or catering processes, you need to:

- Throw out high risk food that has been transported or held between 5˚C and 60˚C for over four hours
- Throw out food that has beencontaminated
- Throw out damaged packages, and
- Review your transport supplier, and change companies if necessary

FOOD PROCESSING STEPS – SUMMARY

OK, that brings us to the end of the food processing steps. You should now have a good understanding of the potential hazards, methods of control and corrective actions for each stage in food processing.

To make sure that the hazards at each of these stages are controlled you need to have support programs in place in your business. We'll be looking at support programs in the next section.

SUPPORT PROGRAM 1

SUPPORT PROGRAMS

Earlier in the course we mentioned that as part of the Food Safety Program, food businesses must run Support Programs (or Pre-Requisite Programs) that provide training and information in all aspects of the food business.

These programs are essential for managing food safely, and include:

1. Cleaning and Sanitation
2. Staff Training
3. Staff Health &Hygiene
4. Equipment Maintenance and Calibration
5. Using a Thermometer
6. Pest Control
7. Food Recall
8. Waste Management
9. Customer Complaints
10. Approved Suppliers
11. Goods Receival
12. Internal Review
13. Premises and Equipment, and
14. Labelling

REQUIREMENTS OF SUPPORT PROGRAMS

It is important that everyone involved in the food process understands and follows these programs.

Along with the food processing steps that we have discussed already, these Support Programs need to be reviewed at least once a year.

Support Programs 1 - 7 are included in the Food Safety Program Template for Food Service and Retail Businesses.

SUPPORT PROGRAM 1 - CLEANING AND SANITATION

The FSANZ food safety standards have specific requirements around cleaning and sanitation. The standards require that food businesses maintain the premises - including fixtures, fittings, equipment & parts of vehicles used to transport food - to a standard of cleanliness where there is no accumulation of:

- Recycled matter.
- Rubbish
- Food waste
- Dirt
- Grease, or
- Visible matter

Food can become contaminated if it comes into contact with a surface (such as a bench top) or an item (such as hair or waste). This means it's extremely important that the workplace, including equipment and vehicles, are always cleaned and sanitised.

CLEANING & SANITATION - CLEANING SCHEDULE

To make sure that all cleaning tasks are done thoroughly and regularly, every business must establish a cleaning schedule. The schedule should include

1. What is cleaned
2. How it is cleaned
3. When it is cleaned
4. Who cleans it, and
5. Which cleaning chemicals and equipment are used

CLEANING AND SANITATION - CLEANING STEPS

To make sure that all surfaces are thoroughly cleaned and sanitised, there are 5 steps which should be followed while cleaning:

- Pre-clean - Removefood scraps and waste by wiping, scrubbing and sweeping
- Wash - Use hot water and detergent to remove grease, food particles and debris. Soak if needed
- Rinse - Use hot water to remove detergent and loose residues
- Sanitise - For surfaces that come into direct contact with food, use a sanitiser, such as hot water over 82˚C, steam, or other approved sanitisers, and
- Dry/Rinse - If necessary, rinse off sanitiser. Air dry to avoid recontamination, or dry with disposable paper cloths

CLEANING AND SANITATION - CLEANING PRACTICES

Hygienic and thorough cleaning practices will help keep your workplace free of food safety hazards. Other practices that you need to incorporate into daily processes and procedures include:

- Cleaning spills as soon as possible
- Removing food waste and rubbish regularly
- Cleaning all utensils, equipment and surfaces immediately after use
- Using cleaning chemicals strictly according to supplier's recommendations
- Cleaning and hanging all cleaning equipment and materials to dry
- Washing hands thoroughly after using chemicals or handling rubbish
- Reporting any problems, faults or signs of pest infestation
- Storing chemicals separately away from food, contact surfaces and packaging, and
- Making sure all staff are aware of their cleaning responsibilities

PROGRAM 2 - HEALTH AND HYGIENE

Every food business must make sure all staff who handle food know and understand their health and hygiene obligations. Food handlers need to be aware of:

- The personal hygiene practices they need to follow
- Diseases and conditions that need to be reported, and
- Good hand hygiene practices

THE HUMAN BODY

One of the main sources of bacteria is the human body. There are places on our body where bacteria are highly concentrated.
These include:

- Ears
- Eyes
- Nose
- Mouth
- Skin
- Hair
- Wounds
- Intestines
- Hands
- Boils
- Whitlows
- Burns

Bacteria concentrate here due to temperature, moisture and naturally occurring body oils. These conditions can attract bacteria even on a healthy body.

