Ministry for Primary Industries
Manatū Ahu Matua

Name of business:

Food Control Plan
Food Service and Food Retail
Consultation

Specialist Retail
–Meat Safe

For retail businesses that process and handle meat and meat products.

Add to the food service and retail *management and basics* section.

Growing and Protecting New Zealand

Meat Safe # Contents

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Calculating shelf life

Goal

To provide information on the period of time that food is safe to eat and other necessary information for customers.

Act requirements:
- Food must be safe and suitable.

Why?

- Food for sale must meet the requirements of the Food Act and the Australia New Zealand Food Standards Code (the Code).
- When food is been taken out of its original packaging its shelf-life may change.
- People need to know how long food will be safe to eat.
- Food that is sold with inaccurate shelf-life information could make customers ill.

How this is done

It is important that a business accurately calculates the shelf life of any ready-to-eat product it makes that is not likely to be eaten within 5 days.

When original packaging is opened, the shelf-life calculated by the manufacturer will change. It is important to know how long the food will now keep for. The new shelf-life must take account of:
- the time needed to sell the food;
- a reasonable amount of time for a customer to use it.

Calculating shelf life when making products
- The shelf life of chilled, ready-to-eat (RTE) manufactured foods must be calculated to provide an accurate "use-by" date.
- The shelf life of other foods must be calculated to provide an accurate "use-by" or "best-before" date – see *Food labelling*.
- Foods made by the business must meet the microbiological limits identified in the Code Standard 1.6.1 – see *Limits for harmful organisms in meat products*.

A *Date Marking User Guide to Standard 1.2.5 – Date Marking of Food For Sale* can be used to decide whether a "best-before" or a "use-by" date is appropriate for a food: **http://www.foodstandards.govt.nz/code/userguide/Documents/ Guide%20to%20Standard%201.2.5%20-%20Date%20 Marking%20of%20Food.pdf**

Calculating shelf life when using products made elsewhere

The shelf life of a readily perishable food taken from its original wrapping must be calculated so that it can't be sold or used beyond its "use-by" date. This date is calculated from information provided with the food by the manufacturer or by asking the manufacturer:
- how the food needs to be handled once out of its original packaging; and
- how long the food will be safe to use.

How this is done

A system is used that ensures the food can be sold within these limits while giving customers time to safely use it. Information about the system is kept at: (identify where this is)

_____ .

The person responsible for operating the system is: (identify who this is)

_____ .

An example of calculating the shelf life of an opened manufactured product is provided in *Guidance on calculating shelf-life*.

What if there is a problem?

Don't sell food until you can accurately provide information about its shelf-life.

If you do not know if a food is within its "Use-by" date, throw it away.

Write it down

When you make a RTE product and you don't sell it straight away, write down the date it was made and its shelf-life in the Ready-to-eat foods list.

When you take RTE products from their original packaging and you don't sell them straight away, list them together with their revised (opened) shelf-life in the Ready-to-eat foods list.

Use the Ready-to-eat foods – batch list to show how RTE products meet their shelf-life

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It is important to understand the range of matters that can affect the shelf life of the foods you make, such as:

- changes that may occur during processing and storage

- changing the storage conditions or repackaging

- factors in or around food that affect shelf-life

- the likely causes of deterioration and spoilage of the types of foods you make

- Information about these issues can be found at: **http://www.foodsafety.govt.nz/elibrary/industry/determine-shelf-life-of-food/how-to-determine-the-shelf-life-of-food-revision.pdf**

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Calculating shelf-life

The information on this page is provided to help with calculating the shelf-life of ready-to-eat (RTE) products taken from their original manufacturers wrapping.

The Code requires that:
- any packaged food with a shelf-life of less than two years be labelled with a date – Standard 1.2.5;
- food is safe up to, and including, the date marked;
- specific storage instructions are provided where necessary to ensure that the food will keep for the period indicated on the date mark - Standard 1.2.6;
- storage conditions must be achievable in distribution and retail;
- a seller must store food according to stated storage instructions.

Consideration must also be given to providing directions for use and storage after packaging has been opened where these are needed to keep food safe.

An example of calculating the shelf life of an opened product

A vacuum-pack of unsliced ham was given a one-month chilled shelf life when packed by the manufacturer. It is opened with 24 days shelf life remaining.
- Some of the ham is sliced onto a tray and displayed chilled;
- The rest is re-wrapped and put back in a chiller together with details of the original shelf-life and date of opening.

Information provided by the manufacturer identifies that, once opened:
- The whole ham has a chilled shelf-life of ten days (which includes the day it is opened);
- ham when sliced has a chilled shelf-life of six days.

The business wants to ensure that there is no risk that these dates are exceeded. It determines that:
- Sliced ham can be displayed chilled up to 2 days (including the day of slicing), and the customer will be given a further 2 days from date of sale to use it.
- Ham returned to the chiller can be sliced for up to three days (starting with the day the ham is opened).

The business works out that this would be well-within the manufacturers' requirements because:
- the latest that ham should be sliced is day 3;
- the latest a customer should be served is day 4;
- the latest shelf life given a customer would be day 6.

Using this scenario, the latest that the business would open the ham would be with 10 days of shelf life remaining.

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Food Control Plan

Food additives in meat products

Goal

To ensure that only permitted food additives are used to make meat products.

Act requirements:
- Food must be safe and suitable.

Why?

- Herbs, spices and other ingredients may be contaminated with harmful microorganisms.
- Using a validated and tried and tested recipe helps make a safe product.
- The Australia New Zealand Food Standards Code (the Code) prescribes certain food additives and their amounts that can be added to meat, poultry, game and other products
- If a non-permitted additive is in a food, or the amount of a permitted food additive exceeds the limit prescribed in the Code, safe limits may be exceeded.

How this is done

All ingredients must come from reputable suppliers and are safe for use when making products – see *Purchasing and receiving food*.

All ingredients and food additives used are permitted for use by, and comply with, the Code – see also *Food composition – general*.

What can be added to meat and meat products, including poultry and game, and the maximum levels permitted are set out in the Code Standard 1.3.1 at: **https://www.comlaw.gov.au/Series/F2015L00396**.

Examples of food additive requirements are provided in the *Guidance Food additives*

Check the Code for the requirements for the products that you make or sell at: **http://www.foodstandards.govt.nz/code/Pages/Food-Standards-Code-from-1-March-2016.aspx**

Checking ingredients

1. Nitrates/Nitrites
- When adding sodium nitrate, potassium nitrite or nitrate or cure mixtures the amount added must be as recommended by the supplier or must be calculated to ensure that the final product has less than the maximum level specified in the Code expressed as sodium nitrite.
- To ensure that nitrite/nitrate is not inadvertently mistaken for salt, sugar or other ingredients it must be stored separately from other ingredients.
- Nitrite/nitrate must only be added either [identify how added]:

☐ as coloured curing agents of nitrates/nitrites must be used with a % of sodium nitrite of (specify %) shaded area for writing; or

☐ as part of a premix.

2. Sulphur dioxide
- Sulphur dioxide or sulphite must not be used on raw meat.
- The amount of sulphur dioxide added to processed meat must be calculated to ensure that the final product has less than the maximum permitted level.

3. Casings
- Casings must be checked that they are of food grade.

What if there is a problem?

If a non-permitted food additive is in food, throw the food away.

If too much of an additive is present in the finished product, the product must be thrown away unless it may be reworked using a process that is approved by a Food Safety Officer.

Review process to identify how this happened and work out how to prevent it happening again.

Write it down

Keep a record of your calculations of food additives to confirm that your products meet requirements of the Code – either in the Diary or with your recipes.

You must write down (e.g. in the Diary) what you did to deal with a problem, what you did with the food and what action you took to prevent this happening again.

Do I need to have a recipe written down?

Writing down and following a tried and tested recipe is a way to make a consistently safe product that meets compositional and other requirements each time it is made. The recipe can also be used to check what should have been added to each batch against the batch records showing what was actually added.

Following a recipe and keeping a record of what went into each batch can also help you to show how you consistently meet requirements in the Act and the Code.

If you change anything in a tried and tested recipe you may affect safety and composition of the end product. You will need to check – validate – that any change to the recipe, ingredients or process continues to make a safe and suitable food.

Food additives

The information on this page is provided to help with meeting food additive requirements of the Code.

Permitted food additives in meat and meat products

Standard 1.3.1 is extensive and examples include:

Nitrites/Nitrates
- The total of nitrates and nitrites (calculated as sodium nitrite) permitted in cured meat, dried meat, slow dried cured meat, processed comminuted meat and poultry and game products must not exceed 125 mg/kg (parts per million) in the finished product.
- The total of nitrates and nitrites (calculated as sodium nitrite) permitted in fermented, uncooked processed comminuted meat products must not exceed 500 mg/kg (parts per million) in the finished product.

See *Brining and pickling meat* for an example of calculating nitrite in finished product.

Sulphur dioxide

Sausage and sausage meat, and processed comminuted meat, poultry and game products must contain less than 500mg/kg (parts per million) sulphur dioxide and sodium and potassium sulphites (calculated as sulphur dioxide).

Sulphur dioxide and sulphites are not permitted to be applied to raw, unprocessed meat.

Other permitted food additives

The Code places limits on the amount of other food additives that can be in products, such as sorbic acid and sorbates.

All ingredients and additives used must be permitted for use by, and comply with, the Code – see also *Food composition - general*.

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Food Control Plan   **Ministry for Primary Industries**

Limits for harmful microbes in meat

Goal

To ensure that meat and meat products meet microbiological requirements.

Act requirements:

- Food must be safe and suitable.

Why?

- The Australia and New Zealand Food Standards Code (the Code) sets levels for the maximum permissible number of harmful microbes that may be present in meat products.
- Meat products where levels aren't set in the Code may still contain harmful organisms if they aren't adequately processed and handled.

How this is done

Microbiological requirements of meat and meat products

Levels of harmful microbes in meat and meat products

A check is made that fish and fish products sold comply with microbiological requirements of the Code

The Code Standard 1.6.1 sets maximum permissible levels of harmful organisms that may be present in certain meat products.

Examples of limits for harmful microbes are provided in the Guidance *Limits for harmful microbes*.

Other meat products that are not included in Standard 1.6.1 may also support the growth of harmful organisms that will make people ill. Processing must ensure that these organisms are not at levels in the final product or when the product is nearing the end of its shelf-life.

Guidance on microbiological levels for harmful organisms that may be found in products such as uncooked corned, cured, pickled or salted meats, meat paste or spread, paté, and hot smoked meat products is at: **http://www.foodsafety. govt.nz/elibrary/industry/Microbiological_Reference-Guide_ Assess.pdf**

Further information about what a business needs to do to keep *Listeria monocytogenes* out of RTE food is in the Listeria procedure and in other procedures throughout the plan.

Check the Code for the requirements for the products that you make or sell at: **http://www.foodstandards.govt.nz/code/ Pages/Food-Standards-Code-from-1-March-2016.aspx**

What if there is a problem?

A product that doesn't meet microbiological limits must be thrown away unless it may be reworked using a process that is approved by a Food Safety Officer.

Review practices to identify how this happened and take action to prevent it happening again.

Write it down

You must write down (e.g. in the Diary) what you did to deal with a problem, what you did with the food and what action you took to prevent this happening again.

Keep a record to show how your products meet microbiological requirements of the Code either (e.g. in the Diary) or with your recipes.

