



Haumaru Kai Aotearoa

New Zealand Food Safety

Ministry for Primary Industries

Te Kai Manawa Ora

Marae Food Safety Guide



DISCLAIMER

Every effort has been made to ensure the information in this guide is accurate. MPI does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.

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Reprinted September 2018



Nāu te rourou, nāku te rourou, ka ora ai te iwi

By sharing our gifts with one another the people will thrive





Ihirangi

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Mihi

Ko te tūmanako kia noho te rangimarie
o te Atua i roto i ō tātou whakaaro,
whakawhitinga kōrero hoki, kia ū ai ngā
tikanga me te māramatanga o ā tātou mahi
katoa, ki te tirohanga whānui

No reira, korōria ki te wairuatanga e
tauawhi nei i a tātou

I roto i ngā āhuatanga o te wā,
Ka mihi ake ki o tātou tini mate.
Haere hoki atu rā ki te Matua-nui-i-te-rangi

Kia tātou te hunga ora tenā rā tātou katoa
i roto i ngā manaakitanga o te wā. Ko te
tumanako e ohaoha ana ngā āhuatanga
whakatairanga i te hauora o te mana
tangata.

Ko te whakaaro nui o Te Kai Manawa
Ora ko te whakamaru i te kai, kia ora
pai ai te tangata i roto i te ataahua o te
manaakitanga.

No reira ka kohaina tēnei taonga Te Kai
Manawa Ora e Manatū Ahu Matua, ki ngā
tōpito e whā o te motu hei hāpai i te ora o te
iwi Māori i runga i te ōhaki o te whakatauki:

Ki te kī mai koe ki au
He aha te mea nui o tenei ao?
Maku e ki atu,
He tangata, he tangata, he tangata.

Tena koutou, tena koutou, tena
ano tatou katoa

Ti hei wā mauri ora!

May the peace of God guide our thoughts
and discussions so that the value(s) and
clarity of all that we do, can reach out as far
as the eye can see

Glory to the spiritual essence that embraces
us all

We pay homage to the many who have
passed on and bid them farewell on their
journey to the Almighty Creator

To us the living, greetings and blessings.
May the sources to support good health and
to maintain individual status of wellbeing,
be plentiful.

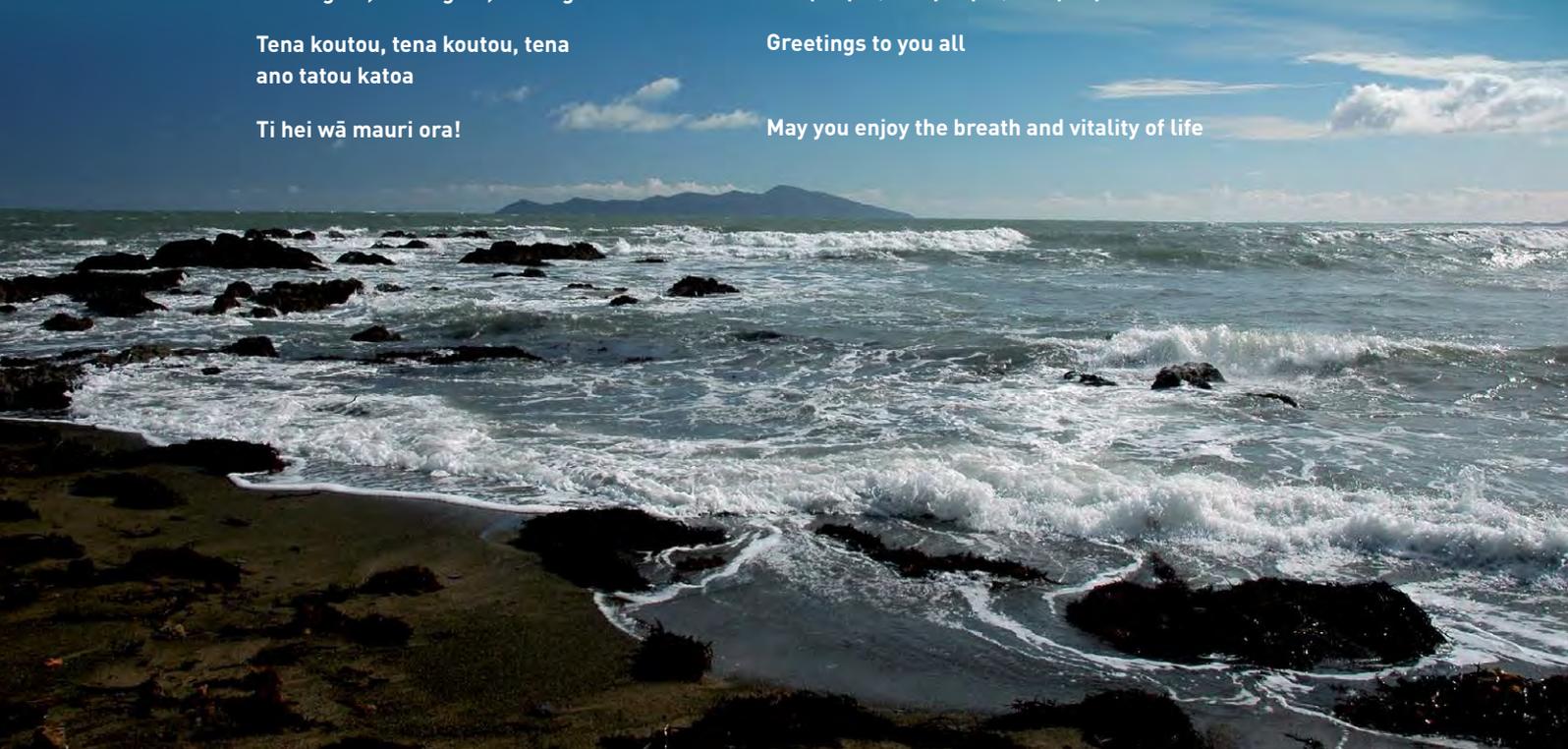
The focus of Te Kai Manawa Ora is how to
keep food safe so that people can enjoy
hosting and sharing food with others and
maintain the integrity of their hospitality.

The Ministry for Primary Industries has the
pleasure of distributing Te Kai Manawa Ora
to the far corners of Aotearoa, to support
the legacy of the following proverb:

If you were to ask me
What is the greatest thing in this world
I will reply with
It is people, it is people, it is people.

Greetings to you all

May you enjoy the breath and vitality of life



He Kupu Whakataki

Introduction



He Kupu Whakataki Introduction

In te ao Māori, the Marae is traditionally regarded as the place that encompasses all things Māori to its fullest capacity. It is the central point for hui and decision-making. It is here that Māori have cultural and spiritual responsibilities to maintain the dignity and mana of kaumātua, whānau hapū and iwi, and an essential element used to ensure this is to provide kai.

The cultural value of kai has its roots imbedded in the act of manaaki tangata – the giving and receiving of hospitality. Reciprocity is a fundamental principle of Māori culture. All aspects of life have a mauri and so it is with kai and places where kai is cultivated and gathered (ngā wāhi mahinga kai). The balance of food-producing resources were carefully maintained and protected by ture (a mechanism) known as Rāhui, especially applied when a resource was in danger of being depleted.

In 2007, the former New Zealand Food Safety Authority (NZFSA) surveyed a number of Marae to explore their practices around kai and food safety. The findings of that survey, along with requests from many people, prompted the development of this guide to producing safe kai on Marae – Te Kai Manawa Ora.

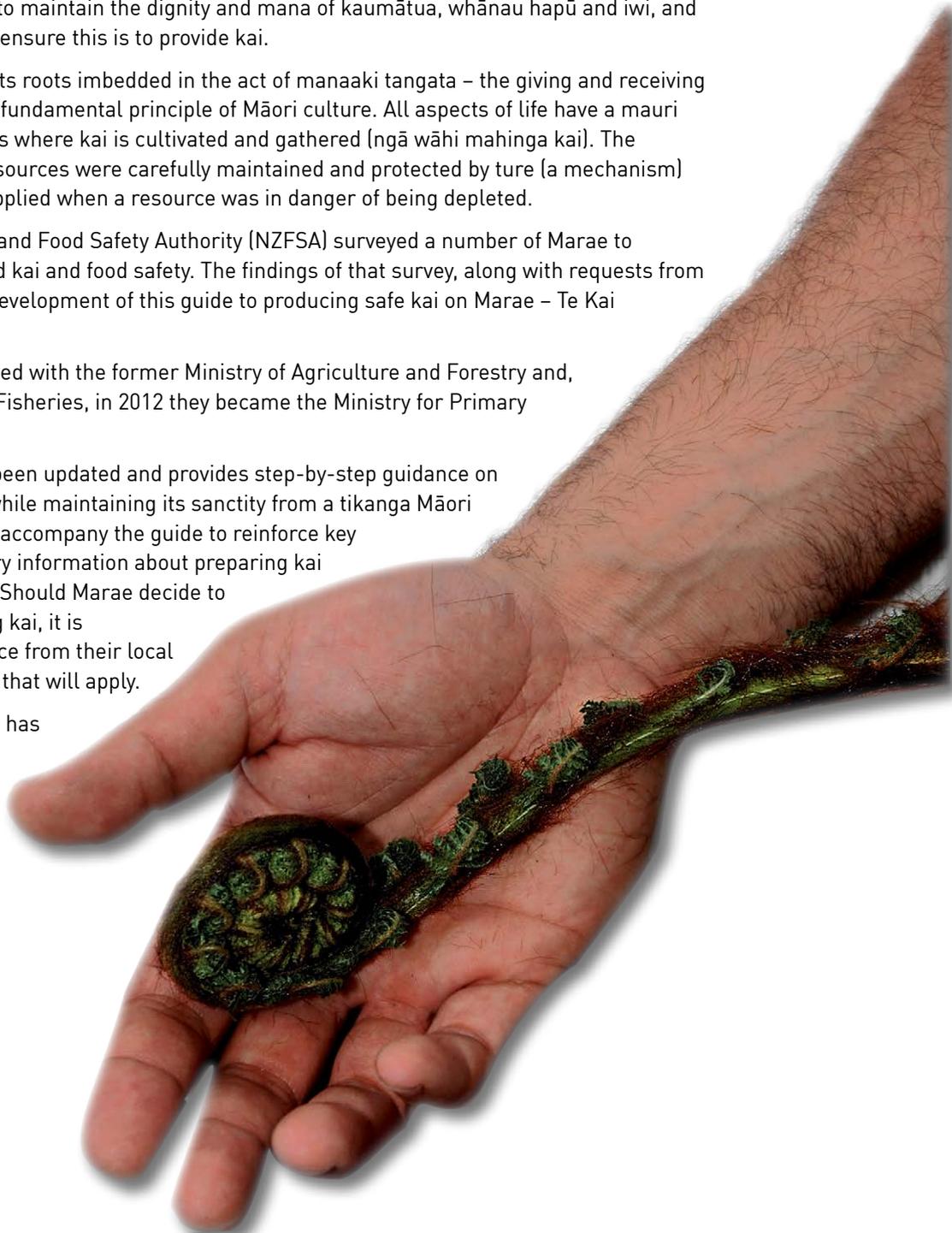
In 2010, the NZFSA was merged with the former Ministry of Agriculture and Forestry and, together with the Ministry of Fisheries, in 2012 they became the Ministry for Primary Industries (MPI).

Te Kai Manawa Ora has now been updated and provides step-by-step guidance on procedures to keep kai safe while maintaining its sanctity from a tikanga Māori perspective. Other resources accompany the guide to reinforce key messages. It is non-regulatory information about preparing kai in a non-commercial setting. Should Marae decide to go into the business of selling kai, it is recommended they seek advice from their local council about the regulations that will apply.

The Te Kai Manawa Ora guide has been aligned to the Te Pae Mahutonga model. This incorporates a holistic approach to kaumātua, whānau, hapū and iwi wellbeing.

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Community Extension

Ministry for Primary
Industries
Manatū Ahu Matua



Kaupapa/Foundation Te Pae Mahutonga

The six stars of the Te Pae Mahutonga Model provide a conceptual framework for describing food safety in Māori terms and for guiding the development of the Marae Food Safety Guide and associated documents. Te Pae Mahutonga is the Māori name for the constellation also known as the “Southern Cross” and which provided a vital navigation tool for Māori and non-Māori. The framework uses the four stars of the cross and two pointers to signify six key dimensions to the promotion of food safety on the Marae.