FOOD HANDLER REQUIREMENTS

As a food handler good personal hygiene will reduce the amount of bacteria you have on your body which will reduce the risk of you contaminating food or a food contact surface.

This is a requirement that you are obliged to adhere to under the Food Standards Code.

To view the relevant section of the Food Safety Practices and General Requirements Standard 3.2.2, follow the link below.
Food Safety Standards

PERSONAL HYGIENE GUIDELINES

You should adhere to the following guidelines in relation to personal hygiene:

- Shower or bathe daily as close to your shift starting time as possible
- Clean your teeth before a shift and visit a dentist regularly
- Tie hair longer than collar length up in a bun or braid
- Keep your fingernails clean and trimmed
- Avoid nail polish as it hides dirt and can chip and fall into food
- Use ample antiperspirant deodorant
- Prevent unnecessary contact with ready to eat food, by using clean tongs, gloves and other barriers such as paper

CLOTHING GUIDELINES

As a food handler you need to ensure what you are wearing does not contaminate food or surfaces that are likely to come into contact with food.

You should follow these guidelines:

- Clothing must be cleaned
- Jewellery must be kept to a minimum
- Hair clips or hair pins kept to a minimum

Where there is a food safety issue hair should be restrained, such as with a hair net.

DEALING WITH ILLNESS

It is your responsibility to notify your manager if you are suffering from symptoms that indicate you have a food borne illness or have a condition where the contamination of food is likely.

Symptoms can include;

- diarrhoea
- vomiting
- fever
- jaundice
- sore throat with fever

These symptoms may suggest a disease that is transmitted through food.

FOOD BORNE DISEASES

There are certain diseases that are transmitted through food. These include:

- Hepatitis A
- Typhoid Fever
- Shigellosis
- Staphylococcal
- Streptococcal

You are responsible for the safety of the food - remember to notify your supervisor if you have any symptoms or are feeling unwell - they will advise you of any action you should take.

HAND WASHING

As a food handler we use our hands constantly. They are one of the main vehicles of cross contamination from the human body to food or food contact surfaces. Hand washing is one of the most crucial and common things you need to do.

Hand washing should be done as often as necessary. Depending on the tasks that you perform this could be anything from 5 - 100 times in a shift.

WHEN TO WASH YOUR HANDS

You need to wash your hands before starting work, and after:

- handling food
- coughing or sneezing into your hands or tissue
- touching any part of the body, hair or face
- using the toilet
- entering the food area
- carrying out cleaning, rubbish disposal or the like
- smoking, eating or drinking
- handling animals or pests
- handling money
- answering the telephone
- handling different types of food
- finishing work, before going home

WHERE TO WASH YOUR HANDS

Hands must be washed in a dedicated hand washing basin.

Hands should not be washed in food preparation sinks, to avoid cross-contamination.

HAND WASHING TECHNIQUE

There is no point washing your hands regularly if you do not do it properly.

By clicking the next button on the animation, you will be able to see each stage of correct hand washing.

BAD HABITS

A bad habit is like a warm bed - easy to get in to but very hard to get out of.
Have you ever:

- Picked food from a tray and eaten it with your hands
- Sneezed over food
- Handled money with a glove on
- Come to work when you are sick
- Wiped your hands on your apron instead of washing them....

If you have any of these bad habits you will be required to change them as they could lead to you serving food that is unsafe. Turning personal hygiene guidelines into practice means looking at what you do on a daily basis and making **change**.

Before we move on we will review the key points for personal hygiene.

KEY POINT SUMMARY - WHAT TO DO

When working with food, always:

- Wash your hands after every task
- Follow uniform Guidelines
- Practice good personal hygiene daily
- Notify your manager if sick
- Change gloves whenever hands would normally be washed

Notify your supervisor if you think you have contaminated food.

KEY POINT SUMMARY - WHAT NOT TO DO

When at work, never:

- Chew gum
- Smoke, except in designated areas
- Eat in food prep areas
- Place hands directly on ready to eat foods
- Sneeze or cough over food
- Re-use gloves

Now we know about keeping yourself clean, but what about your work environment? We will look at this next.

SUPPORT PROGRAM 3 - EQUIPMENT MAINTENANCE AND CALIBRATION

All equipment that is used in a food business needs to be maintained regularly to make sure that it is operating effectively. This helps to avoid unpredictable equipment failure, which could be costly to replace or repair, and that could disrupt food production.