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Limits for harmful microbes

Levels of harmful microbes in meat and meat products

The Code Standard 1.6.1 sets maximum permissible levels of harmful organisms that may be present in certain meat products from a minimum of five sample units from one lot of the product:

Food	Microbiological limit
Packaged cooked cured/salted meat	**Coagulase-positive staphylococci/g:** up to 100 organisms is acceptable in any sample; 100-1000 organisms is acceptable in one sample only. If in more than one sample the lot is rejected; More than1000 organisms in one sample and lot is rejected. **Salmonella/25g:** nil present in 5 samples from lot
Packaged heat treated meat paste and packaged heat treated pâté	**Salmonella/25g:** nil present in 5 samples from lot
Comminuted fermented meat which has not been cooked during the production process	**Coagulase-positive staphylococci/g** up to 1000 organisms is acceptable in any sample; 1000-10000 organisms is acceptable in one sample only. If in more than one sample the lot is rejected; More than10000 organisms in one sample and lot is rejected. **Eschericia coli/g:** up to 3.6 organisms acceptable in any sample; 3.6 to 9.2 organisms is acceptable in one sample only. More than 9.2 organisms in one sample and lot is rejected. **Salmonella/25g:** nil present in 5 samples from lot
Ready-to-eat food in which growth of _Listeria monocytogenes_ can occur	_Listeria monocytogenes_/25g nil present in 5 samples from lot
Ready-to-eat food in which growth of _Listeria monocytogenes_ will not occur	_Listeria monocytogenes_/g Up to 100 colony forming units is acceptable in any sample (5 samples from lot).

Herbs, Spices and Premixes

Herbs and spices such as capsicums, cinnamon, pepper can contain harmful organisms. Guidance on microbiological levels for harmful organisms that may be found in herbs and spices is at:
http://www.foodsafety.govt.nz/elibrary/industry/Microbiological_Reference-Guide_Assess.pdf

For example, in five samples taken from a lot there should be no Salmonella in 25g.

Herbs, spices or premixes used in products are sourced from suppliers who can provide information to show that they do not contain harmful organisms in amounts that may affect the safety of the food.

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Composition of meat products

Goal

To ensure that meat and meat products meet compositional requirements.

Act requirements:
• Food must be safe and suitable.

Why?

• The Australia and New Zealand Food Standards Code (the Code) applies definitions, composition and labelling requirements to meat and meat products.

How this is done

Composition of meat and meat products

A check must be made that meat and meat products sold comply with compositional requirements of the Code – see also *Food composition*.

Check the Code Standard 2.2.1 for the requirements for the products that you make or sell at:

http://www.foodstandards.govt.nz/code/Pages/Food-Standards-Code-from-1-March-2016.aspx

Examples of composition requirements for meat and meat products are in the *Guidance Composition*.

What if there is a problem?

Products that don't meet compositional requirements but which are safe to eat may be reworked where the process is approved by a Food Safety Officer.

Review practices to identify how this happened and take action to prevent it happening again.

Write it down

You must write down (e.g. in the Diary) what you did to deal with a problem, what you did with the food and what action you took to prevent this happening again.

Keep a record of your calculations to confirm that your products meet compositional requirements of the Code – either in the Diary or with your recipes.

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Composition

The information on this page is provided to help with meeting food compositional requirements.

Composition of meat and meat products

The Code Standard 2.2.1 includes definitions, compositional and specific labelling requirements for meat and meat products, including:

- A pie must contain at least 250 g/kg of meat flesh to be called a meat pie.
- Sausage must contain no less than 500g/kg of fat-free meat flesh; and the proportion of fat in sausage must be no more than 500g/kg of the fat-free meat flesh content;
- The presence of brain, heart, kidney, liver, tongue or tripe in a food must be declared either by its specific name (e.g. "liver", "kidney") or by the class name "offal."
- The presence of other offal in a food - blood, pancreas, spleen, thymus - must be declared by its specific name (e.g. "thymus").
- It is important to note that in either case above, even if a product containing offal is exempt from being fully labelled, the purchaser must be informed proactively, either verbally or in writing.
- Where reference is made/implied about the fat content of minced meat, information about the maximum proportion of fat must be expressed in g/100g.
- A declaration must be made to purchasers where raw meat is re-formed or joined or resembles a meat cut using a binding system that doesn't involve heat.
- There are prescribed names that must be used when labelling processed and manufactured comminuted fermented meat. For example, a fermented comminuted manufactured meat which has not been heat treated must be described as "fermented manufactured meat – not heat treated".
- Other than above, labelling on a pack of fermented comminuted processed meat must not refer to any heating process unless it is a cooking instruction for consumers.

Thawing and tempering meat

Goal

To ensure that the temperature of meat during thawing and tempering does not allow the growth of harmful organisms, meat is tempered to a temperature of between -5ºC to -2ºC.

To ensure that previously frozen food is not refrozen.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

Tempering helps:
- to prevent fat from softening and smearing during grinding or chopping;
- to prevent temperature during grinding or chopping from rising above 5ºC.

Toxins from harmful organisms can form in thawed products that are not processed further before they are refrozen.

How this is done

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning, Equipment, packaging and other items, Maintenance and Food allergens*.

Good hand hygiene and personal hygiene practices must be followed when handling food - see *Hand Hygiene and Personal hygiene*.

Tempering frozen meat

Frozen meat being tempered is [identify which applies]:

☐ kept below 7°C: or

☐ thawed in a way that has been demonstrated as minimising the growth of harmful microbes. This is done by: (state process)

Meat must be:
- used as soon as possible once its tempered temperature is reached; or
- stored chilled until ready to use; and
- stored so that drip cannot contaminate other foods or surfaces – for example:
  – in a dish or container to contain drip;
  – away from other foods;
  – never defrosted above ready-to-eat food;
- checked before use for any trapped packaging or plastic; wrapping/carton liner.

Once thawed, meat is not re-frozen.

Tempering chilled meat

Chilled meat being tempered must:
- have been received at no more than 7ºC;
- be cooled until it reaches the required temperature for processing.

What if there is a problem?

If meat is not fully tempered continue to thaw (or chill) until the required temperature is reached.

If thawed meat has not been used within 3 days, do not do not refreeze. If it is not showing signs of decomposition (discolouration, odour, slime) it may be processed/used straight away, otherwise it must be thrown away.

Write it down

You must write down (eg in the Diary) any problems arising during tempering and what you did to resolve them.

If you regularly thaw a particular size of product, write down (e.g. in the Diary) the chiller temperature setting and the time taken to consistently temper it.

> ❗ Meat must be tempered in ways that keep it suitable for use. Ambient or room temperature thawing is not recommended for meat that is to be processed – the surface will thaw and soften while the centre remains frozen.
>
> It is best to temper meat in a chiller. Plan ahead and allow enough time. If possible, use a chiller set at a temperature just above the temperature desired for the tempered meat. This helps ensure that temperature throughout the meat remains uniform. Regularly check the chiller temperature to make sure that the meat thaws evenly. Blocks of frozen meat from cartons may take several days to reach the right temperature.
>
> If you keep a record of the chiller temperature and how long it takes a particular lot size or portion to reach the desired temperature it will be useful when you want to temper the same size of product in future. For example, you identify that a 10kg kg block of frozen meat takes 3 days in the chiller operating at 5°C to reach 2°C.

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Preparing raw meat & poultry

Goal

To prevent cross-contamination between meat, poultry and other foods.

To hygienically prepare food and prevent microbes that may be present in food from multiplying to harmful numbers.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Some meat types are more likely to carry harmful microbes.
- Harmful microbes that can cause foodborne illnesses will grow at temperatures between 5ºC to 60ºC (the temperature danger zone).
- Harmful microbes can contaminate food through unclean people, other foods, equipment and utensils.
- Food contaminated by chemicals can cause illness.
- Objects can fall into uncovered food affecting its suitability and/or safety.
- Food may need to meet requirements of the Australia New Zealand Food Standards Code (the Code).

How this is done

Ingredients must be suitable for any products made – see *Purchasing and receiving goods*.

Situations where cross-contamination could occur between ready-to-eat (RTE) foods and raw foods such as meat, poultry, fish and vegetables must be identified at the business – see *Preventing cross-contamination, Food allergens*.

Where possible, surfaces, equipment and places used for preparing raw foods are different to those used for ready-to-eat food – see *Readily perishable foods, Chilled and frozen food storage*.

Surfaces and equipment used for preparing food must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use - see *Cleaning and Equipment, packaging and other items in contact with food*.

Good hand hygiene and personal hygiene practices must be followed – see *Hand hygiene and Personal hygiene*.

Recipes must accurately calculate any prescribed food additives in meat products to meet the Code requirements – see *Additives in meat products, Food Composition – general and Food Composition of meat products, Food allergens, Food labelling*.

Preparing raw meat and poultry

Raw poultry must be prepared and/or packaged (identify which applies):

☐ in a defined area that is separate from other raw meats,

☐ in the same area but processing and handling is at a different time to other raw meat and with thorough cleaning and sanitising in between. (poultry preparation should be after other meats)

Raw meat and poultry must be prepared and/or packaged (identify which applies):

☐ in a defined area that is separate from cooked or ready-to-eat food, or

How this is done

☐ in the same area but processing and handling is at a different time to cooked or ready-to-eat food with thorough cleaning and sanitising in between. (raw food preparation should be after cooked or ready-to-eat food). See *Cleaning schedule*.

Equipment used in preparing and/or packaging raw poultry (eg knives, slicers, racking, packaging machinery) must be (identify which applies):

☐ dedicated to raw poultry; or

☐ shared with the preparation of other foods and with thorough cleaning and sanitising in between.

Any equipment shared with cooked or ready to eat food must be thorough cleaned and sanitised before it is used for ready-to-eat food. See *Cleaning*.

Boning, cutting, mincing, packaging
- meat must be checked and any visible contamination removed;
- ingredients for minced meat, pie fillings and sausages must meet the lean meat, fat and offal requirements of the Code, Standard 2.2.1;
- meat must be kept chilled until it is needed, then chilled or frozen as soon as possible after processing and handling;
- casings (e.g. for sausages) if pre-soaked must be soaked in clean water;
- packaging must completely cover meat and meat products and prevent meat juices from leaking;
- packaging must be carried out hygienically and in ways that prevent cross-contamination from juices and surfaces.

Pre-packaged meat and meat products

A check must be made with suppliers that pre-packaged meat and meat products are appropriately labelled – see *Food labelling, Food allergens, Food composition and Composition of meat products*.

What if there is a problem?

Where separation procedures between raw and RTE food are not followed, throw away RTE food that may have become contaminated.

Damaged equipment is repaired before use or is replaced.

Where equipment to be used with RTE food is dirty, it must be cleaned and sanitised before use.

Identify why this happened and review the cleaning schedule and retrain staff where necessary.

Write it down

You must write down (e.g. in the Diary) what action you took if meat was not prepared correctly.

Keep a record of information, such as sampling and laboratory records, that was used to determine that a RTE food was safe to sell.

Keep a record of information provided by suppliers confirming the accurate labelling and composition of products.

You must write down in the Cleaning schedule the surfaces and equipment used, when they need to be cleaned (and sanitised); how this is done, and by whom.

Marinades and coatings

Goal

To make and use marinades and coatings in ways that prevent cross-contamination and the growth of harmful microbes.

To ensure that only permitted food additives are used in marinades and coatings.