The four stars of the Southern Cross are:

Mauri Ora	Access to Te Ao Māori (Māori world)
Waiora	Protection of the physical environment
Toiora	Promotion of healthy lifestyles
Whaiora	Participation in the wider community

The Pointers are:

Ngā Manukura	Leadership
Te Mana Whakahaere	Autonomy



Te Kai Manawa Ora utilises the four main stars of Te Pae Mahutonga model to identify its four major sections

Te Pae Mahutonga	Objectives	Key Elements
Mauri Ora	Access to Māori Resources – good health leads to secure cultural identity; co-ordinating action that leads to good health, economic gain and social policies that foster greater equity	<ul style="list-style-type: none"> • Tikanga/the dynamics of doing what is right so as not to transgress the tapu and mana of anyone in a given context • Mana of the Marae is at stake when catering for whānau, hapū and iwi • Economic resources – land, forests, fisheries • Te Reo/Language and Mātauranga/knowledge • Networking with Māori health organisations
Waiora	Environmental Protection – spiritual element that connects human wellness with air, terrestrial and water environments	<ul style="list-style-type: none"> • The links between people and the natural environment • To encourage people to take care of their communities and the natural environment • Wai – water is free of pollutants • Air is free of irritants
Toiora	Healthy Lifestyles – health outcomes associated with behaviour and lifestyle; to minimise the harm from risky behaviours	<ul style="list-style-type: none"> • Nutrition, Oranga o te tangata/wellbeing • Manaaki/caring • To meet the needs of Māori and communities and is sustainable for the future • Programmes are culturally managed
Whaiora	Participation in Society – wellbeing is dependent on the terms which Marae participate in the community and on the confidence with which they can access services	<ul style="list-style-type: none"> • Participation • Training and education • Mātauranga/knowledge • Mahi/employment • Effective community action in setting priorities • Making decisions, planning strategies and implementing them to achieve better health
Ngā Manukura	Māori Leadership – health professionals and agencies working together with Marae committees, kaumātua, whānau, hapū and iwi and community leaders to ensure effective promotion of health services	<ul style="list-style-type: none"> • Supporting personal and social development through providing information, education for health and enhancing life skills • Forming alliances between leaders and agencies
Te Mana Whakahaere	Autonomy – capacity for self governance is central to good health and positive wellbeing; to organise and assert a measure of control over development	<ul style="list-style-type: none"> • Marae and communities taking ownership of community affairs • Recognition of collective aspirations • Adopting relevant processes • The responsibility for health promotion is shared among individuals, community groups, health professionals, health services, government agencies and Marae

	Tohu (Symbol)	Narration
	 <p data-bbox="300 555 534 604">Te hā o te ora – The essence of wellbeing</p>	<p data-bbox="619 407 1401 542">Depicted in this pattern are torino (single spiral) and kape (seed pod). The torino represents a single purpose or function and the kape represents a concentrated source of positive energy. Together these motifs combine to create good health.</p>
	 <p data-bbox="331 862 502 911">Te puna o te ora – The spring of life</p>	<p data-bbox="619 694 1423 862">Depicted is a “rauru” motif (double spiral). The single upper spiral represents male energy and the spiritual element to life, and the single lower spiral represents female energy and the physical element to life. Together they combine to become “Waiora” or the most pure essence of creating and sustaining life e.g. water, air.</p>
	 <p data-bbox="306 1169 528 1218">Hauora tū pakari – Stand strong for health</p>	<p data-bbox="619 1014 1417 1149">Depicted is torino spiral with the unaunahi design or fish scales. The unaunahi motif has food and protective qualities, therefore is a source of positive nutrition. Together they represent positive protection and the continuum of life.</p>
	 <p data-bbox="255 1476 579 1525">He huihuinga tangata, he pukenga kōrero – The art of engagement</p>	<p data-bbox="619 1314 1428 1449">Depicted is a rauru (double spiral) and the “takarangi” pattern (chevron motif). The rauru depicts the coming together of people for a common purpose. The takarangi design gives direction and represents the ability to access the components necessary to complete the common purpose.</p>

**Ko te ohonga ake
o aku moemoea,
ko te puaawaitanga
o ngaa whakaaro**

The awakening
of dreams and
aspirations comes
from the blossoming
of ideas, thoughts and
innovations
– Te Puea Herangi



Southern Cross Constellation

Te Pae Mahutonga

Mauri Ora

Te hā o te ora

The essence of wellbeing

Mauri Ora

Ihirangi

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Ētahi kōrero hihiri

Pēna i pāngia tētahi kaimahi o te wharekai e te mate kōrere, ruaruaki rānei i te kotahi wiki ki muri, me whakamōhio tēnei āhuatanga ki te kaiwhakahaere, ki te kuki rānei o te wharekai. I muri mai i te whakamōhioatanga me whai ko ngā kōrero hihiri mo te whakamaru kai o te wāhanga *Te Hauora me te Māuiuitanga*.

Kaupapa

If someone working with kai is ill they can infect others through contaminating the kai. Those bad microbes that can cause a foodborne illness can be transmitted through a person's faeces (tutae), vomit and in some cases other body fluids.

If anyone working in the wharekai has had diarrhoea or vomiting in the previous week they should tell the kitchen manager/ kaiwhakahaere or chief cook. When reported, the kai safety tips in the *Health and Sickness* section should be followed.

Kai safety tips

Vomiting is an important symptom of a viral or bacterial infection. A food handler who has vomited in the 48 hours before starting work in the wharekai should be excluded from working there and should seek medical advice. Don't allow them to work in the wharekai until they've been cleared to do so by the doctor.

Diarrhoea may also indicate the presence of an infection. Anyone suffering from diarrhoea should stop working in the wharekai immediately. If there is only one episode of diarrhoea and no other symptoms such as ongoing nausea, abdominal cramps or fever, the person may resume kai handling duties again after 48 hours of being symptom-free. They should be reminded of the importance of good hand hygiene practice, particularly hand washing and thorough drying. If symptoms persist, the person should seek medical advice. Don't allow them to work in the wharekai until they've been cleared to do so by the doctor.

Anyone who has recovered from symptoms of vomiting or diarrhoea in the previous week should tell the kitchen manager/kaiwhakahaere or the chief cook, and they should be reminded to always wash and dry their hands thoroughly (see section on Hand hygiene).

Anyone handling food who has infected sores on exposed skin (hands, face, neck or scalp) can transfer bacteria to food. Similarly, anyone with inflamed, weeping or discharging wounds or sores should stay out of the kitchen until they're completely healed.

Clean wounds must be totally covered with a brightly coloured waterproof dressing, but there's

no reason why this person shouldn't handle food. If any wharekai workers have infected sores on non-exposed skin, e.g. the back or legs, they can still work with kai, but they should be reminded about the importance of careful hand washing and drying.

Anyone whose eyes, ears, mouth or gums are weeping or discharging shouldn't handle food until they're better. People with a persistent sore throat and no other respiratory symptoms (such as a runny nose or cough) might have a throat infection and they should see a doctor.

Nobody with jaundice (yellowing of the skin) who is suspected of, or has, Hepatitis A should be allowed to work in the wharekai.

If someone vomits while in the wharekai, report it immediately to the kaiwhakahaere or chief cook. Send the sick person home, and clean and sanitise the area including the cleaning equipment itself (see section on *Cleaning and sanitising*). Throw away any kai that might have become infected.

If you're uncertain whether a person poses a risk, play it safe and contact your local Environmental Health Officer at the council or Health Protection Officer (see *Contacts* section).

- **The definition of "diarrhoea"** does not include conditions such as Irritable Bowel Syndrome, Crohn's Disease or ulcerative colitis.
- **The definition of "vomiting"** is in the absence of other obvious causes e.g. morning sickness or alcohol poisoning.



Ētahi kōrero hihiri

Kaua e pā ō ringa ki tōu ihu waha, ou makawe me tō kiri i a koe e whāwha ana i te kai.

Kaua e tua, e matihe, e mare rānei ki runga i te kai.

Kaupapa

Whānau can become ill if kai has been contaminated with harmful microbes or viruses carried by ill ngā ringawera in the wharekai.

Avoid touching your nose, mouth, hair and skin while preparing kai. Do not spit, sneeze or cough over kai.

Kai safety tips

Anyone handling kai in the wharekai should:

- wear clean clothing;
- avoid touching their nose, mouth, hair and skin;
- not spit, sneeze or cough over kai;
- not smoke;
- use disposable tissues to blow their nose and wash hands after use;
- use a clean utensil each time food is tasted.





Remember the 20+20 rule – wash hands for 20 seconds and dry hands on a paper towel or clean cloth towel for 20 seconds

Ētahi kōrero hihiri

Kai maumahara ki te tikanga 20+20 – Horoia ō ringaringa mo te 20 hekena, kātahi ka whakamaroke i ō ringaringa mā te taora pepa, taora hākaru mā rānei, mo te 20 hekena.

Kaupapa

Having really clean hands is one of the best ways to keep harmful microbes (which can make people ill) from getting onto kai.

Good hand hygiene procedure

- Wet hands with warm running water
- Add soap
- Spread soap all over the hands and between the fingers
- Rub the hands together vigorously for 20 seconds (a good way to measure this is to sing “Happy Birthday” to yourself twice!)
- Rinse hands well
- Dry hands on two paper towels for 10 seconds each or a clean cloth towel for 20 seconds. If you have an air drier, shake and move your hands under the air flow until they're completely dry.

It's called the 20+20 rule.
Wash + Dry = Clean!

Kai safety tips

If you're working in the Marae wharekai, wash and dry your hands thoroughly, especially before eating or handling kai. This includes washing hands:

- after handling uncooked kai and before handling ready-to-eat kai;
- after handling poultry or meat and before handling other kai;
- after touching animals;
- after handling rubbish;
- after using the toilet or changing a nappy;
- after smoking;
- after any other activity that can contaminate hands.

Tips for using gloves safely

Wearing gloves is not a substitute for hand hygiene – you still need clean hands.

Wash and dry hands before putting on gloves.

Change gloves between tasks (e.g. after handling uncooked kai and before handling ready-to-eat kai) and after removing them.

Jewellery

Rings can contaminate food so it's recommended that people don't wear too many while working in the wharekai.

If you can't remove your wedding band, cover it with special hygiene tape.





Someone who has a food allergy needs to know the exact ingredients of the kai they eat.

Ētahi kōrero hihiri

Kai āta mōhio te tangata pangia e te mate tūtohu mai i te kai, he aha rawa ngā whakaranu o ngā kai, e kainga ana e ia.

Kaupapa

Within minutes of eating the wrong kai, a person with a food allergy can have a serious reaction, even leading to death. Manuhuri with a food allergy need to be able to make informed decisions about the kai they eat.

Kai safety tips

When someone makes it known that they have a food allergy, workers in the wharekai must be able to accurately advise them about the kai. The following will assist when advising manuhuri to make an informed decision. It is important that all the potential sources (which could be more extensive than listed below) of the food allergen are explored.

Foods that most frequently cause reactions include cereals, shellfish, eggs, fish, nuts, milk, sesame seeds, peanuts, soybeans, sulphites and bee products such as royal jelly, pollen and propolis. These foods are responsible for over 90% of serious reactions.

Know what is in the kai. Someone who has a food allergy will need to know the exact ingredients of the kai that they eat.

- Obtain and keep accurate, written details about all the ingredients of prepared meals, as well as prepackaged kai.
- Check all the ingredients in the dish (and what they contain) as well as what you use to cook or garnish the dish with.

Avoid cross contact. Make sure kai does not contain small amounts of an allergen through contact with surfaces and utensils that have come into contact with an allergen.

- Ensure that clothing is clean and thoroughly wash your hands (see section on *Hand Hygiene*).
- Prepare food containing different allergens in separate areas using separate equipment and utensils. If this is not possible then thoroughly clean all equipment and utensils to be used prior to preparing the kai.
- Do not fry kai in oil that has previously been used to fry kai containing an allergen.

If there is any doubt whether a food contains a small amount of an allergen then tell the person with the food allergy – **NEVER GUESS!**

If you think someone is having a severe allergic reaction

- Do not move them
- Ring 111 and ask for an ambulance with a paramedic straight away
- Explain that someone could be having an anaphylaxis reaction (pronounced anna-fill-axis).



Ētahi kōrero hihiri

Kia tika te whāwhā me te mahi i ngā kai he hanga paihana kei roto.

Kaupapa

Some kai naturally contains harmful poisons called toxins. In nature, these toxins are useful to the plant to discourage insects or protect it from spoiling if it gets damaged by weather, handling, UV light, or microbes.

Kai with natural toxins needs to be handled and prepared correctly.



Kai safety tips

The most commonly-eaten kai that can contain natural toxins includes:

Kumara – Kumara produces toxins in response to injury, insect attack or other stress. The toxins can give the kumara a bitter taste and are usually concentrated near any damage. Cut off and throw away any damaged bits of the kumara before cooking. If the kumara tastes bitter, don't eat it.

Parsnips – toxins in parsnips are usually strongest in the peel or surface layer of the plant, or around damaged areas. Again, they protect the plant when it's been stressed. One particular toxin can cause a stomach ache or a painful skin reaction when someone is exposed to the sun's UV rays after eating it. Before cooking, always peel parsnips and remove any damaged parts. The levels of toxin drop when the parsnip is cooked. Don't re-use the cooking water; throw it away.