An efficient way to manage equipment is by having a Maintenance Schedule or Plan, which lists all the equipment (refrigerators, mixers, slicers, scales and temperature devices), and their proposed dates for service or check, which can be done by an external contractor.

Some equipment, such as thermometers and balances, need to be calibrated (adjusted) regularly to make sure that their measurements are reliable and accurate.

EQUIPMENT MAINTENANCE AND CALIBRATION -THERMOMETER CALIBRATION

Thermometers are fragile and must be handled with care to prevent damage and to maintain them in good working order. If thermometer batteries run flat, you need to make sure they are replaced immediately, to reduce the chance of someone taking an incorrect temperature.

To maintain accuracy on thermometers, you need to calibrate them on a regular basis. You can calibrate thermometers using a cold or hot temperature test.

TESTING THERMOMETERS - COLD TEST

To carry out a cold temperature test, you:

- Fill a container with half water and half crushed ice
- Let the mix stand for 5 minutes
- Place the probe of the thermometer into the container for 3 minutes, and
- Record the temperature - it should read 0˚C

If the temperature is out by more than 1˚C, it will need to be recalibrated by an external contractor or supplier or be replaced.

TESTING THERMOMETERS - HOT TEST

To carry out a hot temperature test, you:

- Boil water in a small open saucepan
- Place the probe into the water so that the tip is in the middle while continuing to boil
- Wait a few minutes for the temperature to stabilise, then
- Record the temperature - it should read 100˚C

If the temperature is out by more than 1˚C, it will need to be recalibrated by an external contractor or supplier or be replaced.

If you have more than one thermometer, then each one must be identified (numbered with permanent marking) and test results recorded for each.

SUPPORT PROGRAM 4 - USING A THERMOMETER

Throughout the Food Safety Program, you will need to measure and record temperatures of high risk food and equipment. To do this, you will need a suitable thermometer that can accurately measure a range of temperatures for activities like:

- Cooking and reheating
- Cooling
- Hot holding and display
- Cold display
- Fridges and cool rooms, and
- Freezers

TYPES OF THERMOMETERS

You will need to make sure the thermometer you use is accurate, and that it covers the range of temperatures you are measuring. It will need to be inserted into the food to measure the core or middle to give a true reading.

Digital probe thermometers are easy to use, accurate within 1˚C, and suitable for general use for both food and equipment. They can be used to measure the core of food.

Infra-red thermometers are only for measuring surfaces of food or equipment. They are useful as a guide for temperatures in cool rooms and freezers. However, you still need a probe for measuring the internal temperature of food.
Dial Thermometers are useful for keeping in fridges or freezers, giving a constant measurement of air temperatures.

TAKING TEMPERATURES

To take the temperature of food using a probe thermometer, you need to:

- Clean and sanitise the probe
- Insert the probe, so that the tip is in the middle or thickest part of the food
- For packaged, frozen or sealed food products, place the probe between two packs
- In fridges or freezers, place the probe on the centre of the shelf for air temperatures
- Wait until the temperature stabilises (10-60 seconds), and then
- Read and record the temperature, as well as the time and date

If food is not homogeneous (uneven thickness or consistency), you'll need to take the temperature in several places. Once you are finished, make sure that you wash, sanitise and dry the probe.

SANITISING THERMOMETERS

To clean and sanitise a thermometer before and after use, you need to:

- Wipe off any food debris or other contamination from the probe
- Wash probe with warm water and detergent
- Sanitise with hot water at 77˚C or above, or with alcohol swabs
- Rinse if necessary, and
- Air dry probe or use paper towel

SUPPORT PROGRAM 5 - PEST CONTROL

Pests, such as rats, mice, flies, cockroaches and birds, can all carry harmful bacteria on their bodies and in their faeces, and can contaminate food physically or biologically.

Food premises must be free from animals and pests. Business owners must take full responsibility in preventing pests from entering the food premises - this responsibility ranges from design and construction of the building through to regular maintenance.

MEASURES TO CONTROL PESTS

Some ways pest control can be achieved is by:

- Fitting all doors and openings withscreens, strips and air curtains
- Maintaining ceilings, floors and walls by sealing any gaps or cracks
- Keeping premises and vehicles clean and sanitised
- Placing food in sealed containers
- Removing waste, clutter or debris in and around the food premises which may harbour pests, and
- Using baits or traps to kill pests - this can be done by an external contractor (remember to keep baits and traps away from food)

SUPPORT PROGRAM 6 - FOOD RECALL

From time to time, food may be recalled because it contains dangerous levels of food poisoning bacteria, foreign matter, chemicals, or have incorrect ingredients or labelling.