Act requirements:

Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.

- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Marinades and coatings can contain allergens that can be passed to meat and other food.
- Raw foods dipped into marinades and coatings can leave harmful microbes behind.
- The Food Standards Code Standard 1.3.1 only permits certain food additives to be added to meat, poultry, game and fish products.
- If more of a food additive is used than is permitted safe limits may be exceeded.

How this is done

Ingredients must be suitable for any products made – see Purchasing and receiving food.

Surfaces and equipment used for preparing food must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use - see Cleaning and Equipment, packaging and other items in contact with food.

Potential for cross-contamination between marinades and coatings and other foods must be identified – see also *Food allergens*.

Recipes must accurately calculate any prescribed food additives in meat products to meet the Code requirements – see *Additives in meat products, Food Composition – general and Food Composition of meat products, Food allergens, Food labelling*.

Good hand hygiene and personal hygiene practices must be followed when marinating or coating meat – see *Hand hygiene and Personal hygiene*.

Meat marinades and coatings

- Marinade must be made-up and used either following manufacturers' instructions, or to own tried and tested recipes.
- Food additives that are only permitted in limited amounts must be added in quantities that ensure those limits are not exceeded in the final product.
- Made-up/bulk marinades must either be stored chilled and covered until use; or stored following manufacturers' instructions.
- Marinades and coatings must be applied hygienically and food stored chilled until it is either processed further or sold.
- Marinades and coatings left over from processing are thrown away at the end of the processing day.

What if there is a problem?

If:
- own recipes are not followed, or manufacturers' instructions are ignored;
- marinades and coatings are not stored properly or are not discarded at the end of each day; and/or
- allergenic ingredients are allowed to cross-contamimate other products or are not identified in ingredients.

Identify what caused the problem, change practices and train/retrain staff to prevent a recurrence.

Write it down

You must write down in the Cleaning schedule the surfaces and equipment used, when they need to be cleaned (and sanitised); how this is done, and by whom.

You must write down (e.g. in the Diary) what action you have taken if marinating or coating has not been carried out correctly.

Keep a copy of the recipe and method for each marinade and coating. This will help ensure consistency of ingredients each time it is made-up and accuracy of the formulation. This can be found (state where recipe kept):

_____

Identify on the recipe ingredients containing allergens.

Food Control Plan

Brining and pickling meat

Goal

To brine and pickle meats in ways that prevent cross-contamination, the growth of harmful microbes and physical contamination.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Re-using brining and pickling preparations can cross-contaminate new batches of meat with harmful organisms.
- Dirty equipment such as brine injectors can contaminate food.
- Damaged or broken equipment (e.g. broken brine injector needles) can contaminate food.
- The Australia New Zealand Food Standards Code (the Code) only allows certain food additives in cured meats.

How this is done

Surfaces, containers and equipment used for brining and pickling must be in sound condition and clean before use - see Cleaning and Equipment, packaging and other items, Maintenance and Food allergens.

Good hand hygiene and personal hygiene practices must be followed when handling food - see *Hand hygiene and Personal hygiene*.

Meat preparation

Processing and handling meat for brining and pickling must be carried out (identify which applies):

☐ in a defined area that is separate from cooked or ready-to-eat food; or

☐ in the same area but at a different time to processing and handling cooked or ready-to-eat food with thorough cleaning and sanitising in between. (It should be after any cooked or ready-to-eat food). See *Cleaning schedule, Preparing raw meat and poultry*.

Equipment and activities

Equipment (e.g. knives, containers, massagers, tumblers, injectors) must be made of corrosion-resistant material and (identify which applies):

☐ dedicated to brining and pickling activities; or

☐ shared with the preparation of other meats and with thorough cleaning and sanitising in between.

☐ Any equipment shared with cooked or ready to eat food must be thorough cleaned and sanitised in between use. See *Cleaning schedule*.

Brining and pickling

- Preparations must be made-up and used following manufacturers' instructions, or to own tried and tested recipes.
- The concentration of food additives such as nitrite and salt, necessary to achieve brining and pickling must not be diluted.
- Preparations must be stored chilled at 5°C or below and covered until use or otherwise stored following manufacturers' instructions;
- Brining and pickling must take place at 5°C or below;

How this is done

- Brine preparations used in injecting must be thrown away at the end of each batch or day's operation.
- Meat must be fully immersed in the brine during curing.
- Curing tanks must be emptied and cleaned regularly.
- Injection equipment must be checked before and after each use for any broken or missing parts.

Additives permitted at certain levels by the Food Standards Code

☐ Food additives used in brining and pickling must be permitted by, and comply with, the Code – see Food additives in meat products.

Nitrites

Sodium and potassium nitrite must only be used in controlled amounts as nitrite can be toxic at excessive levels. The Code specifies the total amount of nitrite that must not be exceeded.

Calculating Sodium Nitrite level (mg/kg)

Example: 5 grams of sodium nitrite* is added to a total raw meat batch weight of 20 kg

$$\frac{5g}{20Kg} = \frac{5 \times 1000 \; mg}{20 \; kg} = \frac{5000}{20} = 250 \; mg/kg \text{ (parts per million)} \textbf{ in the original mix}$$

In this example, during processing the product loses 25% water, so the concentration of nitrite increases by this amount in the final product. 20kg original weight is now 25% less (5 kg) and now weighs 15kg.

$$\frac{\textbf{250} \times 20 \text{ (wet weight)}}{15 \text{ (dry weight)}} = 333 \; mg/kg \text{ (parts per million) sodium}$$

nitrite in the final product. This is less than 500 mg/kg (parts per million) maximum allowed by the Code.

* The weight of sodium nitrite may need to be corrected if pure nitrite is not used.

Other permitted additives

The Code places limits on the amount of other food additives in whole cuts of processed meats, such as nisin. More information on Standard 1.3.1 can be found at:
https://www.comlaw.gov.au/Series/F2015L00396

Schedule 15: substances that may be used as food additives: **https://www.comlaw.gov.au/Series/F2015L00439**

Schedule 16: type of substances that may be used as food additives **https://www.comlaw.gov.au/Series/F2015L00442**

What if there is a problem?

If:
- own recipes are not followed, or manufacturers' instructions are ignored; or
- brining, pickling preparations or equipment are not used properly; or
- brine and pickle mixes are not stored and/or discarded as required.

Identify what happened and take action to prevent it from happening again. Retrain staff where necessary.

If
- injection needles break in product

Stop process and recover all missing parts.

Throw away food that contains excessive amounts of food additives.

Write it down

- You must write down (e.g. in the Diary) what action you have taken if brining and pickling has not been carried out correctly.

- You must write down in the Cleaning schedule the surfaces and equipment used, when they need to be cleaned (and sanitised); how this is done, and by whom.

- Keep a copy of the recipe and method for each brine and cure preparation. This can be found (state where recipe kept) shaded area for writing _____.

- Identify on the recipe any ingredients containing allergens.

Cooking meat and poultry

Goal

To ensure that meat and poultry, e.g. a roast joint, a ham, a rotisserie chicken, is thoroughly cooked at the centre of the thickest part.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- If meat, and especially poultry, is not cooked thoroughly all the way through to kill harmful microbes people could be made ill.

How this is done

Meat and poultry must be prepared hygienically - see Preventing cross-contamination, Preparing raw meat, poultry, fish, Defrosting frozen food.

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use - see *Cleaning and Equipment, packaging and other items in contact with food, Maintenance and Allergens*.

Good hand hygiene and personal hygiene practices must be followed when handling food - see *Hand hygiene and Personal hygiene*.

Meat and poultry that is cooked for immediate consumption may be cooked following the Serve Safe procedures *Cooking poultry and Cooking*.

Poultry must always be cooked thoroughly and never sold medium or rare. Meat – unless it is to customer order for immediate consumption – must be cooked-through thoroughly using this procedure.

When using a thermometer the procedure *Checking temperatures* is followed.

Cooking meat and poultry
- Manufacturer's instructions must be followed to programme cooking equipment.
- Cooking equipment (e.g. oven) must be pre-heated before cooking starts.
- Meat and poultry must be cooked so that the centre of the thickest part either exceeds 75ºC or reaches one of the temperature/time combinations below:

Internal temperature	Time
60ºC	For 45 minutes
63ºC	For 18 minutes
65ºC	For 10 minutes
68ºC	For 4 minutes
70ºC	For 2 minutes
73ºC	For 1 minute
75ºC	For 15 seconds

Checking meat or poultry is cooked

Any cold spot in the cooking chamber must be taken into account when cooking products.

How this is done

Any cold spot in the cooking chamber must be taken into account when cooking products.

Processed meats must be cooked according to the procedure for Bakery products containing processed meat, poultry, fish in Baking and finishing.

A thermometer (probe or Infra-red (IR)) must be used to check that the thickest part of the meat (the center of a meat joint, or breast or innermost part of the thigh of poultry) has reached a temperature of at least 75ºC or one of the time/temperature combinations above. This must be done in one of the following ways, either:
- each time a meat or poultry item is cooked the temperature is measured, or
- each time a batch of the same items is cooked, the temperature of one item in the batch is measured (taken from a different place each time), or
- when a proven cooking procedure is followed, a one cooked item is checked periodically, to confirm that the necessary temperature has been reached for the required time – see *Validating a cooking process and Checking meat and poultry is cooked*.

It is not necessary to temperature probe diced or thinly sliced meat and poultry because smaller pieces are more likely to cook through to the middle easily. It's also hard to take an accurate reading.

What if there is a problem?

If meat or poultry does not reach a high enough temperature, keep cooking until it does.

When meat or poultry being cooked using a standard time/temperature setting is found not to have been cooked properly, find out why. Here are questions to ask:
- Was the procedure followed correctly?
- Was there a cold spot or does the equipment (e.g., oven) need repairing?
- Was a different size of food (e.g. meat joint or bird) used?

Identify what needs to be done to prevent this happening again.

Retrain staff if necessary.

Write it down

You must keep a record of the temperatures that meat and poultry items are cooked to.

Write down in the Checking meat and poultry is cooked procedure each item cooked and identify which option will be used to check that it is cooked thoroughly.

Meat and poultry cooked using a standard time/temperature setting

You must:

• Write down the checks that have been made to prove that the time/temperature combination will either cook the thickest part of the food to at least 75oC or will ensure that the food is kept at the required temperature for the necessary time – see Validating a cooking process.

• Write down (e.g. in the Diary) the temperatures of meat or poultry that is checked regularly (e.g. weekly or every fifth batch) to ensure that the cooking process still works as intended.

Meat and poultry cooked that are cooked not using a standard time/temperature setting

Every time the food is cooked, you must write down the temperature of each item, or the one item from a batch, checked in the Cooking meat and poultry temperature record.

In addition, you must:

• Write down (e.g. in the Diary) the action taken if food didn't reach a safe temperature.

• Write down in the Cleaning schedule the surfaces and equipment used and how/when they are cleaned (and sanitised); and by whom.

Validating a cooking process

This is what you can do if you regularly cook a meat or poultry item - such as rotisserie-cooking a chicken, roasting a joint, cooking a meat pie, boiling a ham or hot-smoking sausages – and you don't want to check its temperature each time you cook it.

You must use the same equipment and the same standard ingredients (the same size or weight of the same type of food) each time you cook the product. The following process will enable you to demonstrate (i.e. validate) that a standard cooking procedure will properly cook the food. If you want to validate your cooking process you must follow the steps in this procedure.