Potatoes – the highest levels of toxins in potatoes are in their sprouts and the peel of those potatoes that taste bitter. To avoid sprouts growing, store potatoes in a dark, cool, dry place. If there are sprouts, green or damaged parts, cut them off before cooking. The toxins are not destroyed by cooking so don't eat cooked potatoes that still taste bitter.

Kidney beans – soak raw beans for at least five hours and then boil them briskly in fresh water for at least 10 minutes to destroy any toxins. Don't cook raw beans at low temperatures (e.g. in a slow cooker) as the toxin may not be destroyed, and undercooked beans can be more toxic than raw ones. As few as four or five raw kidney beans can cause severe stomach ache, vomiting and diarrhoea. Tinned beans can be used without further cooking.

Rhubarb – don't eat the leaves as they can be very toxic.

Zucchini (courgette) – zucchini occasionally contain a toxin which gives them a bitter taste and can cause vomiting, stomach cramps, diarrhoea and even collapse. You won't usually get toxins in commercially grown zucchini, but don't eat zucchini if they've got a strong unpleasant smell or bitter taste.

Native berries – some berries contain natural toxins that require removing or neutralising before consumption. The kernel of the karaka berry contains a poison called karakin which requires extensive processing to remove. Throughout Aotearoa there are different methods for removing this toxin and it is recommended that advice from a kaumātua is sought to ensure the process is correctly followed as it is a very dangerous poison. The poroporo berry needs to be ripe before being eaten as the unripe berries are very poisonous. The poroporo berries should be harvested when they are orange in colour.

Whether someone has a reaction to natural toxins depends on the strength of the toxins present and the person's own sensitivity to them.

It is important to include a wide variety of fresh fruit and vegetables in your diet as these foods lower the risk of more serious health problems (such as heart disease, cancer, diabetes and obesity) than those associated with natural plant toxins.



Only buy ingredients and kai supplies from reputable suppliers to ensure they are safe and suitable.

Keep perishables cold during delivery.

Get kai from safe sources.

Ētahi kōrero hihiri

Me hoko ngā whāranu me ngā kai mai i ngā wāhi anake, ē mohiotia ana kei te haumaruru me te tōtika ngā kai.

Me whakamātao ngā kai ka tere kino, i te wā whakaneke i runga waka.

Kaupapa

To make sure that the kai you use is safe and suitable, source your ingredients and kai supplies from reputable suppliers. Transport all kai safely; keep perishables cold during delivery so harmful microbes can't grow to dangerous levels. Wash fruit and vegetables before use.

Kai safety tips

A reputable supplier is defined in the Definitions section.

Receiving incoming goods

Here are some checks for when kai is delivered to the wharekai. If you can't tick all of these off, reject the kai and send it back. Contact the supplier and try to resolve any problems quickly. If problems persist, change suppliers.

Check that:

- the packaging is free from damage;
- the packaging is properly labelled with the name and address of the manufacturer and has a batch code;
- the kai is not past its expiry date;
- the vehicle and delivery person are clean and the kai has not been exposed to any hazards (chemicals, machinery etc) during the journey;
- frozen kai is frozen solid when delivered with no signs of defrosting;
- perishable kai is delivered chilled. It should be cold to the touch (also see *Scombroid fish poisoning* section).

If you are concerned that meat or seafood you are being offered has not come through the regulated system, ask your supplier to provide proof they are registered with MPI or their local council. If you are not satisfied you are being offered products that can be legally sold, find a different supplier.



Ētahi kōrero hihiri

Kia tūpato kaua e whaiwhai me te puhipuhi (tia, poaka rānei) i ngā wāhi kua oti te whakatakoto i ngā paihana (pēnei i te brodifacoum me te cyanide).

Kaupapa

Homekill is the killing and butchering of farmed animals for the animal owner's own consumption or use. Recreational catch is meat or seafood gathered from the wild. Neither can be sold or bought for human or animal consumption so you won't find it at your local supermarket or butcher's shop, and because it's not subject to the same regulatory controls as meat you buy from a supermarket or butcher, you eat it at your own risk.

Make sure you are not hunting (e.g. wild deer, pig etc) in an area where bait with poisons like brodifacoum or cyanide have been laid.

It is illegal to trade homekill or recreational catch meat and there are big penalties for doing so. The maximum fine is \$75,000 for individuals. and \$300,000 for corporations.

Kai safety tips

Ngā Tikanga

When there is a hui on a Marae, homekill and recreational catch meat is often provided as a koha.

From a tikanga Māori perspective it is regarded as an act of giving and sharing of kai. It's also about manaakitanga (*caring and respect*) to provide kai at such events, whether it be from a homekill or recreational catch or from a registered outlet.

For guidance

- Homekill can be served on Marae for traditional activities within the iwi or hapu, but commercial or fee for sale events on a Marae (including hui held for other organisations) must use commercially processed meat i.e. meat from an abattoir, supermarket or registered butcher.

More information

- The reason for caution with homekill and recreational catch is that the animals might have come into contact with poisons. Possum control contractors use poisons such as brodifacoum, cyanide and 1080 and not all animals die after eating poisoned bait – some just accumulate the poisons in their body.
- If you, your whanau, pets or working dogs eat meat from wild animals such as deer and pigs, make sure you don't hunt in areas where these poisons have been laid. If you hunt on private property, check with the property owner to see if poisons have been laid, and if so where and

when. If you hunt on crown land, check the current DOC Pesticides Summary to see if poisons have been laid.

- Homekill or recreational catch also may not have been processed using the good hygiene practices or processing standards used with commercially traded meat and seafood. It could contain illness-causing bacteria because of sick or diseased animals being killed or cross-contamination due to lack of hygiene or the meat/seafood being stored or transported incorrectly.
- Recreationally collected seafood could be contaminated with illness-causing bacteria if it has been collected from places where the sea water is contaminated with sewage or toxic algae. Fish that hasn't been chilled properly could contain histamines that cause allergic reactions in some people.

- For more information on kai safety and regulations relating to homekill and recreational catch, go to www.mpi.govt.nz/processing/meat-and-game/homekill-hunting-game-and-wild-foods/homekill-and-recreational-catch-service-providers/ or call 0800 00 83 33 to ask for a copy to be sent to you.
- IRD's policy on GST and taxation of koha can provide guidance on what is a "commercial" activity. Go to www.ird.govt.nz



Fish should be gutted and rapidly chilled as soon as possible after it is caught.

It needs to be kept cold at all times during transport, storage, processing and display.

Ētahi kōrero hihiri

I muri tonu i te mautanga o te ika, me tere tonu te whakamātao.

Me noho whakamātao tonu i ngā wā whakanekeke, whakaputu, tukanga me te whakaari i te kai.

Kaupapa

Scombroid fish poisoning (also known as histamine poisoning) can occur when you eat kai (usually scombroid fish) containing high levels of histamine. Anyone can be affected by scombroid poisoning and the symptoms start quickly – from a few minutes to several hours after eating the affected fish.

Symptoms usually include headache, dizziness, red rash (particularly over the face and neck), itchiness, hot flushes, sweating, abdominal cramps, diarrhoea and a burning sensation in the mouth. Symptoms can last up to 12 hours and usually have no long term effects. Serious cases can be treated with antihistamines.

Kai safety tips

Scombroid fish include kahawai, mackerel, tuna, bonito and kingfish. Other fish species that have been associated with scombroid poisoning include sardines, pilchards, salmon, anchovies, herring and marlin.

Scombroid fish contain high levels of an amino acid called histidine in their flesh. If the fish gets too warm after being caught (say, in the sun or in the car) the histidine begins to convert into histamine. If the levels of histamine get too high they cause the poisoning symptoms described above.

To prevent scombroid poisoning gut and chill the fish rapidly and as soon as possible after it's caught. Keep it cold (i.e. put it in a chilly bin with lots of ice) at all times during transport, storage, processing and display. Each time the fish gets too warm (above 2°C) more histamine forms and the risk of food poisoning increases.

Freezing or cooking the fish once it's become contaminated **will not destroy** the poison or prevent illness.





Ētahi kōrero hihiri

Me wehe te wā mahi i ngā kai mata me ngā kai māoa, ā, kia mā tonu te whāwhā i ēnei roopu kai ē rua.

Whakawaiatia ki te horoi i ngā ringaringa kia mā.

Kaupapa

Cross-contamination is when harmful microbes get from dirty to clean items in the kitchen. Kai can be infected with microbes by using dirty utensils or chopping boards, and from dirty hands, sneezing or coughing over kai, and so on.

Prepare raw and ready-to-eat kai at different times with thorough cleaning in between.

Practice good hand hygiene.

Kai safety tips

If it's a long time since the wharekai was last used, you might have to clean surfaces and utensils before you start preparing kai as they can become contaminated and transfer harmful microbes to other foods.

Clean and sanitise bench surfaces, equipment, and knives etc before use, between preparing different types of food (e.g. meat and vegetables, or raw and cooked or ready-to-eat foods) and after use (see *Cleaning and sanitising* section).

Use separate coloured chopping boards for each food type e.g. vegetables might be a green board, meat a red board, etc. Raw poultry requires its own chopping board.

You need to thoroughly clean, sanitise and dry boards between tasks (see *Cleaning and sanitising* section).

If possible, when

preparing raw kai, use a separate area of the wharekai from the one used to prepare cooked or ready-to-eat kai.

If you can, prepare raw and ready-to-eat kai at different times and thoroughly clean and sanitise in between (see *Cleaning and sanitising* section).

If you've prepared food outdoors, cover it as soon as possible to protect it from insects, birds and animals.

Practice good hand hygiene (see section on *Hand hygiene*).

When kai is on display, etc, follow the kai safety tips in the section on *Display/self service*.

Don't allow animals in the wharekai – they don't know about hygiene!





Take kai to the Marae or home as soon as possible after purchase – don't leave it in the car.

Put chilled and frozen foods into the fridge as soon as you reach the Marae or home.

Ētahi kōrero hihiri

Me hari torotika te kai ki te marae ki te kāinga rānei i muri tonu mai i te hokonga – kua e waihotia ki roto i te motokā/waka.

Me rau ngā kai mātao mē ngā kai hukapapa ki roto i te pouaka whakamātao kai, i te taenga atu ki te Marae, ki te kāinga rānei.

Kaupapa

Sometimes you might have to cook kai in one place and then take it somewhere else to be eaten. Unless it's transported carefully, kai can become contaminated and microbes can quickly grow to dangerous levels. You also need to take care transporting raw perishable kai such as meat, dairy foods and seafood.

Kai safety tips

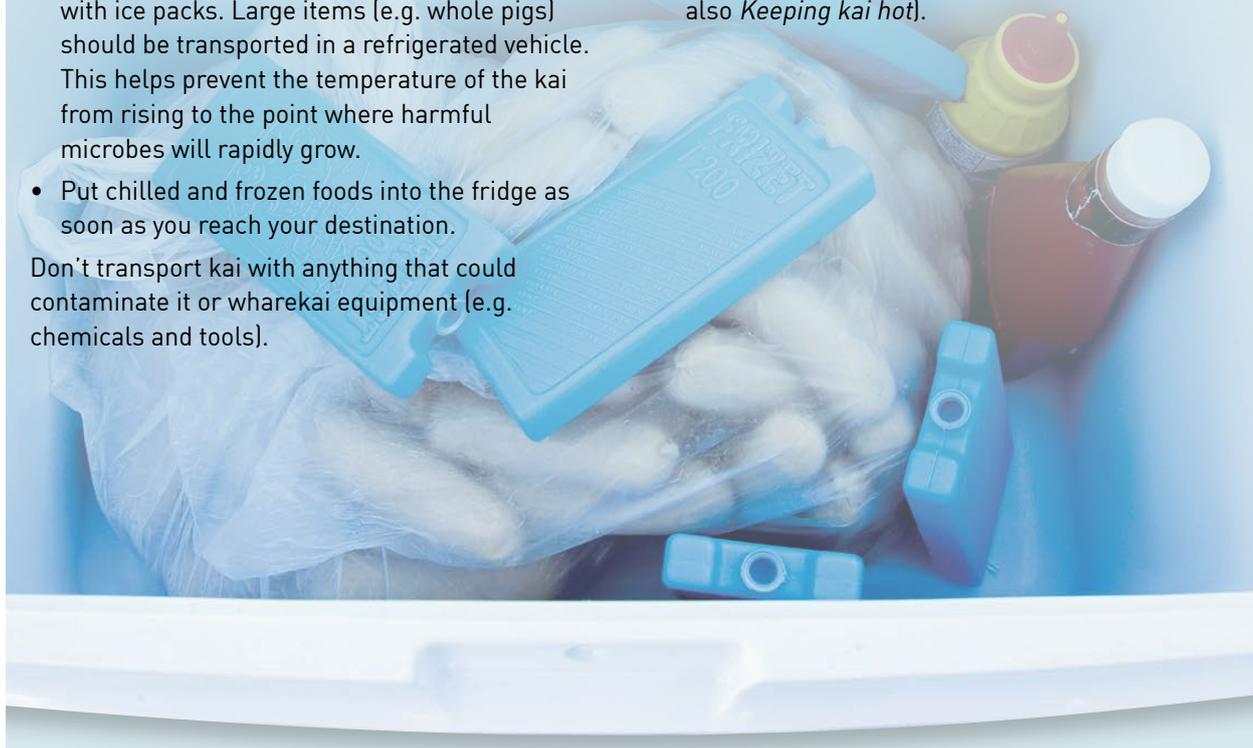
Raw and ready-to-eat kai:

- Pack raw meat and poultry in separate bags away from other kai so their juices cannot drip onto them and contaminate them.
- Take kai to the Marae or home, as soon as possible after you buy it – don't leave it in the car!
- On a hot day or if you have a journey of more than 30 minutes, put perishable food such as meat, dairy products or seafood into a chilly bin with ice packs. Large items (e.g. whole pigs) should be transported in a refrigerated vehicle. This helps prevent the temperature of the kai from rising to the point where harmful microbes will rapidly grow.
- Put chilled and frozen foods into the fridge as soon as you reach your destination.