The purpose of a food recall is to:

- Stop the sale at retail level
- Stop any further distribution
- Notify the public and the relevant authorities about the problem, and
- Retrieve the unsafe food

SYSTEMS REQUIRED FOR RECALLS

To make sure that dangerous or contaminated food can be removed from sale if required, all wholesale suppliers, manufacturers or food importers must have a food recall system in place.

Food services and retail businesses such as supermarkets, restaurants or takeaway shops do not need a recall system. However, all food businesses do need to have a procedure in place for dealing with food or ingredients that have been recalled, returned or suspected of being unsafe. The food must be traceable so that it can be effectively recalled.

MANAGING RECALLED FOOD

Recalled food must be clearly identified, and kept separate from other food, to prevent it from being accidentally sold. It should then be placed to one side until information is received from the supplier or the local council.

For this reason, you must keep a record of all food products purchased, including supplier details, invoices and delivery dockets identifying the food, batch and dates.

RECALL SYSTEMS

A recall system for a business must be documented and followed when recalling unsafe food. The system must include:

- A list of authorities that need to be notified (FSANZ and relevant government departments)
- A list of distribution outlets for all products
- Recovery of product advice, including the identity of the product, reasons for recall, arrangements for returning product and contact details
- A recording system to track products returned, and
- A review of the food recall

Further details about recall procedures can be obtained from Food Standards Australia New Zealand (FSANZ), or from their website www.foodstandards.gov.au.

SUPPORT PROGRAM 7 - WASTE MANAGEMENT

Standard 3.2.3 Food Premises and Equipment states that all food premises must have proper facilities for the storage of rubbish and recyclable waste matter.

These facilities must be big enough to hold the amount of rubbish and recyclable waste generated by the business.

Rubbish generated inside the business must be:

- Collected in lined bins
- Kept away from food storage and process areas, and
- Emptied regularly into external bins

Additionally, the following hygiene procedures must be followed:

- Protective clothing used in food processing must be removed when handling rubbish
- Staff must wash their hands after handling rubbish
- All bins must be covered with lids to deter pests, and
- Bins need to be easily cleaned and sanitised regularly

SUPPORT PROGRAM 9 - APPROVED SUPPLIER PROGRAM

An approved supplier is a registered and certified business with whom you have entered into an agreement to provide food, ingredients or services to your business.

The supplier must have food safety systems in place to make sure it provides safe food, and meets your terms of agreement for continued trading.

A record of all suppliers must be kept and continually reviewed, and updated if there are any changes.

SUPPORT PROGRAM 8 - CUSTOMER COMPLAINTS

Customer complaints occur in most food businesses, so it makes sense to set up a system in your business for monitoring complaints.

A complaints monitoring system can help your business to detect trends related to the quality of your product or service. This allows you to take action before problems spiral out of control, possibly resulting in loss of business or income. The system should include the person responsible for complaints within the business, and the process of dealing with the complaint.

RECORDING COMPLAINTS

When recording and storing complaints, it's useful to collect the following information:

- The name and contact details of the customer
- The nature of the complaint
- Product details with batch or date codes, if relevant
- Place and date of purchase
- Action taken or proposed, and
- Name and contact details of the staff member who recorded the complaint

SUPPLIER PROGRAM 9 - WHAT NEEDS RECORDING?

Records for each of your suppliers should contain the following information:

- The name, address and contact details of the business
- The food or services supplied
- The business registration number or ABN
- Food Safety/HACCP certification, if necessary, and
- The date supply commenced

It is important to have these details in case there is a problem or recall, so that the food or ingredient is easily traced to its source.

SUPPORT PROGRAM 10 - GOODS RECEIVAL

Records must be kept of all products purchased or received by your business. Which details you keep will depend on the agreed specifications of the product.

If high risk products are purchased, then they need to have a temperature check, which must be recorded.

It is not necessary to record temperatures of all deliveries from ongoing suppliers; however, for new suppliers, it is recommended that all deliveries are checked until you are confident that the supplier is consistently supplying the correct product.

WHAT TO RECORD ABOUT RECEIVALS?