1. Cook using a standard cooking method (e.g. a temperature setting for a set time).

2. At the end of the set time, check the temperature of the centre of the thickest part of the food item with a probe thermometer to measure if it has either exceeded 75ºC or met one of the time/temperature combinations from the table below.

Internal temperature	Time	Internal temperature	Time
60ºC	For 45 minutes	**68ºC**	For 4 minutes
63ºC	For 18 minutes	**70ºC**	For 2 minutes
65ºC	For 10 minutes	**73ºC**	For 1 minute

3. Write down the result of your time/temperature checks in the table below.

4. Repeat the standard cooking method in steps 1 and 2 on at least three separate occasions until confident a safe temperature will be consistently reached for the time required.

If the food does not reach a safe temperature on three occasions increase the cooking time and/or cooking temperature and repeat steps 1-3 above.

When you are confident that the standard procedure ensures that the food is cooked, regularly check with a probe thermometer (e.g. once-a-week, or every fifth batch) that the cooking method continues to work as planned.

Food item and description (recipe, size/weight, thickness):							
	Select the temperature the poultry item will be cooked to: [tick as appropriate]						
	☐ Cooked to higher than 75ºC		☐ Cooked at _____ ºC for _____ minutes				
	Cooking details						
Date	Method (How was the food cooked?) What equipment was used? What cooker temperature setting was used? Where was the probed sample positioned in the cooker?	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
1st							
2nd							
3rd							

*if the temperature is higher than 75ºC it isn't necessary to probe a second time

Food item and description (recipe, size/weight, thickness):							
	Select the temperature the poultry item will be cooked to: [tick as appropriate]						
	☐ Cooked to higher than 75ºC		☐ Cooked at _____ ºC for _____ minutes				
	Cooking details						
Date	Method (How was the food cooked?) What equipment was used? What cooker temperature setting was used? Where was the probed sample positioned in the cooker?	Time started cooking	1st probe*		2nd probe		Initials
			time	temp	time	temp	
1st							
2nd							
3rd							

*if the temperature is higher than 75ºC it isn't necessary to probe a second time
You can make copies of the above validation tables if you have other items that you cook this way.

Checking meat and poultry items are cooked

Meat, poultry and foods containing raw meat and poultry that are cooked on-site must be thoroughly cooked. The table below enables you to identify the process followed for each meat or poultry item to ensure that it is properly cooked.

Write it down

Use the table below to identify and record which checks are done to make sure that meat and poultry items are properly cooked.

Step 1 – n column A write down all the meat and poultry items that need checking.

Step 2 – In column E tick the box to show that either the item will be cooked to more than 75℃, or identify the time/temperature that has been validated as thoroughly cooking the item.

Step 3 – In columns B to D identify how you check that each item is properly cooked.

- If you temperature probe each item every time it's cooked tick the box in column B. Each time you cook this item write the temperature it has been cooked to on the Cooking temperature record.
- If you cook a number of the same items together and temperature probe one item in each batch, tick the box in column C. Each time you cook a batch of this item write the temperature of the probed item on the Cooking temperature record.
- If you have a proven time/temperature setting for the item (you have completed the Validating a cooking process procedure for that item) tick the box in column D. Then regularly – such as once a week, or every fifth time that the item is cooked – measure the temperature when cooking the item to confirm that the time/temperature still cooks it.
- Write this temperature in the Diary..

Internal temperature	Time	Internal temperature	Time
60℃	For 45 minutes	**68℃**	For 4 minutes
63℃	For 18 minutes	**70℃**	For 2 minutes
65℃	For 10 minutes	**73℃**	For 1 minute

A	Temperature probe (tick as appropriate)			E
Meat or poultry item (list each type of food)	**B** **Every dish, every time**	**C** **One item in every batch**	**D** **One item regularly, e.g. once a week or every 5th batch**	**Temperature item must reach in thickest part (tick as appropriate)**
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins
				☐ 75℃ or ☐ _____ ℃ for _____ mins

FOR
CONSULTATION
ONLY

Cooking other foods

Goal

To ensure food other than meat and poultry is properly cooked.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Harmful microbes are present in many foods. Cooking (and reheating) can kill harmful microbes.

How this is done

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Allergens*

Food must be prepared hygienically - see Preventing cross-contamination, Preparing raw meat, poultry, fish, Defrosting frozen food

Cooking equipment must be checked for cold spots – see *Maintenance*

Good hand hygiene and personal hygiene practices must be followed when cooking food - see *Hand Hygiene and Personal hygiene*

When using a thermometer the procedure *Checking temperatures and calibrating thermometers* is followed.

Meat and poultry

Meat and poultry items must be cooked following the *Cooking meat and poultry* procedure.

Liquids (e.g. sauces, pie filling)
- Cold spots are avoided (e.g. by stirring frequently) so that an even temperature is reached.
- Liquids are brought to a boil.

Eggs
- Whole eggs must be free from cracks, are clean and used within their "best-before" date;
- pasteurised egg-pulp is used for lightly-cooked foods;
- egg-pulp must be used in accordance with its date mark.

Fish and Shellfish

Fish and shellfish must be checked for thorough cooking. Look for a change in colour and texture when cooked – for fish this will depend on the species. Prawns will turn from blue-grey to pink and scallops become milky white and firm when cooked.

Before cooking, any mussel or clam with a damaged shell or an open shell that won't close when tapped must be thrown away as it may not be safe to eat.

To check that a mussel or clam is cooked, make sure the shell is open and that the mussel or clam has shrunk inside the shell. If the shell has not opened during cooking, throw it away.

How this is done

Frozen products
- Products that need to be thawed before cooking must be thoroughly defrosted – see *Defrosting frozen food*.
- Manufacturer's instructions must be followed when cooking products designed to be cooked from frozen.
- Cooked food must be checked that it has been cooked-through thoroughly.

Bakery products (e.g. pre-made frozen or chilled doughs, powder pre-mixes)
- Manufacturer's instructions must be followed when handling, cooking or re-heating manufactured products.
- A time/temperature setting must be identified that will consistently cook food thoroughly.
- Doughs, batters, mixes and pre-made foods must be cooked-through thoroughly.

Making "allergen-free" or "gluten-free" products

Products that are sold as not containing allergens or gluten or similar must be processed and handled so as not to become contaminated by products that contain allergens or the "free" ingredient, such as by:
- making and handling products known to contain allergens/gluten after other products with thorough cleaning in between;
- ensuring allergen/gluten-free products are always stored/retarded/proved/baked/displayed etc. so as not to come into contact with other products.

Equipment used with allergen/gluten-free products – e.g. scale pans, mixer, divider, moulder, tins, trays, knives etc. - are (identify which applies):

☐ dedicated for use with allergen/gluten-free foods and stored separately; or

☐ cleaned thoroughly before using with allergen-free food – see Cleaning.

See also *Preventing cross-contamination, Food allergies*.

What if there is a problem?

If food is undercooked, cook it for longer.

If this happens frequently, check recipes and change cooking times and/or temperatures, or divide food into smaller quantities or use different equipment.

Retrain staff as necessary.

Write it down

If food does not cook properly when following set recipes and procedures you must record (e.g. in the Diary) what you did with the food and what action you took to prevent this happening again.

Cooling hot food and freezing food

Goal

To cool hot readily perishable food quickly to minimise the length of time it spends in the temperature danger zone.

To freeze foods safely.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Food that is not chilled quickly and completely, and food in the temperature danger zone (5℃ to 60℃) will allow harmful microbes to grow that can make people ill.
- Cooked and chilled ready-to-eat (RTE) food can be contaminated by Listeria and other harmful microbes after cooking by poor handling and cleaning practices.
- Frozen food that is not completely frozen will spoil before the end of its shelf-life and could allow harmful microbes to grow.

How this is done

> **!** Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Allergens*

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*

When using a thermometer the procedure *Checking temperatures and calibrating thermometers* is followed.

When hot, readily perishable food that is cooling reaches 60℃, further cooling must be done quickly so that it spends the least amount of time in the temperature danger zone.

Cooling hot food

Hot readily perishable food must be:
- cooled quickly to 5℃ or below;
- protected from contamination during cooling.

This must be done by (identify method(s) used):
- cooling from 60℃ to 21℃ in 2 hours and from 21℃ to 5℃ within a further 4 hours (total time max. 6 hours). Food is regularly checked to ensure it has cooled within this time frame using a probe thermometer; or
- cooling using a method that has been validated to show that food is kept safe. Validation documents are available at (identify where this information is kept):

See also *Readily perishable food, Checking temperatures and calibrating thermometers*.

Ways to speed up cooling include:
- using a blast chiller;
- putting food into thin layers in a large tray made of a material (e.g. metal) that conducts heat well;
- dividing food into smaller portions to increase surface area;
- hanging or placing food on a rack to improve air circulation around it;
- moving hot food to a colder area;

How this is done

- placing sealed packs of food into cold/iced water;
- standing pans of hot food in cold/iced water;
- stirring hot liquid as it cools;
- using the"cool" setting on an oven or prover (the oven/prover needs to be cool first!).

Using cooled food

Readily perishable RTE food that has been cooked and cooled must be stored at or below 5℃. This food is either: (identify method(s) used)

☐ marked with the date it was cooked and cooled. It is then used, or sold to consumers to use, within 5 days of cooling; or

☐ provided with a 'use-by' date that has been calculated to ensure that the food will be safe to eat until this time – see Calculating shelf life, Chilled and frozen food storage.

Freezing food

- food for freezing must be processed and handled in accordance with procedures in the Plan;
- food must be frozen rapidly until it is frozen solid;
- food must not be frozen after its "use-by" or "best-before" date;
- food for freezing is best frozen when it is fresh, not at the end of its shelf-life;
- food freezes quicker when it is:
  - packaged in small quantities;
  - placed in the freezer in a way that allows cold air to come into contact with as much of the surface as possible.

What if there is a problem?

If cooked readily perishable food has not been:
- cooled from 60℃ to 21℃ in two hours and from 21℃ to 5℃ in a further 4 hours; or
- cooled using a validated method;

it must be thrown away.

Try alternative cooling methods to find one that will cool food to 5℃ within the required time.

Cooked and cooled readily perishable RTE food that does not have an accurately calculated "use-by" date and which has not been used within 5 days of cooling must be thrown away.

Write it down

You must write down (e.g. in the Diary):

- The temperature checks made on food items that have been cooled down.

- Any problems that you have had in cooling food to 5oC in the required time and what action you took.

- Any problems that you have had in freezing food and what action you took.

- Details of any items that you have had to throw away.

- Details of any other matters that you followed-up as a result of the above (e.g. staff training, review of cooling/freezing methods).

! Take care when putting cooling food in a chiller that it is not so hot that it raises the temperature of other food.

Hot-holding food

Goal

To keep hot food at a safe temperature.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Food in the temperature danger zone (5ºC to 60ºC) will allow the rapid growth of harmful microbes that can make people ill.

How this is done

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Allergens*.

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*.

When using a thermometer the procedure Checking temperatures and calibrating thermometers is followed.

Food must either be thoroughly cooked or reheated-through FIRST before it is hot-held – see *Reheating food*. Manufacturer's instructions for using hot-holding equipment must be followed where these are available.

Hot holding

Hot-holding equipment such as warming cabinets:
- must be capable of keeping food above 60ºC;
- must not be overloaded.