Don't transport kai with anything that could contaminate it or wharekai equipment (e.g. chemicals and tools).

Cooked kai:

- Cool cooked food down quickly before transporting it. (see *Cooling hot prepared kai* section). Cover the kai and put it into a chilly bin or cooler bag with ice packs.
- For kai that will be served hot, cool it and transport it as above, then reheat it at the new venue until it's steaming hot (see *Reheating prepared kai and leftovers* section)
- If transporting hot, use within two hours. (See also *Keeping kai hot*).





Ētahi kōrero hihiri

Whāia he kaupapa “uru tuatahi, puta tuatahi.” Me neke ngā kai tawhito ki mua, ka rau i ngā kai hou ki muri.

Whakanoho wehetia ngā kai mata mai i ngā kai māoa, i roto i te pouaka whakamātao kai.

Kaupapa

Food, equipment, utensils and packaging materials need to be stored appropriately to keep them safe. Using food after its “Use By” date can result in whānau and manuhiri becoming ill.

Use a “first-in, first-out” policy. Shift old stock to the front and put new stock at the back.

Keep raw kai separate from cooked and ready-to-eat kai in the chiller/fridge.

Kai safety tips

Dry goods

- Don't store products on the floor (this helps with cleaning and prevents them picking up dirt which could be transferred to work surfaces).
- Throw away any food products with damaged packaging.
- Throw away cans that are damaged, bulging or corroded.
- Label all kai products correctly.
- Store opened ingredients in covered, pest-proof containers which can be easily cleaned.
- Keep storage areas clean and free of pests (see sections on *Cleaning and sanitising and Pest control*). Throw kai away if it shows signs of pest infestation e.g. droppings, eggs or webbing*.
- Store kai away from chemicals and never store chemicals in a food container.

* webbing looks like fine cobwebs and can be caused by insects such as weevils.

Stock rotation

- Follow the “first-in, first-out” (FIFO) policy, which means shift old stock to the front and put new stock at the back.
- Throw out kai that has passed its “Use By” date (for an explanation of “Use By” and “Best Before” see the *Definitions* section).
- Treat opened packages like fresh or perishable kai.

Utensils and equipment

- Store utensils and other equipment in a way that keeps them clean and protected from contamination.

Chilled/frozen food

- Store perishable chilled kai in a fridge that keeps kai chilled at (or below) 4°C. Freezers need to be operating so they keep kai frozen solid or at a temperature that the manufacturer recommends. **Use a thermometer to check the temperature of your refrigerator and freezer regularly. You can buy thermometers for fridges/freezers from a hardware store.**
- Keep raw kai separate from cooked and ready-to-eat kai in the chiller/fridge. Here's how:
 - ideally, use separate chillers/fridges for storing cooked, ready-to-eat kai and raw uncooked kai;
 - or, store cooked and ready-to-eat kai covered on different areas (sides) of the chiller from raw, uncooked food;
 - or, store cooked and ready-to-eat kai covered and above raw uncooked food in the chiller/fridge.
- Freezing will not kill all harmful microbes in kai, so only freeze fresh, good quality kai.

If the freezer breaks down and the kai is still frozen solid, move it to another freezer. If perishable kai has thawed so it is now soft to touch it must be defrosted and used – do not refreeze. If the frozen perishable kai has defrosted and has been above 4°C for more than four hours it should be thrown out.



Kai needs to be thoroughly defrosted before cooking unless manufacturer's instructions tell you to cook from frozen.

In a fridge or chiller, defrost kai below ready-to-eat kai.

Ētahi kōrero hihiri

Me āta whakarewa ngā kai hukapapa i mua i te tunutanga pēnā kaore he tohutohu a te kaihanga e kī ana, he pai noa iho ki te tunu i ngā kai e hukapapa tonu ana.

Me waiho ngā kai hukapapa hei whakarewa, ki raro iho i ngā kai māoa.

Kaua rawa e whakahukapapatia anō ngā kai kua whakarewatia kē.

Kaupapa

If kai is frozen or partially frozen it will take longer to cook, so make sure that it is thoroughly thawed first. Otherwise, the outside might be well-cooked but the middle of the kai could be uncooked and contain harmful microbes.

Between the temperatures of 5°C to 60°C (the temperature danger zone) harmful microbes can grow rapidly and cause foodborne illness. Make sure that when you thaw kai it's not in the temperature danger zone for longer than four hours.

Juices from defrosting kai can contaminate other kai and surfaces with microbes, so always defrost kai away from other food and clean surfaces thoroughly afterwards.

Kai safety tips

Thoroughly defrost kai before cooking (unless the manufacturer's instructions tell you to cook from frozen).

- Plan ahead to leave enough time and space to defrost kai in the fridge or chiller.
- Defrost kai in a dish to contain any drips.
- In a fridge, chiller or other suitable area, defrost kai below any ready-to-eat kai.
- If you can't defrost kai in the fridge or chiller, use one of the following methods:
 - thaw kai in the microwave. If you do, use it as soon as it's defrosted;
 - put kai in an airtight container and then place it under cold running water
 - defrost your kai on a bench, but for no longer than four hours.
- Check defrosted kai before cooking to make sure the centre has thawed. If it's not fully defrosted, continue defrosting until there are no ice crystals left.
- To speed up defrosting, divide the product into smaller portions.
- Never re-freeze thawed kai!





Ētahi kōrero hihiri

Me tunu te heihei kia tae ki te 75°C, te wera. Me titi te whakarite pōkākā ki te wāhi mātātoru o te mīti kia āta titiro pēnā kua tae te ine wera ki te 75°C.

Kaupapa

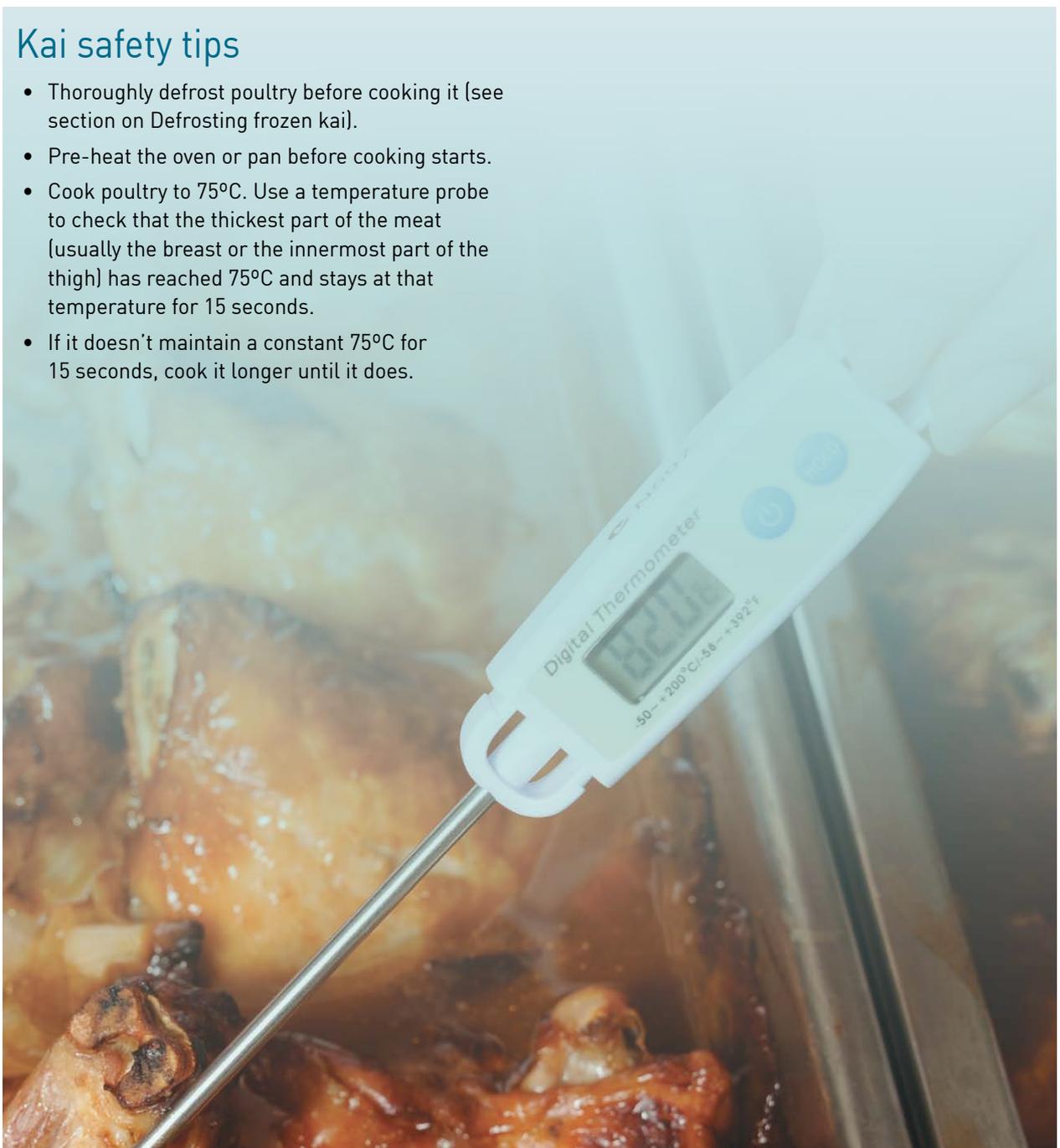
Poultry (including titi and the liver) and dishes containing poultry, need to be cooked thoroughly through to the centre to ensure that harmful microbes are killed.

Thoroughly defrost poultry before cooking.

Cook poultry to 75°C and use a thermometer to check.

Kai safety tips

- Thoroughly defrost poultry before cooking it (see section on Defrosting frozen kai).
- Pre-heat the oven or pan before cooking starts.
- Cook poultry to 75°C. Use a temperature probe to check that the thickest part of the meat (usually the breast or the innermost part of the thigh) has reached 75°C and stays at that temperature for 15 seconds.
- If it doesn't maintain a constant 75°C for 15 seconds, cook it longer until it does.





Stir liquid dishes frequently so they reach an even temperature.

Before cooking seafood, throw away any mussels, pipis, cockles etc that have opened or have damaged shells.

Ētahi kōrero hihiri

Kia tini ngā taima kōrori i ngā kai waiwai kia ōrite ai te wera o te kai.

I mua o te tunutanga i ngā kaimoana, whiua ngā kuku, ngā pipi, ngā tuangi me ēra atu momo kaimoana, pēnā kua huaki, kua pakaru rānei ngā anga.

Kaupapa

Kai needs to be properly cooked because heat kills harmful microbes which are present in many foods. Microbes are too small to be seen by the human eye and you can't physically remove them from kai, but you can kill them.

Kai safety tips

Follow manufacturers' cooking/preparation instructions, if there are any.

Liquid dishes (e.g. soups, sauces, gravies etc):

- Stir them frequently until they reach an even temperature without any cold spots.
- Keep them simmering while waiting to be served.

Whole cuts and whole joints of meat:

- Thoroughly seal the surface of the meat to kill any microbes present.
- Whole cuts and whole joints of meat can be cooked to preference and can be served rare if they're properly seared on the outside.

Shellfish

Prawns will turn from a blue-grey to pink and scallops become milky white and firm when they're cooked, so look for the change in colour and texture.

Before cooking, throw away mussels, pipis, cockles etc that have an open or damaged shell – they might not be safe to eat.

To check whether or not a mussel or clam is cooked, make sure the shell is open and the mussel or clam has shrunk inside the shell. Throw away any shells that have not opened during cooking.

Pulses

Pulses can contain natural toxins that could make people ill unless the toxins are destroyed by soaking and cooking. Follow the instructions on the package on how to prepare dried pulses. Tinned pulses will already have been soaked and cooked.