The information that you should record and retain about goods received should include:

- Your supplier details
- The product details
- The date and time of delivery
- The use-by or best before dates or batch codes
- The temperature or other specific checks
- Whether the product has been accepted or rejected
- Details of corrective actions, and
- Initials of the person checking the goods

SUPPORT PROGRAM 11 - INTERNAL REVIEW

The Food Safety Supervisor must conduct an internal review or inspection of the premises, equipment and all the operations and activities conducted at the business at least twice a year.

This review is in addition to any external audits carried out by the local council or independent auditors. The internal review can be divided into sections, so that each area is inspected at least every six months.

To support the audit, a checklist should be drawn up that covers all areas to make sure that the Food Safety Program is being followed.

The review should include any non-conformances or problems that are found, as well as proposed dates for fixing them (corrective action).

SUPPORT PROGRAM 12 - FOOD PREMISES AND EQUIPMENT

Standard 3.2.3 Food Premises and Equipment of the Food Standards Code sets out the requirements for food premises, fixtures, fittings, equipment and food transport vehicles.

The standard requires that all food premises have adequate space for fittings and equipment, and room for staff to carry out required work. The workplace should also be easy to clean.

VEHICLES AND MOBILE FOOD PREMISES

Vehicles used to transport food must:

- Protect the food from contamination, and
- Be easily and effectively cleaned at points of food contact

Mobile food premises must also have ermanent hand washing facilities.

Temporary premises, such as food stalls at fetes, markets or shows, do not require hand washing facilities and can use alternate means of hand hygiene.

LEGAL REQUIREMENTS FOR LABELLING

By law, all food products must currently show the following:

- The nutritional content (energy, protein, total and saturated fats, carbohydrates, sugars and sodium)
- The percentage of the characterising ingredient of the food
- Any allergens present in the food, however negligible
- Country of origin
- Food recall information
- Storage requirements, and
- Use-by or best-before dates

MEETING REQUIREMENTS FOR FOOD PREMISES AND EQUIPMENT

To meet these requirements, each business must have:

- Protection from pests and other contaminants
- Clean water available
- A disposal system for garbage, sewage and waste water
- Sufficient lighting and ventilation
- Adequate and easy-to-clean equipment for the production of safe and suitable food
- Designated hand basins with warm running water in work areas
- Hand basins near the toilets
- Separate storage areas for personal belongings, clothing, office equipment, papers and chemicals, and
- Appropriate fittings, fixtures and equipment for the production of safe food

LABELLING REQUIREMENTS

The final thing you need to be aware of in relation to food safety is labelling requirements.

Correct labelling, such as best before dates and use by dates, reduces the chances of people consuming out of date and potentially hazardous food.

Listing of allergens reduces the chances of people consuming products they are allergic to, and food recall information assists in recalling potentially dangerous food from public consumption.

For all of these reasons, correct food labelling is an extremely important part of maintaining food safety.

BEST-BEFORE DATES AND USE-BY-DATES

Best-before dates refer to products that have a shelf life of up to two years. These products may still be consumed past this date depending on the quality or nutrition.

Use-by dates are usually based on a food safety issue. The exception is bread, which has a baked-on date (with a 7 day shelf-life).

Food that is very small, unpackaged, or made at the point of sale does not require nutritional content to be displayed.

SUPPORTING PROGRAMS – SUMMARY

Great, that brings us to the end of supporting programs. You should now have a good understanding of each of the supporting programs you need to have in place in your organisation to support food safety.

SUMMARY

Great, you've made it to the end of the course. One of the most important things to remember is that the primary aim of everything we've discussed is to prevent people from getting sick, and, in extreme cases, dying.

Things like audits and HACCP are systematic ways of achieving that goal. If you are committed to keeping your customers safe, then you need to use those systems as tools to help you.

Every day you make decisions and take actions that can affect the lives of others, and you need to make sure those decisions and actions keep people safe - not make them sick.

CONCLUSION

Well done, you have finished the theory component of the course!

Remember, as a food handler, you have a responsibility to reduce the risk of food poisoning.

Theory alone won't prevent a single food poisoning incident. You need to take what you have learnt here and practice at your workplace, every day.

AUSTRALIAN INSTITUTE OF ACCREDITATION

Australian Institute of Accreditation Pty Ltd
ABN: 18 602 790 965 RTO ID# 45009

Web: www.aia.edu.au
Email: info@aia.edu.au

Phone: 1300 662 750