Hot-held food for customer self-selection must be: [identify which applies]

- ☐ Pre-wrapped before it is hot-held.

- ☐ Un-wrapped but covered to protect it from contamination.
- Utensils that are provided to assist customers handle hot foods must be kept clean;
- Food that is hot-held for more than 2 hours must be temperature-checked every 2 hours throughout the trading day to ensure that it is above 60ºC;
- Displays of unwrapped foods must be regularly checked to ensure that they are protected from contamination and that there are sufficient clean utensils provided for customers to use;
- New batches of food must not be mixed with old batches;
- Hot-held food that has been kept at 60ºC or above must, at the end of the trading day, be either [tick which applies]:

- ☐ If suitable for use the following day - cooled down and stored below 5ºC and sold cold; or

- ☐ thrown out;

- ☐ other (please state) Shaded space for writing.

See *Cooling hot food and freezing food, Reusing food that has been for sale, Food labelling*.

How this is done

A probe or infra-red thermometer must be used to check the temperature of food that has been hot held for longer than 2 hours. See *Checking temperatures and calibrating thermometers*.

What if there is a problem?

If hot food is at a temperature between 60ºC and 5ºC for more than 2 hours it must either be used straightaway or be thrown away.

Replace food and/or utensils that could have become contaminated through poor food handling practices or misuse.

Throw away food that may have been contaminated by staff or customers.

Retrain staff where necessary.

Write it down

You must:

- Write down in the Hot-held food record the temperature of food that has been hot-held for 2 hours or longer.

- Write down (e.g. in the Diary) any problems that you have had in hot-holding food at an internal temperature of 60oC and what action you took.

- Write down (e.g. in the Diary) any items that you have had to throw away, and why and any matters that might need following up (e.g. maintenance, training, review of cleaning schedule etc.).

Food Control Plan

Reheating food

Goal

To reheat food quickly and thoroughly.

To reduce the amount of time readily perishable food is held in the temperature danger zone.

The Act requires:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Microbes can survive in food that is not thoroughly reheated to the centre.
- Food in the temperature danger zone (5ºC to 60ºC) will allow harmful microbes to grow that can make people ill.
- Repeatedly reheating and cooling food can allow microbes to grow that produce toxins which are not destroyed by heat.

How this is done

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning; Equipment, packaging and other items; Maintenance; and Allergens*.

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand hygiene and Personal hygiene*.

When using a thermometer the procedure *Checking temperatures and calibrating thermometers* is followed.

Only food that has been cooked and then chilled straight away (cook-chill) (e.g. by following the Cooling hot food and freezing food procedure) may be reheated. Food that has been hot-held and then chilled must, if it is safe and suitable for further use, be used cold; otherwise it should be thrown away – see *Re-using food that has been for sale*.

Food must not be reheated more than once before it is sold.

Reheat food well

Only equipment that can reheat food effectively must be used. Warming cabinets must not be used to reheat food because they can't reheat food quickly enough.

The following equipment is used to reheat food [tick which applies]:

☐ microwave (note: observe mixing and standing times);

☐ convection/fan oven;

☐ pot/pan etc;

☐ other (state what equipment used)
_____.

When reheating cook-chill foods containing meat or poultry a thermometer must be used to check that it reaches an internal temperature of 75ºC or more – see *Checking meat and poultry is cooked*.

Where possible stir or mix food to make sure there are no cold spots and the food is evenly reheated.

Other foods must be checked that they have been reheated thoroughly all the way through.

What if there is a problem?

If food does not reheat sufficiently increase temperature and/or reheating time.

If reheated food is cooled and reheated further, find out why and take action to stop it happening again and, if needed, retrain staff.

Write it down

Once a week you must write down (eg in the Diary) the temperature of one food item that has been reheated.

You must also write down (e.g. in the Diary):

- any problem that you had in reheating food, what you did and what action you took to stop it happening again.

- any items that you have had to throw away and why.

Use of plastics in microwave ovens

- *Avoid direct contact of plastic film with food when using it to reheat food. Clean white absorbent kitchen paper may be a preferable alternative to prevent splatter;*

- *Only use plastic containers designed for use in the microwave. Other containers may seem okay to use, but may not be suitable for use at high temperatures (e.g. ice cream containers may not be designed for exposure to high temperatures);*

- *As chemical migration is more likely to occur into hot fatty foods, glass containers are a suitable choice for heating these products.*

FOR
CONSULTATION
ONLY

Food Control Plan

Drying products

Goal

To ensure that products are dried hygienically and thoroughly to prevent the growth of harmful organisms.

The Act requires:

- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Products that are not dried sufficiently will allow harmful organisms to grow
- Processed meat and meat products need to meet standards set out in the Australia New Zealand Food Standards Code (the Code).

How this is done

> **!** Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Allergens*

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene.*

Dried products must meet the Code requirements for limits of harmful microbes. If the product isn't covered by limits under the Code the operator must still ensure that the food is safe and suitable for the duration of its intended shelf-life.

A product that is preserved only by drying must have a water activity of 0.85 or less to prevent the growth of harmful organisms. If water activity is higher than 0.85, the product must either be:

- stored chilled at 5ºC or below until it is used; or
- subject to other preservation means, such as reducing pH (increasing acidity), adding salt or sugar, smoking.

Things that must be considered when drying meat products

The rate of drying is affected by a number of factors that you must take into account when you first set up your drying process:

1. Product size

Small pieces dry faster than thick pieces – the size and thickness of pieces should be similar throughout each batch for consistent drying.

2. Drying place

Use a room/space where you can control temperature, air velocity and humidity to produce consistency in drying products and consistency in drying future batches of the same product.

How this is done

3. Control of humidity and air flow

The rate of water evaporation from the surface of the product must not exceed the rate at which the water migrates from the center. If it does, the outer part of the product will harden ("case hardening"). The rate of evaporation is affected by the relative humidity of the air, air speed, and flow of air around product. These characteristics may need to be either increased (e.g. using fans) or decreased during drying, depending on the type of product.

4. Control of temperature

Drying temperature and time will vary and will depend on the type and size of product, the required water activity, and the amount of harmful microbes that need to be destroyed to meet any microbiological Standard or make a safe product. Regularly checking drying room temperature will help achieve batch consistency.

Preparation

Meat must be hygienically prepared for drying in accordance with the Plan – see *Preparing meat and poultry.*

Drying meat

Drying equipment (e.g. heating, fans, humidifiers) must be regularly checked and maintained so that they work as required to dry products. Drying takes place [identify which applies]:

☐ in a temperature controlled space

☐ at ambient (room or changeable) air temperatures:

Dried products made by the business are [identify which applies]:

☐ cooked by the business before sale – see *Cooking meat and poultry, Validating a cooking process*

☐ cooked by the consumer after purchase

☐ ready-to-eat un-cooked

☐ shelf-stable (they are safe to eat when not stored refrigerated)

☐ checked for weight at the start and finish of drying (or after drying and smoking if carried out).

How to use product weight loss to help to confirm water activity

When you dry a batch of same-size product, you can calculate the amount of weight lost during drying. To do this, you must also have the batch of product tested with a water activity meter. If you do not have a water activity meter, sending samples to the laboratory from the first three batches that you make of the product will help confirm the validity of your process in producing a product with the desired water activity properties. From your calculations and the laboratory results you will be able to work out the water activity in future batches of the same product – see also **Validating water activity**. If you want to use this method, you must complete the following process:

Weigh 10 pieces of product before they are put in the dryer and enter the weight in the Drying products record. Attach a numbered tag to each piece to be able to identify it later. Select samples that are likely to dry slowest (e.g. thicker, heavier) - these represent the 'worst cases' of the batch.

1. Carry out the drying process.

2. Re-weigh each piece of product and note the new weight on the *Drying products record*.

3. For each numbered sample:
   a. calculate the weight lost by subtracting the "weight when dry" from the "weight before drying" and
   b. enter this in the "weight loss" column against each sample;
   c. divide the "weight lost" by the "weight before drying;"
   d. multiply this figure by 100 to obtain the percentage weight loss and enter this figure in the "% weight loss" column.

Check % weight loss for each sample against the water activity tested by the laboratory for the same numbered samples. If all samples meet the required water activity for the product, identify from your records the minimum % weight loss needed to meet the water activity level. This will be the minimum % weight loss needed for products in a future batch of the same product dried in the same way. There is a worked example in *Validating water activity.*

If the required level of water activity is not met continue to dry the product until it is. Consider looking at whether the air temperature during drying is high enough, or whether air flow is sufficient.

Write it down

You must keep the results of laboratory tests for water activity.

If you use product weight loss to confirm a level of water activity, you must write down in the Drying products batch record the weight loss and calculations for each batch of product and confirm that products meet the desired water activity.

Write down (e.g. in the Diary):

- the cooking time/temperature of cooked, dried product

- if anything went wrong during drying, what you did to put it right

Helpful stuff: Marinating – e.g. in a vinegar-based marinade - can help to prevent the growth of harmful organisms, – see Marinades and coatings.

- The purpose of drying is to make less water available for organisms to grow.

- Yeasts and moulds will grow in foods with a water activity under 0.90.

- Drying to a water activity of 0.80 and vacuum packing; or drying and maintaining water activity at or below 0.70 will prevent the growth of moulds and yeast.

- The bacterium Staphylococcus aureus can grow and produce enterotoxins in food with a water activity of 0.84.

- Cooking products destroys harmful organisms.

- Adding salt or sugar or smoking helps inhibit the growth of harmful organisms.

- Drying to a water activity of 0.80 and vacuum packing; or drying and maintaining water activity at or below 0.70 will prevent the growth of moulds and yeast.

Smoking products

Goal

To ensure that food is smoked hygienically, using materials that won't impart toxic substances to food, and in ways that prevent the growth of harmful organisms.

Act requirements:
- Food must be produced or processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Smoking moist food in the temperature danger zone (5ºC to 60ºC) will allow harmful microbes to grow
- Smoke flavours need to meet requirements of the Australia New Zealand Food Standards Code (the Code)
- Smoking materials that have been impregnated with chemicals could make people ill.

How this is done

! Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

This procedure only applies to the following processes:
- **Smoking at 5ºC (or below) to impart flavor only.**
- **Smoking at high temperatures that cook food.**

If you want to make cold smoked ready-to-eat (RTE) products when operating with this plan you must speak to your verifier first.

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Food allergens*.

Food must be prepared hygienically – see *Preventing cross-contamination, Preparing raw meat and poultry, Defrosting frozen food*.

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*.

Smoke flavours are food additives and must meet the requirements of the Code, Standard 1.3.14 – see *Food composition and Composition of meat products*.

Only untreated wood that is guaranteed free from toxic substances (such as paint and preservative chemicals) must be used as a source of smoke.

Wood chips must be stored dry and free from fungus and microbial growth when used.

Smoking must be carried out in ways that don't allow harmful organisms to grow.

Meat must not be held in the temperature danger zone (5ºC to 60ºC) during smoking.

Smoking is best done in a temperature controlled space (e.g. a room or in monitored equipment). his produces more consistent product than using a smoke house where temperature is managed manually.

How this is done

Consumers must know if they need to cook a product to make it safe to eat – see *Food labelling*.

Smoking products

Smoke equipment must be checked as operating properly (e.g. heating, air circulation) before loading product.