Processed meats

Processed meat such as rolled joints, tenderised or injected meats, livers, minced meats and meat products (e.g. sausages and burgers) must be thoroughly cooked because microbial contamination can be spread all through the meat.

Meat products should be cooked so they are steaming hot through to the centre with no red or pink meat.

Check that rolled joints are cooked by inserting a skewer into the centre until the juices run out.

Juices will show no pink or red when properly cooked. Use a meat thermometer to be certain.

If kai is not properly cooked:

- cook it for longer;
- look at recipes and change cooking times and/or temperatures;
- divide the food into smaller quantities and cook further or use different equipment (something that will do the job properly).



Ētahi kōrero hihiri

Kōrorihia te kai kia āta wera ai.

Me noho mamaoa te wera o te kai.

Kia tere tonu te whakarato i te kai wera i te wā e wera tonu ana.

Kaupapa

You'll probably want to keep kai hot while it's waiting to be served or if it's on display. But it's important to keep it at a temperature that's hot enough to ensure it stays safe. If you keep it above 60°C you'll prevent the small number of harmful microbes that might have survived cooking (or that have arrived from contamination after cooking) from growing to dangerous numbers (also see *Display and self service of kai* section).

Stir kai so it's hot all the way through.

Keep kai steaming hot.

Serve cooked food hot and as soon as possible.

Kai safety tips

Follow advice in the Reheating prepared kai and leftovers section if you are going to reheat kai. Hot-holding equipment such as bain-marie, hot cabinets and pie warmers are only to keep food hot; they're not designed to reheat food. If you're using a bain-marie, hot cabinet or pie warmer:

- Clean and preheat the unit before putting hot kai into it.
- Don't overload the container.
- Stir kai so it's hot all the way through.
- Keep kai steaming hot.
- Never top up existing dishes of kai with new kai.

Serve cooked food hot and as soon as possible.

- If kai and/or serving utensils somehow get contaminated, replace them. (Also see the *Display and self service of kai* section).





Cool kai quickly to reduce the time it stays within the temperature danger zone.

If in doubt – throw it out!

Ētahi kōrero hihiri

Kia tere tonu te whakamātaotao i te kai kia kore e noho roa i roto i te āhuatanga mōrearea.

Pēnā e āwangawanga ana – whiua ki waho!

Kaupapa

Cool hot kai quickly to minimise the amount of time it's in the temperature danger zone (5°C – 60°C).

This helps prevent the rapid growth of harmful microbes.

Kai safety tips

Cool kai quickly to reduce the time it stays within the temperature danger zone.

Put cooling food in a refrigerator as soon as possible – either when it has reached room temperature or has been cooling for no longer than two hours.

To cool kai quickly:

- spread the kai out in clean, shallow, open trays;
- divide kai into smaller portions, e.g. by slicing pieces of meat;
- place on a rack to improve air circulation around the kai;
- move hot kai to a colder area;
- pour hot liquid into sealed containers and place them in cold water;
- stand pans of hot kai in cold/ice water;
- stir hot liquid (e.g. soups and boil ups) as it's chilling;
- use the cool setting on the oven (the oven must be cold first!).





Ētahi kōrero hihiri

Whakawerawerahia ngā kai i roto i te tōhi/hōpane/oko hainamana/umu ngaru iti. Kaua e whakawerawera kai i roto i te Bains-maire, i te umu whakamahana pae rānei, na te mea kaore e taea te tere whakawera i te kai ki te taumata wera, e tika ana.

Kōrorihia te kai kia kore ai e noho mātao ētahi wāhanga, ā, kia eke ai te wera o te katoa o te kai ki te wera mamaoa.

Kaupapa

Kai needs to be reheated quickly and thoroughly to destroy any harmful microbes.

Use the oven/pan/wok or microwave to reheat kai. Bains-marie and pie warmers should not be used as they can not reheat kai to a safe temperature quickly enough.

Stir or mix kai to make sure there are no cold spots and the food is evenly reheated to steaming hot.

Kai safety tips

Use the oven, pot/pan/wok or microwave to reheat kai. When using a microwave it's important that the food should be allowed to stand for the correct time (follow the manufacturer's instructions).

Don't use bains-marie or pie warmers to reheat kai as they're not designed to heat it quickly enough.

Where possible, stir or mix kai so there are no cold spots and the food is evenly reheated to steaming hot e.g. when reheating a boil up.

Don't re-use left-over self-service kai (i.e. don't use it the next day).

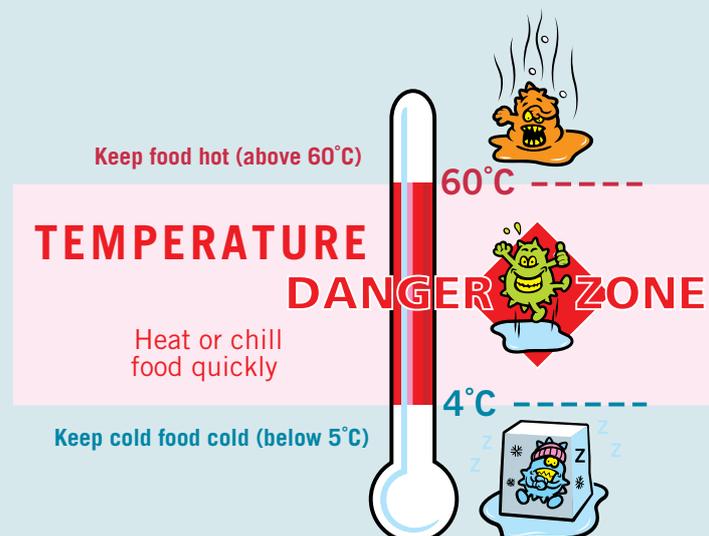
Eat other leftovers within two days or throw them out.

If you're taking food home from an event, keep it cold by putting it into a chilly bin with ice packs.

Avoid direct contact between kai and plastic film when reheating the kai. Clean white absorbent kitchen paper may be a preferable alternative to prevent splatter.

Use plastic containers designed for microwave use. Other containers might seem okay but may not have been designed to be exposed to high temperatures (e.g. some ice cream containers). Glass containers are a good idea when heating fatty foods.

If in doubt – throw it out!





Keep chilled ready-to-eat food covered in the fridge until it's time to serve them.

Provide clean serving utensils for each food item or dish and ensure handles do not touch the kai.

Never top-up or mix kai on display with fresh batches.

Left-over self-service kai should not be re-used.

Ētahi kōrero hihiri

Waiho taupoki ngā kai mātao i roto i te pouaka whakamātao kai, kia reri rānō ki te whakarato.

Me waiho ngā taputapu whakarato mā, mō ia ipu kai, ka mutu kua e tukua kia pā ngā kakau o ngā taputapu whakarato, ki te kai.

Kaua e ranu i ngā kai hou ki ngā kai whakaari.

Kaua e whakaarihia anō ngā toenga kai.

Kaupapa

Kai always looks great on display and when it's spread out for self-service, but if it's not done properly there can be problems. Displaying and serving kai at the right temperature is important, and you need to make sure the kai is outside the temperature danger zone (5°C – 60°C). This reduces the chances of harmful microbes growing. Self-service displays present a high risk because many people have access to the kai, so take care how you arrange kai for self-service, so that people don't have to reach across, possibly contaminating it.

Kai safety tips

If you're going to reheat food, follow the advice in Reheating Prepared Food.

When keeping prepared food hot, follow the advice in *Keeping Prepared Food Hot*.

Keep chilled, ready-to-eat foods covered in the fridge until it's time to serve them – especially seafoods, meat and vegetable salads, rice salads, desserts, and cakes containing cream or imitation cream.

To prevent contamination, cover all kai with cling film, tin foil or clean cloths at all times right up until it's served. Contamination after cooking can occur when cooked kai comes into contact with dirty hands, serving utensils, cutting boards, bench surfaces or the environment e.g. flies, hair, dirt etc.

Provide clean serving utensils for each food item or dish and ensure the handles don't touch the kai. Replace serving spoons whenever they've been misused or might have become contaminated.

Refresh kai displays with completely new batches of kai. Never top-up or mix kai on display with fresh batches.

Left-over kai should not be re-used (e.g. don't use the kai the next day).

Minimise the length of time that kai sits at room temperature. If hot kai is in the temperature danger zone for longer than two hours, throw it away. Throw chilled kai away if it's in the temperature danger zone for longer than four hours. The warmer the temperature, the shorter the time the chilled kai will remain safe.

Arrange kai on display in such a way that people don't have to stretch across other kai dishes to reach what they want.

Throw away any kai that's been contaminated e.g. by someone coughing or sneezing over it.

Put someone in charge of the self-service display to make sure that it runs smoothly.

If in doubt – throw it out!!!!



Ētahi kōrero hihiri

Whaia ngā tohutohu, o runga i te tohu piri, mo te whakaputu kai. Raua ngā kai ka tere kino, ki roto i te pouaka whakamātao kai.

Me taupoki, ka waiho motuhake ngā whāranu me ngā kai mata mai i ngā kai māoa, i roto i te pouaka whakamātao kai.

Kaupapa

Sandwiches and filled rolls can easily become contaminated by hands or equipment when you're making them. Also, if you leave them at room temperature, harmful microbes can grow on the fillings, especially those that are readily perishable.

Follow storage instructions on label. Store perishable ingredients in the fridge.

Keep raw ingredients covered and separate from cooked or ready-to-eat foods in the fridge.

Kai safety tips

Storing sandwich filling ingredients

- Store readily perishable ingredients (e.g. cooked meats and fish, bean sprouts, cooked eggs, cheese etc) covered and in the fridge.
- Follow the manufacturer's instructions on the label for how to store the kai once packaging has been opened.
- Keep sandwich fillings separate from raw ingredients (e.g. uncooked meat, bacon, unwashed vegetables).
- Label all fillings prepared in bulk with the date of preparation and throw them out if they're not used within two days. Don't top them up with the next batch made.

Making sandwiches/rolls

- Keep working surfaces and equipment clean and sanitised (see Cleaning and sanitising).

- Wash your hands and wear appropriate clothing (see Hand hygiene and Personal hygiene and sickness).
- Wash salad ingredients (e.g. lettuce, tomatoes, parsley etc) in clean water.
- Return unused readily perishable ingredients to the fridge as soon as possible (within two hours).

Display

- Follow the advice in the Display/Self service section.
- Keep sandwiches covered and chilled in the fridge until it's time to serve them.
- Throw out sandwiches that have been stored in the temperature danger zone (5°C to 60°C) for longer than four hours.
- Provide clean tongs for service and have enough available to change them if any fall on the floor.





Respect rāhui if it has been placed on a kaimoana collection area.

Follow the advice on warning signage advising not to gather kaimoana from an area.

When collecting kaimoana avoid areas that can become contaminated.

Ētahi kōrero hihiri

Me whai whakaaro mo te rāhui kua ūtaina ki runga i ngā wāhi kohi kaimoana.

Me aro ki ngā kōrero whakatūpatō o te pou rāhui, kia kaua e kohi kaimoana mai tētahi wāhi.

Ki te kohi kaimoana, kaua e haere ki ngā wāhi ākuni a tōna wā, ka kino.

Kaupapa

It is important to gather kaimoana from a safe place. Not only can kaimoana live in contaminated water, they can also pick up and store whatever harmful microbes, viruses, biotoxins or pollution that might be present. The most effective way to ensure whānau, hapū and iwi don't get sick from eating recreational gathered kaimoana, is to collect them from areas where the seawater is clean, and not contaminated in any way. Proper handling, storage and cooking can also reduce the risk of illness from harmful microbes.

Kai safety tips

Respect rāhui if one has been placed on an area where kaimoana is gathered.

Kaumātua, whānau, hapū and iwi and local experts/kaitiaki will be able to provide advice on appropriate areas to collect kaimoana.

Follow the advice on any warning signs advising not to gather kaimoana from an area.

When collecting kaimoana, avoid the following areas to lower the risk of illness:

- where pipes or culverts run down to the beach;
- where sewage or storm water is discharged;
- if farm animals are grazing nearby;
- anywhere showing signs of industrial pollution;
- coastal areas with houses nearby;
- near wharves or marinas where boats might have discharged sewage or chemicals (such as anti-fouling paint or diesel);
- near rivers or estuaries after heavy rain. Wait until the water has run clear for several days. Storms might flush sewage overflow or farm run-off downstream.

Store kaimoana carefully to help reduce the risk of illness from harmful microbes. Remember:

- Keep kaimoana alive and cool to keep them fresh.
- Use kaimoana within two days of harvest.
- Don't eat kaimoana that have died during storage. Living mussels or scallops should respond by shutting their shells tightly when you tap them. Dead shellfish won't respond and should be thrown away (in contrast, live oysters will keep their shells closed).
- Don't eat kaimoana with broken shells.
- Place kaimoana in the shade during harvest to keep them moist and cool.
- Refrigerate kaimoana as soon as possible after collecting them (within four hours) and store on ice in a chilly bin if being transported (be careful as freezing will kill them).
- Don't store live kaimoana in an airtight bag or container in the fridge.

- **For more information: Contact your Local Council – Environmental Health Officer (EHO) or Public Health Service – Health Protection Officer (HPO) for advice.**



Ētahi kōrero hihiri

Mē pātai ki ngā kaumātua mo ngā wāhi kōhi, haumarū.

Horoia mārirehia ngā huawhenua ma te wai pai i te tuatahi.

Kaupapa

It's important to gather puha or watercress from clean areas to ensure whānau don't get ill from eating kai that could contain high levels of harmful microbes, chemicals or heavy metals.

Seek advice from Kaumātua on safe collection areas.

Wash all plants thoroughly before using them with drinking quality water.

Kai safety tips

Seek advice from Kaumātua and local people on safe collection areas.

Avoid gathering from areas:

- where sewage or storm water is discharged;
- near houses on septic tanks;
- near rivers or streams after heavy rain until the water has run clear for several days. Storms may flush sewage overflow or farm run-off downstream
- near grazing farm animals;
- showing signs of past or current industrial pollution (your local Regional Council can also provide advice on this);
- beside the road – especially near high traffic density areas – as plants found near roads could contain high levels of heavy metals from car exhausts.

Plants growing in geothermal areas might have high levels of arsenic which can't be destroyed by cooking. Check with Kaumātua or your local Health Protection Officer (see *Contacts* section) for advice on safe gathering areas.

- if you've collected plants (including watercress, pūha, pikopiko) wash them thoroughly with drinking-quality water before using them (see *Drinking water* section).

Cook all plants you collect from streams, rivers or creeks thoroughly in boiling water to kill any microbes present.

- if you're going to use plants raw (e.g. in salads or garnishes) make sure to get them from a reputable source (see *Definitions* section). Plants like watercress and pūha should be grown in a controlled environment (e.g. hydroponic cultivation) to prevent contamination of the produce (see *Purchasing and receiving kai* section).





Heat hāngi stones until they're white hot.

Keep watching the hāngi while the kai is cooking to check for escaping steam.

Check that the kai is cooked. If undercooked reseal the hāngi immediately and continue to cook hāngi kai as required.

Ētahi kōrero hihiri

Whakawerahia ngā kōhatu mo te hāngi kia māwera.

Me tiro tiro te hāngi, i te wā e tunu ana te kai, koi tūpono ka puta te mamaoa.

Tirohia pēnā kua māoa ngā kai. Pēnā kaore anō kia māoa ngā kai, katia anō te hāngi ka tunu kia ata māoa ngā kai.

Kaupapa

The mana of your Marae is always at stake when you manaaki whānau, hapū and iwi at the Marae. It is important, therefore, that ample time is taken to prepare for such an event. Some steps in the hāngi cooking process need special care and attention to keep hāngi kai safe and free from harmful microbes. Marae tikanga processes will be determined by kaumātua, Marae hāngi cooks and kitchen staff.

Kai safety tips

Dig your hāngi hole away from septic tank outflows, drains and ground water, property boundaries, buildings or structures and dry foliage. (Refer to your local council for specific local requirements).

Line baskets with cabbage leaves or tinfoil before placing them into the hāngi hole. Tinfoil is a good way of containing steam. (Marae tikanga will determine process).

Heat the hāngi stones until they're white hot (or iron bars until they're red hot). Use untreated wood on the fire.

Place the hāngi baskets containing meat and poultry (or individual prepared packs) on the hot rocks or iron bars first, followed by those containing vegetables.

Large white material covers and sacks soaked in water provide the steam needed to cook the kai. Use water sparingly as too much can cool down the rocks and iron bars too quickly, which may not cook hāngi kai properly.

Keep watching the hāngi pit while the kai is cooking to check for escaping steam. Cover immediately if steam appears (escaping steam = escaping heat = undercooked kai).

When advised, clear dirt well away from the hāngi pit, then remove the sacks and white covers ensuring dirt doesn't fall into the hāngi baskets.

Check kai is cooked properly (see sections on Cooking poultry and Cooking (other than poultry)). If not, reseal the hāngi hole immediately and continue to cook. If the kai is still not sufficiently cooked when the hāngi hole is opened again, cook it further by other means, e.g. Marae ovens, gas burners, etc.

For more information: refer to the New Zealand Food Safety publication: *Food Safety Practices in Preparing and Cooking a Hāngi* (available on our website).

Waiora

Te puna o te ora

The spring of life (cleansing rites)

Ihirangi

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Ētahi kōrero hihiri

Me noho mahea te tuanui o te whare i te māheuheu kia kore ai ngā rau, ngā para me ngā kongakonga e taka ki runga i te wāhi hopu wai o te tuanui.

Atā whakamaua ngā taika wai kia kore ai e uru atu ngā manu me ētahi atu mea ki roto.

Ki te kore koe i te tino mōhio he pehea te painga me te marutau o tō mātāpuna wai inu, me rau atu te rahinga tika o te Janola, i tetahi atu whatakōmā ranei, hei whakama pai i te wai (tahuri ki te pānui a te Manatū Hauora mo Ngā Mātāpuna Wai o te Kāinga.

Kaupapa

Contaminated water can make people ill with diarrhoea and vomiting. It can be particularly dangerous for vulnerable people such as infants, the frail elderly or people with damaged immune systems.

Roof water can be corrosive or contaminated from ash, dust, harmful microbes, agricultural spraying, bird or possum droppings.

Keep roof areas clear of overhanging vegetation so leaves and debris can't fall on the catchment roof.

Ensure tanks are secure to prevent animals, birds and other matter from getting into the tanks.

If you are unsure about the quality and safety of your drinking water supply you will need to disinfect the water using the correct dose of bleach.

River or stream water and shallow bore water can contain harmful microbes or chemicals, or be discoloured and unpleasant to taste.

Bore water can be hard and corrosive. If your well is not protected, microbes and chemicals can find their way into it and contaminate the water.

Kai safety tips

Roof water

- Keep roof areas clear of overhanging vegetation so leaves and debris can't fall on the catchment. Overhanging branches also give rodents, cats and possums access to the roof and allow birds to roost above it.
- Use safe roof paint.
- Use plastic pipes and gutters.
- Install a gutter mesh to prevent leaves and debris from blocking gutters.
- Include a fine mesh (e.g. debris screen) and a first foul flush diverter (diverts first flush of contaminated water when it rains).

Water Storage Tanks

- Ensure tanks are secure to prevent animals, birds and other matter from getting in. Attach insect-proof screen at the ends of the tank overflow outlets to keep mosquitoes and pests out. Inspect tanks annually and clean them if necessary.

Bore water

- Install a secure well cap, and seal between the casing and any hoses or cables going down the well.

- Ensure the well casing is elevated at least half a metre above the ground surface. Seal between the well casing and the surrounding ground with a concrete apron.
- Install a backflow preventer if you use a hose feeding a stock trough, to prevent contaminants siphoning back into the home supply.

Disinfect unsafe water

If you are unsure about the quality and safety of your drinking water supply, you can disinfect the water by:

- using an approved filter or purifier;
- boiling the water for one minute. Boiling is the simplest and most effective method to reliably kill *Cryptosporidium* parasites;
- adding chlorine – half a teaspoon of household bleach added to 10 litres of water kills most harmful microbes. However, some parasites will not be killed by chlorine;
- installing a water treatment system with filtration and ultraviolet disinfection.

If you are concerned about the quality of your water supply, contact a Health Protection Officer at your local public health service or an Environmental Health Officer at your local council for advice.



Clean as you go between tasks.

Follow a cleaning schedule.

Store cleaning materials away from food in a separate area.

Never store a chemical in a food container.

Ētahi kōrero hihiri

Me horoi haere ngā wāhi kia mā, i waenga i ngā mahi.

Whaia tētahi rārangi mo te mahi horoi whakamā.

Me waiho ngā taputapu horoi ki tētahi wāhi motuhake mai i ngā kai.

Kaua rawa e raua he matū ki roto i te ipu mo te kai.

Kaupapa

Cleaning removes dirt and grease and sanitising kills harmful microbes. Unclean wharekai and equipment will allow microbes to grow and if they contaminate kai, they can cause illness. Dirty wharekai can attract pests such as mice, rats and cockroaches that can carry and spread disease.

Kai safety tips

General guidelines for cleaning:

- Clean as you go between tasks.
- Start at the back of the wharekai and work towards the front.
- Start high and work your way down.
- Air-dry equipment wherever possible or use clean, dry tea towels.
- Launder all tea towels after use.
- Follow a cleaning schedule (see Designing a cleaning schedule).
- Clean and sanitise food thermometers before each use and between probing different items. This can be done by using sterile wipes or washing the thermometer in hot soapy water then sanitising. Dry the probe with a paper towel or allow to air dry.

Procedure for washing items that can't be put in the dishwasher:

- remove excess waste;
- wash with hot water and correct amount of detergent;
- rinse with clean, hot water;
- sanitise* with a food-safe sanitiser;
- final rinse* (see sanitiser instructions as required);
- ideally, allow them to air dry or dry them with a single-use drying cloth (that is, throw it away when you've used it);

* Only required where equipment/surface comes into contact with food.

If using a dishwasher, a commercial model is recommended. Use chemicals from a reputable supplier, and have the dishwasher serviced regularly. When it's operating correctly, items in the dishwasher will be too hot to handle immediately after the rinse cycle.

When using cloths:

- Use single-use cloths whenever possible and put them in the bin after each task.
- Use a new or freshly-cleaned cloth to wipe surfaces that come into contact with ready-to-eat kai.
- Thoroughly wash, sanitise and dry reusable cloths after use.

Storage:

- Store cleaning materials away from food in a separate area.
- Ensure chemicals are clearly labelled.
- NEVER store a chemical in a food container.
- Train your wharekai workers how to safely use chemicals.
- Keep cleaning equipment in good repair and don't let it be used in other areas.

A sanitiser is a detergent containing a chemical designed to destroy microbes during the cleaning process.

It is not plain dishwashing liquid. If you're unsure about it, ask a reputable supplier, or your local Environmental Health Officer or Public Health Unit.



Ētahi kōrero hihiri

Kia auau te arotake i tō rārangi horoi whakamā ka titiro pēna kei te mahia tika ngā mahi.

Kaupapa

It's important that all surfaces and equipment you use for kai (e.g. benches, chopping boards, tongs, pots, cutlery etc) and the equipment you use for cleaning (e.g. cleaning cloths) are clean and sanitised. Cleaning removes dirt and grease, while sanitising kills harmful microbes. A cleaning schedule will ensure that everyone knows what needs to be cleaned and when.

Review your schedule regularly and check that all cleaning is being done properly.

Kai safety tips

Make a list of everything in the wharekai that needs cleaning. Include the following:

High Priority cleaning – items that come into contact with kai:

- work surfaces and chopping boards;
- utensils e.g. knives;
- fridges;
- equipment with moving parts e.g. food mixers, slicers and processors;
- sinks and soap dispensers;
- re-useable cloths and work cloths.

Frequently touched items:

- rubbish bins, broom and mop handles;
- door handles, taps, switches and controls;
- can openers, and even telephones.