Smoked products made by the business are: [identify which applies]:

☐ cooked by the business before sale – see *Cooking meat and poultry, Validating a cooking process*;

☐ cooked by the consumer after purchase;

☐ ready-to-eat un-cooked;

☐ shelf-stable (they are safe to eat when not stored refrigerated).

Smoking is carried out [identify which applies]:

☐ in a temperature-controlled space; or

☐ the smoking temperature profile is manually controlled – see *Cooking meat and poultry*.

The smoking process must ensure that:
- product is spaced evenly to help air circulation and even smoking of product;
- only untreated wood is used to make the smoke, or
- liquid smoke is used in accordance with manufacturers' instructions.

After smoking

When it has been smoked, RTE food must be stored at or below 5ºC and must be either [identify which applies]:

☐ marked with the date and time it was smoked, and then either used, or sold to be consumed, within 5 days of processing; or

☐ given a "use-by" date using information identified through technical assessment. Assessments are found at: ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓.

See also *Calculating shelf life*.

What if there is a problem?

If smoking is also intended to cook product, and it is not cooked at the end of smoking, it could mean that there has been equipment malfunction and product will need to be thrown away.

Check that smoke house equipment (e.g. heating, air circulation) is operating properly.

Product that has been exposed for an unknown time to temperatures in the danger zone must be thrown away.

If a smoked product that needs cooking is mistaken for RTE food remove it from sale until it meets requirements of the Code. Find out what went wrong and take steps to prevent it happening again.

Retrain staff if necessary. See also *Recalling food*.

Write it down

You must write down on the Smoking record for each batch:

Where smoking is part of the cooking process:

- the smoke house air temperature

- the time that it will take at that temperature for the centre of the food to reach its cooked temperature

- the smoking start time

- the smoking finish time

- the core temperature of the food at the end of the cooking period

- whether additional smoking/cooking time was needed

You must write down (e.g. in the Diary):

- where smoking is at a low temperature smoking to impart flavor only:

  - the smoke house air temperature

  - the length of time of the smoking process

- anything that went wrong during smoking, and what you did to put it right and ensure that it doesn't happen again.

Do I have to do this every time?

If you can validate that the time and temperature settings you use always cook the product, you may not need to measure product temperature each time – see Cooking meat and poultry and Validating a cooking process.

! Smoking produces chemicals that can help to inhibit the growth of some microorganisms. It also imparts flavour and colour to products. It is important to know what type of product is produced at the end of hot or cold smoking because this will determine how it needs to be handled:

- Will it be ready-to-eat (RTE) when it leaves the smoker?

- Will it become RTE from further processing by the business/another business?

- Will it need to be cooked by the consumer to make it safe to eat?

Smoking may be used with other preservation methods – see Drying products and Brining and pickling meat.

Dry curing & ready-to-eat dry-cured meats

Goal

To make ready-to-eat (RTE) dry-cured meats in ways that prevent cross-contamination and the growth of harmful microbes.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Poor quality meat and dirty equipment can introduce harmful microbes.
- Harmful microbes can grow if insufficient salt is used, or when salt is not evenly distributed during curing.
- Product temperatures above 5ºC during curing will allow harmful microbes to grow.
- Too much water in finished product will enable harmful microbes to grow.
- The Australia New Zealand Food Standards Code (the Code) only allows certain food additives in cured meats, and states limits for harmful microbes in packaged, cooked cured/salted meat.

How this is done

! Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with RTE foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Food allergens*.

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*.

To ensure that nitrite/nitrate is not inadvertently mistaken for salt or sugar, it must either be added as part of a manufactured pre-mix or as a coloured curing agent.

Slow dried cured meat (e.g. dry-cured ham) where drying is the main preservation process must have a water activity of 0.90 or less to be stored for sale without refrigeration.

Good quality meat (such as hind-quarter cuts) from a reputable source must be used for dry- cured RTE products, where there is no heat processing to kill harmful organisms.

Dry curing – preventing cross-contamination

Raw meat for dry curing is prepared (identify which applies):

☐ in an area that is separate from cooked or RTE food, or

☐ in the same area but at a different time to cooked or RTE food with thorough cleaning and sanitising in between. (Meat preparation should be after cooked or RTE food). See *Cleaning, Preparing meat and poultry*.

Making ready-to-eat slow dry-cured meats

For a traditional three-phase process for making dry-cured meats (salting, post-salting, drying/maturing):
- equipment (e.g. containers) must be made of corrosion-resistant material;
- meat must be kept at or below 5ºC during the salting process;
- joints or meat pieces are a uniform size to ensure curing and product consistency;

How this is done

- salt/dry cure mix must be applied evenly, and in sufficient amounts, to exposed surfaces – see *Brining and pickling meat*;
- all surfaces of meat pieces must be frequently rubbed with dry cure mix to ensure cure penetration;
- at the end of the salting period, product water activity must be less than 0.96 and the concentration of sodium chloride 4.5% to 5% before temperature of product may be raised for drying and maturation;
- product must be protected from contamination throughout the curing process;
- Final product must have a water activity of no more than 0.90 before it can be sold unrefrigerated – see *Validating water activity*.
- Product must meet microbial limits set by the Code when sold and at the end of its shelf-life – see *Limits for harmful microbes in meat*.

How do I know my product/process is safe?

Validating the process will show that products can consistently meet sodium chloride concentrations and a level of water activity known to inactivate and inhibit microbial growth in the product. This is explained further in *Drying products and Validating water activity*.

The Code Standard 1.6.1 sets microbiological limits for Salmonella, and coagulase-positive Staphylococci in packaged cooked cured/salted meat – see *Limits for harmful microbes in meat*.

In addition, any RTE products (such as RTE dry cured products) in which *Listeria monocytogenes* can grow must not contain any *Listeria monocytogenes* organisms. Further information that will help to confirm safe limits for products can be found at:

http://www.foodsafety.govt.nz/elibrary/industry/Which_ Microbiological-Outlines_Four.htm

Write it down

You must write down:

- in the Cleaning schedule the surfaces and equipment used, when they need to be cleaned (and sanitised); how this is done, and by whom.

- in the Drying products batch record your water activity calculations for each batch.

- the action you have taken if curing or drying has not been carried out correctly. Write down (e.g. in the Diary) what went wrong, what happened to affected product and actions taken to prevent it happening again.

Keep product test records with batch information.

Traditional RTE dry-cured meats, such as dry-cured hams, undergo three phases during processing:

Salting: applying the cure mix to meat surfaces at low temperature (at or below 5°C).

Post-salting: cure-mix becomes evenly distributed through the ham while at low temperature over time (typically 20 – 45 days). At the end of this time, water activity must be less than 0.96 and the concentration of sodium chloride 4.5% to 5%.

Drying and maturation: the moisture content in the ham is lowered further by gradually raising the temperature to 20 oC to 25 oC over a period of time - usually any time over 3 months. Flavour and other desired characteristics will influence the length of maturation time. When dry-cured ham is ready for sale, it must have a water activity of no more than 0.90.

Making fermented meat products

Goal

To make an uncooked or cooked comminuted fermented meat (UCFM) product in ways that reduce the presence of harmful organisms and preventing cross-contamination.

Act requirements:
- Food must be processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing unexpected or unreasonable substances.
- There must be procedures for controlling hazards at each processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Uncooked comminuted fermented meat products need special care as they are not cooked to kill any harmful microbes that may be present.
- Uncooked comminuted fermented meat products must meet the microbiological limits set by the Australia and New Zealand Food Standards Code (The Code).
- Cooked comminuted fermented meat products need special care to ensure that they do not allow harmful microbes to grow after cooking.
- Cooked comminuted fermented meat products must meet the cooking temperature requirements set by the Food (Uncooked Comminuted Fermented Meat) Standard 2008.

How this is done

If you make uncooked comminuted fermented meat products you must meet the requirements of the Food (Uncooked Comminuted Fermented Meat) Standard 2008. You will also need to meet requirements of the Code – see *Limits for harmful microbes in meat*. You will not be able to meet the Standard or the Code requirements for either cooked or uncooked comminuted meat products solely using this plan.

The Standard is at: **http://www.foodsafety.govt.nz/elibrary/ industry/guidelines-production-uncooked-guide/food- standards2008.pdf**

Guidance on the Standard is at: **http://www.foodsafety.govt.nz/elibrary/industry/guidelines- production-uncooked-guide/ucfm-guide-july-2009-final.pdf**

A guidance template for small manufacturers that sets out how you can meet the requirements of the Standard when making UCFM products is available at: www.mpi.govt.nz.

Using the UCFM guidance template with this Plan

Making UCFM products is outside the scope of the Plan. However, if you make your products following the processes in the UCFM guidance template you may be able to add it to this Plan.

If you want to make a UCFM product when operating with this plan you must speak to your verifier first.

Cooked comminuted fermented meat (CCFM) products

The Food (Uncooked Comminuted Fermented Meat) Standard 2008 provides a definition of a cooked fermented meat product. To be called "cooked" a product needs to have had its core temperature maintained at 65°C for at least 10 minutes or an equivalent combination of time and higher temperature during production.

A CCFM product does not need to meet the requirements of the Food (Uncooked Comminuted Fermented Meat) Standard 2008. While this Plan provides information about cooking a product, it does not deal with other issues that can arise with CCFM products, for example during fermenting.

How this is done

The UCFM guidance template (see reference above) also provides information for small manufacturers on producing a safe CCFM product. If you make your products following the CCFM processes in the guidance template you may be able to add it to this Plan.

Handling, displaying, serving ready-to-eat food

Goal

To safely handle, display and serve readily perishable and ready-to-eat (RTE) foods.

Act requirements:
- Food must be produced or processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Food in the temperature danger zone (5°C to 60°C) will allow harmful microbes to grow that can make people ill.
- Harmful microbes can contaminate food through unclean people, other foods, equipment and utensils.
- Food contaminated by chemicals or toxins can cause illness.
- Objects can fall into uncovered food affecting its suitability and/or safety.

How this is done

> **!** Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning* and *Equipment, packaging and other items, Maintenance and Allergens*

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*

Products that are not in packaging must be protected from contamination. Displays of food for customer self-selection must be regularly checked that food is protected from contamination, clean utensils are provided, and any temperature control is operating to keep food at the necessary temperature.

Information about foods that must be kept cold or hot to keep them safe is in *Readily perishable food*.

Handling at assisted service displays

RTE foods that are taken out of manufacturers packaging are [tick activity(ies)]:

☐ sliced/cut

☐ displayed

☐ repackaged

☐ other [state] ▓▓▓▓▓▓▓▓▓▓▓▓.

See also *Slicing and packaging, Calculating shelf life*

Food must be made available for assisted service as soon as possible after being removed from manufacturers packaging.

When handling RTE foods:
- Clean utensils must be provided for each type of food. Dirty re-useable utensils are:
  - regularly replaced throughout the trading day; or
  - regularly cleaned and sanitised throughout the trading day.

How this is done

- Single-use items must be thrown away after use.
- Other equipment used during assisted service is cleaned and sanitised regularly – e.g. at least daily.

Display for sale

Ready-to-eat food must be kept apart from raw food and non-food retail items.

Readily perishable food must be displayed:
- at a temperature specified by the manufacturer, or
- if displayed cold, at a temperature of no more than 5°C; or
- if displayed hot, at a temperature of not less than 60°C; or
- frozen solid if a frozen food.

Readily perishable food must not be kept out of temperature control for longer than necessary to complete a task (e.g. when re-stocking displays).