Other important items:

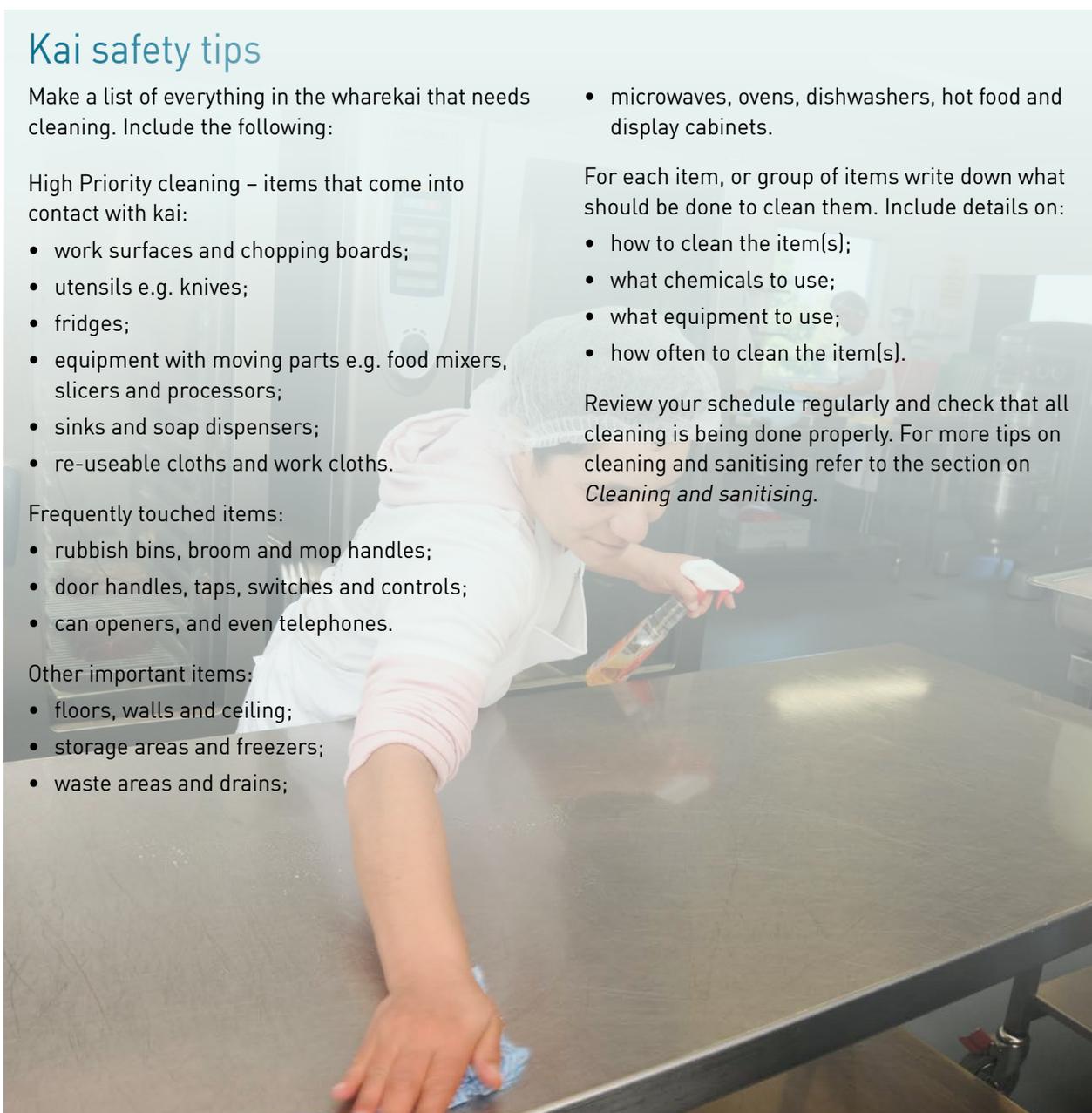
- floors, walls and ceiling;
- storage areas and freezers;
- waste areas and drains;

- microwaves, ovens, dishwashers, hot food and display cabinets.

For each item, or group of items write down what should be done to clean them. Include details on:

- how to clean the item(s);
- what chemicals to use;
- what equipment to use;
- how often to clean the item(s).

Review your schedule regularly and check that all cleaning is being done properly. For more tips on cleaning and sanitising refer to the section on *Cleaning and sanitising*.





Premises, equipment and services need to be in good working condition to enable the safe preparation of kai.



Ētahi kōrero hihiri

Me noho pai ngā whare mahi, me ngā taputapu kia pai hoki ngā mahi rātonga kia noho haumaruru ai te whakataka o te kai.

Kaupapa

The quality of your working environment is important if you're going to prepare kai properly and safely. The wharekai, equipment and services (e.g. hand wash basins, lighting etc) all need to be in good working condition.

If equipment isn't working properly it might affect kai safety e.g. if the fridge isn't keeping food cold enough, harmful microbes can grow. Surfaces that are worn or damaged are harder to clean and sanitise which can result in a build-up of harmful microbes. Even things like paint flakes could fall into the kai.

Kai safety tips

Maintenance checks

Make sure equipment such as refrigerators and dishwashers are serviced properly and regularly; the manufacturer's instructions will say what should be done and when.

Regularly check that the wharekai and the equipment are in good working condition. If something needs repair, get it done sooner rather than later.

Ensure refrigerators are operating so that they keep kai chilled at 4°C or less. Also check that freezers keep kai frozen at -18°C or lower. Use a thermometer to measure the temperature of the refrigerator daily and the freezer once a week when the wharekai is in use. If the refrigerator/freezer is the sort that requires defrosting, do this regularly. (You could include this in your cleaning schedule (see section on *Cleaning and sanitising*)).

Wharekai preparation/storage areas etc

Make sure that:

- all internal surfaces are smooth, that they won't soak up any liquids, are easy to clean, and are in a good state of repair;
- the walls, floors, and ceiling are free from potential pest entry points;
- the lighting is bright enough for you to see that you're cleaning properly;
- ventilation is suitable and sufficient. If you've got mechanical ventilation systems with filters and other parts that need cleaning or replacing, they must be readily accessible;
- an adequate number of hand wash basins are provided in the right places and that they're reserved for washing hands only (i.e. not used for cleaning dishes). Hand wash basins must have hot and cold running water, soap, a nailbrush and hygienic drying (see *Hand hygiene* section). There should be hand wash basins next to the toilet area and in the kai preparation/handling area.



Ētahi kōrero hihiri

Kia maha ngā paepae rāpihi mo ngā wāhi whakataka kai o te wharekai, ka whakapiako i ngā paepae rāpihi ia rā.

Kaupapa

Rubbish and recyclable material that is not stored appropriately can prevent effective cleaning and encourage pests that carry harmful microbes. Rubbish and waste kai can contaminate kai and kai working areas.

Have an adequate number of bins in the kai preparation areas of the wharekai for waste and empty these at least daily.

Kai safety tips

Waste kai is:

- left-over kai;
- kai that may become contaminated;
- kai which is past its "Use by" date;
- kai that has been in the temperature danger zone for too long (i.e. greater than two hours for hot prepared kai and greater than four hours for chilled kai).

There needs to be an adequate number of bins in the kai preparation areas of the wharekai and these need to be emptied when full and at least daily. Bins with foot-operated lids will help to prevent cross-contamination of surfaces by food handlers.

External rubbish bins must be pest-proof and easily cleanable. Locate the bins away from entry and exit points to the wharekai.

Rubbish bins should be part of the cleaning schedule to ensure they are cleaned on a regular basis (see section on *Designing a Cleaning schedule*).

Rubbish/recycling needs to be collected on a regular basis by a reputable contractor.

Kai waste used for pig feed

If you supply kai waste that has come into contact with cooked or uncooked meat, poultry or seafood to someone else for feeding to pigs, the law says you must be satisfied they will heat the food waste to 100°C for one hour before feeding it to pigs. This is to prevent the risk of spreading important exotic epidemic diseases such as foot and mouth disease and swine fevers. So before you give kai waste for use as pig feed, ask for a written, signed statement from the person collecting the waste that it will be treated before use, including their permission to forward their name and contact details on to MPI (foodwaste@mpi.govt.nz). That way we can stay in touch with all parties involved in the supply of food waste. Read more about supplying food waste for pigs at: www.biosecurity.govt.nz/foodwaste





Keep rubbish bins covered and remove rubbish.

Follow the cleaning schedule – clear and clean as you go.

Throw out any kai that looks like it has been damaged by pests.

Ētahi kōrero hihiri

Me noho taupoki ngā paepae rāpihi ka whakawātea i ngā rāpihi.

Whāia te rārangi mo te horoi whakamā – whakawātea ka mahi horohoro haere.

Whiua ngā kai pēnā kua kino i te kīrearea.

Kaupapa

Pests such as mice, rats, birds, cockroaches and flies carry harmful microbes. Faeces and urine from pests such as mice and rats can also contaminate kai and cause illness. Pests can damage stock too, so it's important not to attract them to the wharekai and to do something to stop them entering the premises.

Kai safety tips

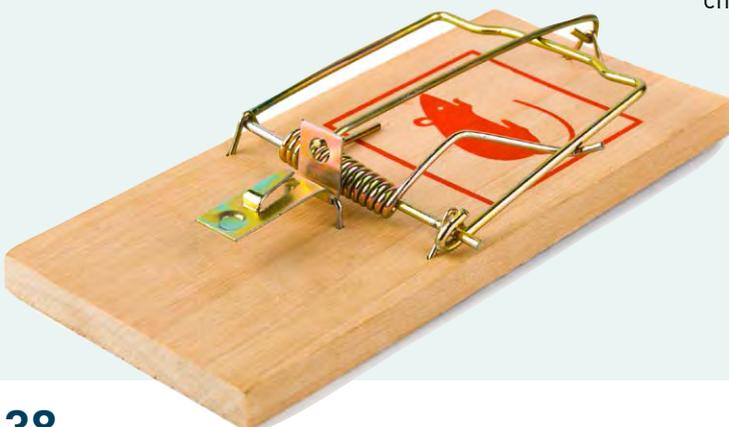
Keep pests out:

- Keep rubbish bins covered and remove rubbish regularly (see section on *Waste disposal*).
- follow the cleaning schedule, and clear up and clean as you go (see sections on *Cleaning and sanitising* and *Designing a cleaning schedule*).
- Check the wharekai regularly to make sure there are no gaps or holes that could allow pests to get in (e.g. under doors, around pipes). If you find any gaps or holes seal them up or get them repaired.
- Check all incoming goods for pest activity e.g. webbing, droppings or eggs. If you find any evidence, throw the goods away (see section on *Storage*)
- Store opened ingredients in covered, easily-cleaned containers that are pest-proof (see section on *Storage*).

Checking for pest activity

Check the wharekai at least weekly (or more often if necessary) for pest activity. Ensure that traps and bait stations etc are included as part of the regular checks and if pest activity is found do the following:

- Throw out any kai that looks like it has been damaged by pests.
- Clean and sanitise the affected areas especially where kai is prepared or handled.
- Eliminate the pests and ensure the access routes are removed:
 - if you find a severe infestation, or an infestation of cockroaches, call a pest control company;
 - if insecticides or chemical sprays are used, take care to remove all food from the area before the treatment starts and to clean food contact surfaces (e.g. benches) following treatment to remove all traces of the chemical.





On a Marae, ngā ringawera need to be aware of the rules across a range of areas including food safety. Having a food safety policy in place clearly sets out what's expected. Below is an example you can follow.

“Mā te tika o muri, ka tika a mua - It is only through the efforts of those who work out the back, will the front flourish”.

Draft food safety policy

Te..... Marae Food Safety Policy

Mihi

E ngā iwi, e ngā reo, e ngā mana, e ngā mata waka, tēnā koutou, tenā koutou, tēnā koutou katoa.

Statement:

Te Marae has adopted a food safety policy utilising *Te Kai Manawa Ora – Marae Food Safety Guide* in the wharekai. This food safety guide highlights the importance of implementing food safety messages to ensure kai is safe, when being served to whānau, hapū and iwi.

Ngā Tikanga – Purpose

The purpose of the food safety policy is to enable ngā ringawera in the wharekai to:

- be fully informed on up to date food safety information that is scientifically based and culturally appropriate;
- raise the level of awareness concerning the dangers of foodborne illness;
- improve food safety practices to maintain food safety hygiene, gathering, transporting, storing, processing, cooking and the distribution of kai for/at hui;
- take into account that when catering for whānau, hapū and iwi – the mana of the Marae is at stake.

Te Kai Whakahaere o te wharekai must ensure that ngā ringawera read and familiarise themselves with the *Te Kai Manawa Ora – Marae Food Safety Guide* as soon as possible.

Ngā ringawera must ensure they adopt good food safety and food hygiene practices while working in the wharekai at all times during a hui.

Any queries please contact Te Kai Whakahaere o te wharekai – Marae Catering Manager.

A copy of Te Kai Manawa Ora is available from

Note: This policy must also be implemented and adhered to when the Marae is hired out.

Other key points to consider

- Key Marae ngā ringawera are encouraged to undertake food safety training.
- Whānau, hapū and iwi who use the Marae are encouraged to utilise *Te Kai Manawa Ora – Marae Food Safety Guide*.
- Whānau, hapū and iwi who use the Marae will adopt good food safety, food hygiene, healthy food and drinking water practices.
- Whānau, hapū and iwi will promote the Marae food safety policy by encouraging others to be aware of the dangers of foodborne illness by organising food safety presentations on the Marae.
- The Marae will undertake to provide safe and healthy food choices in the wharekai when the Marae is in use.
- Food safety resources will be used to highlight safe food practices.
- Marae Committee minutes will provide food safety information for whānau, hapū and iwi.



A thermometer will let you know what temperature kai is and help you keep kai out of the temperature danger zone. It needs to be cleaned and sanitised properly so it does not transfer harmful microbes onto the kai and tested to make sure it is working correctly.

Kai safety tips

Read the instructions on how to use the thermometer. Clean and sanitise the thermometer before each use and in-between probing different kai. (see section on *Cleaning and sanitising*).

The temperature of refrigerated kai can be checked by using a probe thermometer to measure the inside temperature of a container of water (put some water in a glass and leave it in the chiller), a cube of jelly or food which is in the chiller.

When checking hot food and cooking temperatures probe the thermometer into the thickest part of the meat dish.

When cooking batches of food, probe a sample of items rather than every one. Probe items from different parts of the oven to check that heat is being distributed evenly and that all kai has been cooked properly.