Readily perishable food must be given a shelf-life by: [tick method(s) that apply]

☐ using information specified by the manufacturer. This information can be found at: ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓.

☐ using information identified through technical assessment. Assessments are found at: ▓▓▓▓▓▓▓▓▓▓▓▓▓.

☐ storing chilled and selling to consumers for using within 5 days of manufacture

See also *Calculating shelf life*.

Customers must be informed of any thawed food that must not be refrozen after purchase – see *Defrosting frozen food*.

Handling and serving

Directly touching RTE food (e.g. with hands) must be prevented. Hands must be clean whenever handling and serving RTE foods.

Wherever possible a clean utensil, or a clean surface (such as wrapping film) must be used to prevent hand contact with RTE foods.

How this is done

Equipment and utensils used for raw foods must not be used for cooked or RTE foods unless they have been cleaned and sanitised before being used;

Foods made on-site and on display must either:
- have information (on or close-by) so that customers can make an informed choice; or
- have staff able to provide information about the food if they are asked by a customer.

New batches of food must not be mixed with old batches.

Food on display at end of trading

Wrapped and unwrapped readily perishable food on display is:
- returned to chiller or freezer if suitable for use the next day -e.g. it is within its "use-by" date and has not been displayed in the temperature danger zone;
- thrown away.

It must be either kept in a chiller (if chilled) or freezer (if frozen).

See also *Re-using food that has been on display*

What if there is a problem?

Throw away:
- food that has been contaminated by dirty equipment or where contamination is suspected;
- food beyond its "Use-by" date code;
- food that has not been stored/displayed in accordance with manufacturer's instructions, or according to the Plan.

Replace utensils that could have become contaminated.

Change practices and/or retrain staff where necessary.

Write it down

You must write down:

- each day (e.g. in the Diary):

  - the temperatures of foods stored and displayed

  - what action you have taken if food has not been handled or displayed correctly.

- in the Cleaning schedule the surfaces and equipment used, when they need to be cleaned (and sanitised); how this is done, and by whom.

Write down in the Ready-to-eat foods list each manufactured RTE product used that is taken out of its manufacturers packaging, it's storage temperature and shelf-life information.

Write down in the Ready-to-eat foods - batch record the details of each batch of RTE product used to show how it meets its shelf-life when sold.

Slicing and packaging

Goal

To ensure that slicing and packing of Ready-to-eat (RTE) food is carried out hygienically.

Why?

- RTE food is not processed further to make it safe to eat.
- Dirty slicing equipment, hands, surfaces and packaging materials can contaminate RTE food with harmful microorganisms that can make people ill.

How this is done

! Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

RTE foods must be protected from coming into contact with potentially contaminated surfaces, such as equipment, raw foods, hands.

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Food allergens*.

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*.

Containers, trays, pallets and boxes that have been used for raw materials must not be used for RTE food - See *Equipment, packaging and other items in contact with food*.

Staff must be able to handle RTE foods hygienically – see *Competency and training*.

Slicing and packing

RTE foods (e.g. hams, cooked meats) must be sliced and packed (identify which applies):

☐ in a separate room to raw foods, or

☐ in a defined area but separate from raw foods, or

☐ in the same place but at a different time to raw foods and with thorough cleaning and sanitising in between. (raw foods should be handled after RTE foods).

RTE foods are sliced and packaged (identify which applies) using:

☐ dedicated equipment (e.g. slicer, vacuum-packer, work surfaces, utensils);

☐ shared equipment that is thoroughly cleaned and sanitised (including, where necessary, taking it apart to clean hard-to-reach places) before use for RTE foods.

When slicing and packaging:

- Directly touching RTE food (e.g. with hands) must be prevented. Hands must be clean whenever processing RTE foods. Wherever possible a clean utensil, or a clean surface (such as wrapping film) must be used to prevent hand contact with RTE foods.
- Equipment and utensils used for raw foods must not be used for cooked or RTE foods unless they have been cleaned and sanitised before being used.

How this is done

- A ready supply of clean utensils, including display trays, tongs, must be provided for hygienic handling.
- Display signs and other items that may come into contact with unwrapped foods must be cleaned and sanitised at least daily.
- Food must be returned to chilled storage/display after slicing/packaging;
- Food must be labelled appropriately according to how it is sold – see *Labelling, Calculating shelf life, Handling, displaying, serving RTE foods.*
- Where RTE foods might be handled at the same time as raw food (e.g. when attending to a customer order) whenever possible, RTE foods are handled before raw foods.
- New batches of sliced products must not be mixed with old batches.

What if there is a problem?

Product past its "use-by" date must be thrown away.

Food that comes in contact with dirty surfaces (e.g. dropped on floor) must be thrown away.

Surfaces/equipment/utensils that have not been cleaned must be cleaned and sanitised before they are used for RTE foods.

Find out why this happened and take action to prevent it happening again. Review staff training.

Write it down

You must write down in the Cleaning schedule the surfaces and equipment used for slicing and packaging RTE foods, when they need to be cleaned (and sanitised); how this is done, and by whom.

Write down (e.g. in the Diary):

- If something goes wrong with slicing and packaging and what you did to put things right

- what you did with food that was affected.

! Ideally RTE foods are handled in separate places to raw foods using equipment and utensils dedicated to RTE food to minimise the chance of cross-contamination with harmful organisms. See also *Listeria*.

Food Control Plan **Ministry for Primary Industries**

Re-using food that has been for sale

Goal

To safely use food that has been on display for sale.

Act requirements:

- Food must be produced or processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- It is illegal to sell food past its "Use-by" date code
- Food in the temperature danger zone (5ºC to 60ºC) will allow harmful microbes to grow that can make people ill.

How this is done

> Control of *Listeria monocytogenes* is an important part of this process (see also *Listeria* in the management section).

Surfaces and equipment must be in sound condition and clean before use. Surfaces in contact with ready-to-eat foods must be sanitised before use – see *Cleaning and Equipment, packaging and other items, Maintenance and Allergens*

Good hand hygiene and personal hygiene practices must be followed when handling food – see *Hand Hygiene and Personal hygiene*

Special care must be taken to handle food that will be re-used by the business. It must:

- have been processed and handled according to the plan; and
- be within its "use-by" date coding.

Hot-held food that can be re-used must be cooled and sold cold. It must not be reheated – see *Cooling hot food and freezing food.*

Example of reusing food

Pieces of chicken have been cooked, portioned, wrapped and hot-held following the procedures in the plan.

They are on display and unsold at the end of the trading day, so are cooled then put in the chiller overnight following the Cooling hot food and freezing food procedure.

The next day some pieces are sold cold from an assisted service display; the rest are shredded and used as sandwich filling.

As the cooled chicken had previously been hot-held before cooling, it was not reheated.

What if there is a problem?

If food has not been properly stored, handled or displayed (e.g. it has become contaminated or has spent too much time in the temperature danger zone) it must not be reused.

Throw away food that has been contaminated or may have become contaminated.

Find out why this happened and take steps to prevent this from happening again.

Retrain staff as necessary.

Write it down

You must write down in the Food that can be reused list the food being re-used, how it will be re-used how it will be handled to keep it safe.

Each week (e.g. in the Diary) confirm that the practices for reusing food have been followed.

You must write down (e.g. in the Diary):

- any problem that you have had in re-using food and what action you took to ensure that it did not happen again; and
- what you did with food that was affected.

Validating water activity

Goal

To ensure that the processing of dried products meet expected levels of water activity.

Act requirements:
- Food must be produced or processed and handled in ways that minimise the contamination or deterioration of food and prevent food containing substances that are unexpected or unreasonable.
- There must be procedures for controlling hazards at each production and processing and handling step where it is essential to eliminate or reduce a hazard to an acceptable level.

Why?

- Dried Ready-to-eat (RTE) foods that are intended to be stored at ambient temperatures must meet a lowered level of water activity to make them safe to eat
- If a required water activity is exceeded and the product is stored in the temperature danger zone (5℃ to 60℃) harmful microbes may grow rapidly.

How this is done

Water activity levels of dried products that are intended to be shelf-stable must be checked by either using a water activity meter, or sending samples to a laboratory, or calculating water activity following procedures in the Plan.

Information obtained from product testing will confirm the effectiveness of your processing.

Validation will show that your process can consistently make product to the water activity level required.

If you operate a validated process you will not need to test samples from every batch you make.

See *Dry-curing and ready-to-eat dry-cured meats, Drying products*.

An example of a validation process is provided in the Guidance on Validating water activity.

What if there is a problem?

If water activity meter tests show the final product has a water activity that is higher than the limit required then provided the product has been handled hygienically and stored outside the temperature danger zone (5℃ to 60℃) it must be stored and sold under refrigeration.

Review recipe and process to identify the cause and determine new times/temperatures for drying/smoking/processing product. Make the product to this revised recipe and send a sample of the new "worst case" finished product to the laboratory to validate the new time(s)/temperature(s).

Food that is not safe to eat must be thrown away.

Write it down

Where a particular water activity level must be achieved for the safety of a product you must write down on the Batch record the water activity for a size of product obtained from any laboratory water activity testing..

Food Control Plan

Validating water activity

How to validate a process for desired water activity - see also Testing finished product

At the end of processing, select product with the lowest percentage weight loss and either:
- check the water activity using a calibrated water activity meter; or
- send a number of representative samples to a laboratory to test the water activity level. (If you also carry out microbiological testing this could be the same sample).

Check with the laboratory beforehand:
- that it is able to test product for water activity – not all laboratories can do this test;
- how samples need to be taken.

Sending a number of samples from the batch will cover the possibility that the 'worst case' sample is found to have a water activity greater than the desired level. Sending samples from more than one batch will cover any batch variation that may occur and to provide greater assurance that your product will be safe.

The results from either the water activity monitor or the laboratory provide information about the % weight loss of product that achieves a desired level of water activity.

To confirm that your process consistently produces product meeting the desired water activity level, test samples from the next two batches of product.

The results from the laboratory will identify the lowest percentage weight loss of product that will meet the desired water activity level. It should also show that the greater the percentage weight loss, the more likely it is that product would exceed the desired water activity level.

After this, provided the checks have confirmed (validated) that your process consistently produces product at the desired level of water activity, you can use the information gained about % weight loss to check water activity in future batches of the same product. You will not need to test every batch (unless you want to).

You can verify your process continues to work by testing one in a number of future batches, for example, one in every five. Over time, and with continued good results, the frequency of verification checks can decrease, for example to one in every ten batches, one in every 20 etc.

Example of using weight loss to verify water activity after validating a process – see also Drying products

You make a batch of dry-cured hams that are intended to be stored unrefrigerated - see Dry curing and ready-to-eat dry-cured meat. The target water activity for this type of product is 0.90 or less.

At the end of processing you calculate the % weight loss from each of the hams. For example:

2.535 kg (weight before drying); 1.995 kg (weight after drying) = 0.54 kg difference

0.54 (weight lost)

2.535 (weight before drying) x 100 = 21.3% Weight loss. You calculate that other hams in the batch have % weight loss of: 20.0%, 19.5%, 21.2%, 23.0%, 18.5% and 19.3%.

The least % weight loss is 18.5%. You send a sample of this product to the laboratory as it represents the 'worst case' from the batch. You also send samples from other hams and other batches – this will help identify alternative % weight loss against water activity if the 'worst case' sample exceeds the desired level of 0.90 (e.g. it has a water activity of 0.91 or higher).

The results from the laboratory show the water activity of the 18.5% weight loss sample = 0.89.

This means that:
- it may be assumed that hams in the batch with a greater percentage weight loss will also have a water activity of less than 0.90;
- when making the same-sized hams following the same recipe, and using the same equipment, achieving a % weight loss of a ham in excess of 18.5%, will be likely to achieve the desired level of water activity of 0.90 or less.

If the water activity from tested product is greater than 0.90, (e.g. in the range 0.91 – 1.00) the recipe must be reviewed and the activity/weight loss exercise repeated. Until product meets the desired level of water activity for ambient storage, product must only be sold if it has been kept chilled and is within its shelf-life date.

Food Control Plan   **Ministry for Primary Industries**

Testing finished product

Goal

To confirm a product is safe and/or the process produces a safe product.

Act requirements:
- Food must be safe and suitable.

Why?

- The Australia New Zealand Food Standards Code (the Code) sets micro-bacteriological limits for certain products
- Microbiological testing will show whether harmful microorganisms are present in the finished product.
- Microbiological testing will help to validate that the recipe, if followed, will consistently produce safe product.

How this is done

What testing do I need to do?

The Code Standard 1.6.1 sets microbiological limits for particular harmful organisms in cooked cured/salted meat; packaged heat treated meat paste and packaged heat treated pate; and uncooked comminuted fermented meat products – see *Limits for harmful organisms in meat products*.

Even if your meat product is not subject to the Code microbiological limits, it may still contain harmful organisms.

Microbiological testing can be used to demonstrate that your meat product is safe – for example that it meet microbiological limits in the guidelines at:
http://www.foodsafety.govt.nz/elibrary/industry/Microbiological_Reference-Guide_Assess.pdf until the end of their shelf-life?

Information on microbiological testing is provided in the *Guidance on testing finished product*.

What if there is a problem?

If a product doesn't meet microbiological limits it must be thrown away unless it may be reworked using a process that is approved by a Food Safety Officer.

Any product that doesn't meet microbioogical limits which has been sent for sale elsewhere (e.g. by another business) must be traced and recalled – see *Recalling food*.

Contact your verifier for advice.

Review practices to identify how this happened and take action to prevent it happening again.

Any products made since the final product tests were submitted can be stored but must not be sold. A review of how the product was made must be undertaken by a specialist before it can be sold.

Contact your verifier for advice.

Write it down

You must write down (e.g. in the Diary) the reference for any sample of food sent for testing so that results can be traced to the correct product/batch.

Complete the submission form provided by the laboratory to clearly identify your product so that it can be traced to the batch.

File your laboratory test results/report with the relevant Batch Record Sheet.

Write down any corrective actions taken.

Food Control Plan

Testing finished product

Cooked cured/salted meat; packaged heat treated meat paste and packaged heat treated pate; and uncooked comminuted fermented meat products.

Microbiological testing can be used to confirm that your products meet the Code requirements and to validate that the manufacturing process produces a safe product. It can be used to test:

• the finished product;

• when validating a new recipe/process;

• on an ongoing basis to ensure there are no harmful microorganisms present.

Validation sampling & testing of products

The first 3 batches of any new process, recipe or group of products should be tested.

Five samples are taken from a batch and tested for the harmful microbes that are either specified for the product by clause 1.6.1 of the Code, or are detailed in the microbiological reference guidelines for your product. Harmful microbes vary with the product but include *E. coli*, coagulase positive staphylococcus, *Listeria monocytogenes* and Salmonella. Information on sampling is at: **https://www.comlaw.gov.au/Series/F2015L00411**

Five samples of product are needed because harmful microorganisms may not be spread evenly through a batch. Information in the Code identifies satisfactory test results for products.

Routine sampling and testing of the validated process

Testing does not need to be carried out on every batch and the frequency can be set by the operator based on factors such as the level of production and number of different types of products. A guide is to start by testing every 5th batch but this can become less frequent if test results are consistently satisfactory.

Other testing

Product water activity, pH and levels of nitrite can also be confirmed by a laboratory.

Example of a routine microbiological sampling & testing programme:

☐ every 5th batch is sampled; or

☐ shaded area for writing (state your sampling plan);

☐ the testing laboratory is shaded area for writing.

Decide on your sample type:

☐ 5 Pre-packed samples (e.g. sliced) ready for sale from the same batch that are traceable to each of 5 different products; or

☐ 5 different products from the same batch ready for sale from which a sample is cut off and sent to the laboratory.

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Name of business:

Specialist retail – meat
Records

Place this page in your Plan Contents section

Specialist meat records

Staff training – specialist meat

Cooking temperature checks

Once-a-week meat and poultry temperature checks

Ready-to-eat foods list

Ready-to-eat foods batch record

Foods that can be reused

2 hour Hot-held food temperatures

Drying products – batch record

Smoking products – batch record

Transported food temperature checks

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Staff training – specialist meat

Name:		Telephone:	
Position:		Start date:	
Address:			

Topic	Relevant	Employee signed*	Supervisor signed†	Date
Essential training				
See also Staff member record for the Basics training	✔			
Training as needed				
Calculating shelf life	☐			
Food additives in bread and bakery products	☐			
Limits for harmful microbes in bakery products	☐			
Composition of bread and bakery products	☐			
Defrosting frozen food	☐			
Preparing raw meat, poultry, seafood	☐			
Making bread, cakes, slices	☐			
Making other bakery products	☐			
Baking and finishing	☐			
Cooking meat and poultry	☐			
Cooking other foods	☐			
Cooling hot food and freezing food	☐			
Hot-holding food	☐			
Reheating food	☐			
Filling sandwiches, rolls, wraps	☐			
Handling, displaying, serving rte food	☐			
Re-using food that has been for sale	☐			
other	☐			
	☐			
	☐			
	☐			
	☐			

* I acknowledge that I have received training in the procedure and agree to follow it.

† The employee has been trained and has demonstrated a good understanding of the procedure and has been observed consistently following it.

Other training

Date	Details
Notes:	

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Food Control Plan

Cooking temperature checks

Meat, poultry, fish and bakery products containing meat, poultry, or fish that are **not** cooked using a standard time/temperature setting must be checked each time with a probe thermometer to ensure that they reach at least 75℃. If the temperature does not reach at least 75℃, cook the product for longer until it does.

Date	Time	Food	Core Temp			Signed
			1st*	2nd	3rd	

*If temperature is more than 75℃ on first probing, further probing will not be necessary.

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Once-a-week meat and poultry temperature checks

Cooking meat and poultry to at least 75ºC

Select one product that you cook using a standard time/temperature to reach at least 75ºC. Cook it and check it to confirm that it reaches at least 75ºC.

If you cook more than one product this way select a different one each week. Use the following to record your check:

Day	Product	Cooking method and standard time/Temperature used	Final core temperature	Action taken if Temperature not reached

Cooking below 75ºC

Select a product that you cook using a standard time/temperature to a temperature below 75ºC (for examples see table below). Cook it and check that the centre of the thickest part of the product has stayed at the required temperature for the correct length of time.

Enter time and temperature used	Date	Time started cooking	Ist probe*		2nd probe	
			Time	**Temp**	**Time**	**Temp**
☐ cooked at _____ ºC for _____ secs/mins						

Use the following to record your check:

Internal temperature	Time	Internal temperature	Time
60ºC	For 45 minutes	**68ºC**	For 4 minutes
63ºC	For 18 minutes	**70ºC**	For 2 minutes
65ºC	For 10 minutes	**73ºC**	For 1 minute

second probe is not needed if core temperature reached at least 75ºC

Reheating meat and poultry

Select one product that is reheated and check it reaches 75ºC. Use the following to record your check:

Day	Product	Reheating method	Final core temperature**	Action taken if Temperature not reached

** The core temperature of the product must be 75ºC or above. If the food has not reached this temperature keep reheating until it does.

Cooling meat and poultry (only required if food has been cooked or heated and then cooled)

Select one hot product and check it cools within the time frame required in the Plan. If you cook and cool more than one meat or poultry product select a different item each week.

Use the following to record your check:

Day	Poultry item	Cooling method	Time started cooling	Temp at 2hrs***	Temp after total 6 hr***	Action taken If temp not reached

*** Products must be cooled from 60ºC to 21ºC in two hours and 21ºC to 4ºC within a further four hours. See *Cooling hot food and freezing food*

Food Control Plan

Ready-to-eat foods – batch record

A record to show how each batch of ready-to-eat product meets it's shelf-life requirements – see also *Ready-to-eat foods list.*

Date made/ received	Food and manufacturer	Batch No. and Use-by date	Storage temp.	Date manufactured food opened and new Use-by date	Last date for sale	Last date sold/used and anywastage	Signed					
Example 31st March	*Example* 1kg Jones unsliced vac-packed ham	*Example* JHam 2 May 2015	*Example* 1Chilled <5oC	*Example* Opened and first sliced 2nd April	*Example* Information from manufacturer	*Example* 6th April 50gm thrown.	*Example* C H					
Example 1st April	*Example* 1kg own roast beef cooked for slicing	*Example* Beef20 6 April 2015	*Example* Chilled <5oC	*Example* n/a	*Example* Laboratory shelf-life testing	*Example* 3rd April	*Example* C H					

Food Control Plan

Foods that can be reused

Record of foods that can be reused and how they must be handled when being reused

Type of food for reuse	Has it been handled in accordance with the FCP?	What must be done to keep the food safe until reuse	What food is the reused food used in	What must be done to keep the new food product safe?	What date code is applied to the new food product?	Who checks that this is done?

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Food Control Plan

Two-hour hot-held food temperature

Hot-held food must be kept hot at 60ºC or above. Any food that has been held for two hours must be checked with a thermometer to ensure that it is still at, or above, 60ºC. This temperature check must be repeated for every two hours that the food is hot held).

Date	Time*	Food items	2hr temp	Time of check	Comments/action	Initials

* Time the food commenced hot-holding.

What if food is below 60ºC?

If hot food has been held at a temperature below 60ºC for two hours or less, it can either be:
- thoroughly reheated to 60ºC or above, and served hot (above 60ºC); or
- cooled to below 5ºC and kept at this temperature until it's eaten. Continued cooling needs to ensure that the food has spent no more than four hours between 60ºC and 5ºC;

If hot food has been held at a temperature below 60ºC for more than two hours it must be thrown away.

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Drying products – batch record

Weight loss and Water Activity

Food Type _____ Water activity required for product: _____ A_w

Date _____ Drying time: From _____ To _____

Temperature _____ Humidity _____

Additional drying time needed? From _____ To _____

Weight loss % = _____ A_w

Food type/ reference	Weight before drying	Weight after drying	Weight loss	% Weight loss	Meets Criteria ✓/✗

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Smoking products – batch record

Smoked products that are cooked.

Product/Food type	Food core temp/ time needed	Time batch started in smomer	Time batch finished	Food core temp. met ✓/✗	Further time needed?Y/N	If Y, what was done to ensure food was cooked?	Signed

Transported food temperature checks

Food that needs to be kept cold (if it is not going to be eaten within 4 hrs of taking out of temperature control) must be transported at or below 5℃.

Food that needs to be kept hot (if it is not going to be eaten within 2 hrs) must be transported at 60℃ or more.

Record transported food temperatures here.

Date	Type of food	Temp	Action taken (if food has been held between 5℃ and 60℃ for four or more hours)	Who checks?

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