Check its accuracy every three months so you know it's working correctly (i.e. providing accurate readings) or whenever you might suspect the thermometer is not working properly. This is done by doing an ice point check if the thermometer is used for checking cold foods and equipment, or a boiling point check if it's used to check hot foods and equipment.



Here's how...

Ice point check

- Half fill a glass with ice scraped from inside your freezer.
- Add a small amount of cold water (until it is visible at the bottom of the glass).
- Put the thermometer into the mixture and leave it until the temperature display is steady, but don't let it touch the sides or bottom of the glass.
- The readings in iced water should be between -1°C to $+1^{\circ}\text{C}$; if they're outside this range replace the unit or return it to the supplier to be fixed.

Boiling point check

- Boil unsalted water in a pot.
- Once boiling, insert thermometer and leave it until the temperature display is steady.
- Again, don't let the thermometer touch the sides or bottom of the pot.
- The readings in boiling water should be between 99°C and 101°C , if outside this range replace the unit or return it to the supplier to be fixed.



Microbes describe a group of organisms including bacteria, parasites and viruses. Some are harmless, while others can cause illness in people.

Kai safety tips

Bacteria are tiny living organisms. Some species of bacteria can make people ill when they are present in high numbers and some can make people ill even if they are only present in small numbers. Our kai is often an ideal place for bacteria to grow and with the right conditions they can multiply very quickly; their numbers can double every 20 minutes. So contamination with even a small number of bacteria cells can make food unsafe in a short time.

Parasites are plants or animals that live on or in another plant or animal, while making no useful contribution to that host. Some parasites cause foodborne illnesses when they contaminate food.

Viruses are non-living particles that invade healthy cells in order to reproduce. They are usually spread by infected people who do not wash and dry their hands properly before handling foods, or from eating shellfish growing in water contaminated by human sewage.

Anyone who suspects they have become ill from a foodborne illness should see a doctor.

Common Foodborne Illness Bacteria

Ngā moroiti e pātahi ana ki te kai

When food handlers suffer from a foodborne illness it is important to follow food safety practices to prevent food poisoning such as staying out of the kitchen while they have symptoms of vomiting or diarrhoea and not returning until they have stopped having them for about 48 hours. The following are examples of common food poisoning bacteria and how they affect people:

Campylobacter

Incubation period: Usually 2 to 5 days, can be 1-10 days

Symptoms: Muscle pain, headache and fever, followed by bloody diarrhoea, abdominal pain and nausea.

Salmonella

Incubation period: 12 hours to 3 days

Symptoms: Diarrhoea, abdominal cramps, vomiting, nausea and fever (lasting 1 to 7 days).

Staphylococcus aureus

Incubation period: 30 mins to 7 hours

Symptoms: Usually nausea, vomiting and abdominal cramps maybe followed by diarrhoea (lasting 1 to 2 days).

Bacillus cereus (Vomiting type)

Incubation period: 1 to 6 hours

Symptoms: Nausea and vomiting, sometimes followed by diarrhoea (lasting less than 1 day).

Bacillus cereus (Diarrhoea type)

Incubation period: 10 to 12 hours

Symptoms: Abdominal cramps, watery diarrhoea, and sometimes nausea (lasting less than 1 day).

Clostridium perfringens

Incubation period: 8 to 16 hours

Symptoms: Watery diarrhoea with severe abdominal cramps (lasting 24 hours or less).

*Refer to page 9 for further information.



Te Whare tupuna Mahinarangi – Turangawaewae Marae

Toiora

Hauora tū pakari

Stand strong for health

Toiora

Ihirangi

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Making sure that safe food is served at Marae is an important part of manaakitanga shown to manuhiri and tangata whenua. Likewise, providing healthy kai is a wonderful way of showing manaaki to our manuhiri and whānau where we can really look after them by looking after their health.

Many Marae recognise how important it is to do their part in looking after the health of their people so have committed to providing healthy kai. Believe it or not, our kai can be healthy as well as affordable and still taste good! And, in most cases, we can still serve those tried and true Marae favourites, but with a few adjustments to the recipes to make them healthier.

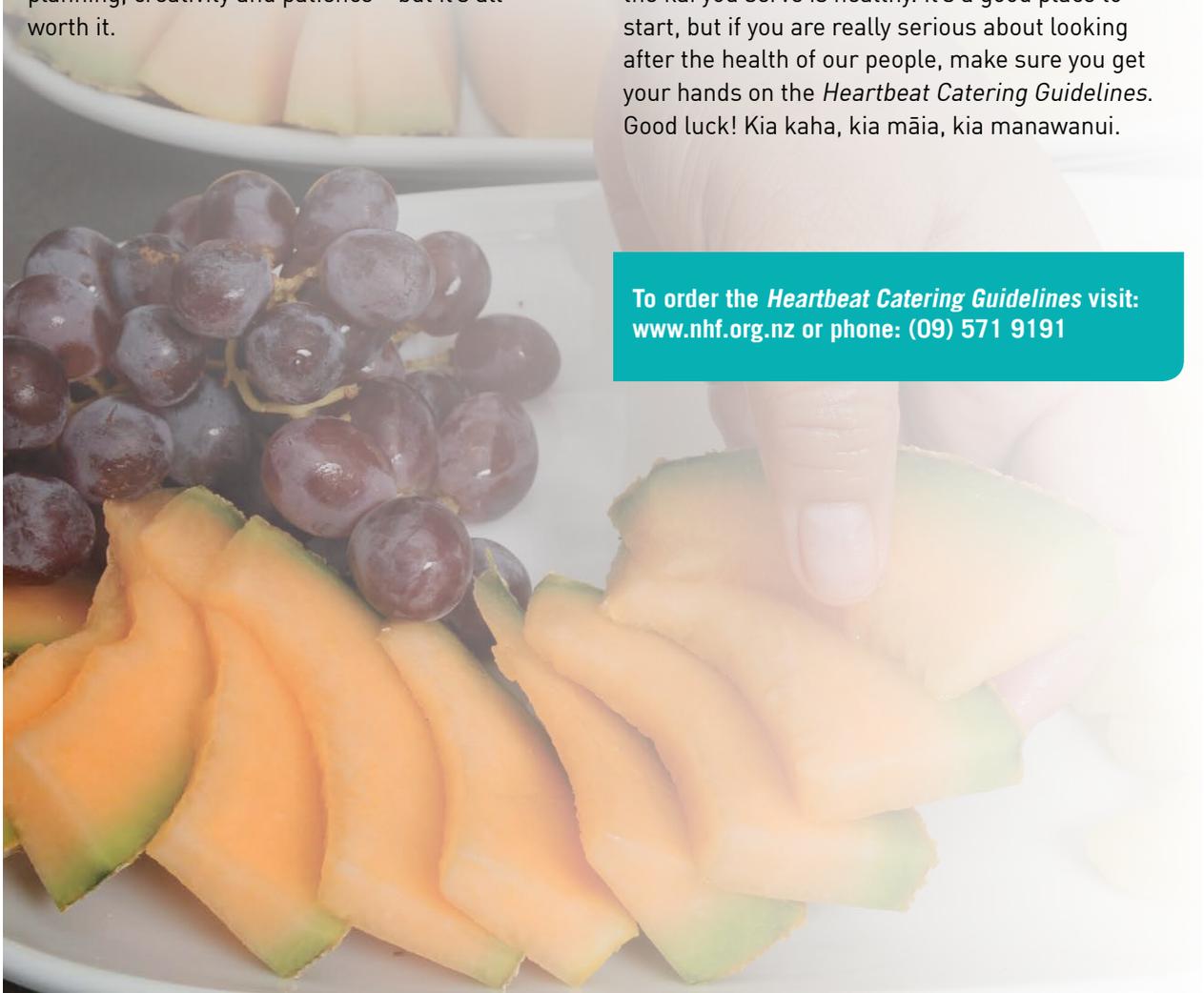
We don't want to scare off the whānau with sudden dramatic changes to their kai. It's best to start with small and easy changes and introduce more as we go along. It will take quite a bit of planning, creativity and patience – but it's all worth it.

The food and nutrition guidelines for adults, shown on the following page, clearly outline what we should be aiming for if we are to eat healthy. Making sure our menu is in line with these guidelines will ensure we are providing healthy kai at our Marae.

The Heart Foundation has produced a series of booklets that will be a great help to Marae taking up the challenge to provide healthy kai. These booklets – *Heartbeat Catering Guidelines for Adults, Adolescents and Older People*, offer great tools and lots of practical ideas for how to incorporate the food and nutrition guidelines into your menu. See below for how to order copies of the booklets.

A number of ideas for healthy menu changes from the Heartbeat Catering Guidelines are included in this sections. These will give you a taste of the types of things you can do to ensure the kai you serve is healthy. It's a good place to start, but if you are really serious about looking after the health of our people, make sure you get your hands on the *Heartbeat Catering Guidelines*. Good luck! Kia kaha, kia māia, kia manawanui.

To order the *Heartbeat Catering Guidelines* visit:
www.nhf.org.nz or phone: (09) 571 9191





Kai tips

Eat a variety of foods each day, including at least:

- 3 servings of vegetables and 2 servings of fruit each day
- 6 servings of bread and cereals each day, including some wholegrain
- 2 servings of milk and milk products each day, preferably low fat
- 1 serving of lean meat, chicken, seafood, eggs, cooked dried beans, peas or lentils each day

Eat foods low in fat, salt and sugar.

Keep yourself in shape with regular exercise and healthy eating.

Have plenty of water and other drinks every day.

If you drink alcohol, drink in moderation.

Serving size examples

- **Vegetables and Fruit**
1 medium potato, kumara or similar sized root vegetable, ½ cup cooked vegetables, ½ cup salad, 1 tomato, 1 apple, pear, banana or orange, 2 small apricots or plums, ½ cup stewed fruit, 1 cup of fruit or tomato juice.
- **Bread and Cereals**
1 roll, 1 muffin, 1 medium slice of bread, 1 cup cornflakes, ½ cup muesli, ½ cup cooked cereal, 1 cup cooked pasta, rice, tapioca, 2 plain sweet biscuits.
- **Milk and Milk Products**
1 glass milk, 1 pottle yoghurt (150g), 2 slices cheese, 2 scoops ice cream.
- **Lean meat, chicken seafood, eggs, cooked dried beans, peas or lentils** 2 slices cooked meat, 1 egg, 1 medium steak or chop, ¾ cup mince or casserole, 1 medium fillet coked fish, 2 drumsticks or 1 chicken leg, ¾ cup cooked legumes.





Kai tips

Bread and cereals

Make rice, pasta, noodles, breads and other grain products the base of meals with smaller amounts of lean meat.

If making your own pastry, pizza or bread dough – try half wholemeal and half white flour.

Offer wholemeal and multigrain breads as well as white.

Check the fibre content of the breads and breakfast cereals you regularly offer. Look on the nutrition information panel under “dietary fibre” – aim for more than 5g per 100g.

Offer at least one choice of high fibre cereal at breakfast e.g. porridge, wheat biscuits.

Provide bread, cereal, rice and pasta-based foods for morning and afternoon tea.

Fruit and vegetables

Include fruit in the menu at least twice a day, this can be raw, cooked, canned or frozen e.g. canned fruit for breakfast, fresh fruit for lunch and fruit crumble for dessert.

- Include fruit (fresh, dried or canned) at breakfast time.
- Offer fresh fruit at lunch or morning/afternoon tea.
- Include fruit-based desserts – fruit salad, fruit crumbles (apple, apricot, berry, pear), low-fat steamed pudding dessert.

Include vegetables in the menu at least three times a day, this can be raw, cooked, canned or frozen.

- Include a salad or soup for lunch in the appropriate season.
- Baked potatoes are a great lunch option. Serve with baked beans, tomato and chilli beans, mashed avocado and tomato or creamed corn.
- Offer vegetables and salads with meals whenever possible.

Always prepare and cook vegetables as close to service time as possible.

- Peel vegetables and fruit only when necessary – many nutrients are found in the skin.
- Boil in a little water or steam.





Kai tips

Lean meat, chicken, seafood, eggs, cooked dried beans, peas or lentils

Cook these foods without added hard fats like lard. Grill, bake, steam, boil, stew or poach – these methods are healthier than frying and roasting.

Choose animal meats that are low in fat.

Order lean red meat and remove any excess fat e.g. trim pork, schnitzel, lean mince.

Limit use of processed meats, include only occasionally e.g. sausages, saveloys, sausage meat, luncheon meats.

If processed meats are offered, combine with lots of vegetables so that the overall meal is higher in fibre and vitamins.

Include chicken at least once a week on the menu – skin the chicken before eating if roasted or baked and before cooking if in a casserole.

Include fish, fresh or canned, more than once per week – bake crumbed fish fillets are healthier than battered deep fried fish.

Include legumes (dried peas, beans and lentils) once a week on the menu. Try using beans in combination with mince, lentils and split peas in soups, beans in salads, baked beans or chilli beans on hamburger buns or as a filling.

Milk and milk products

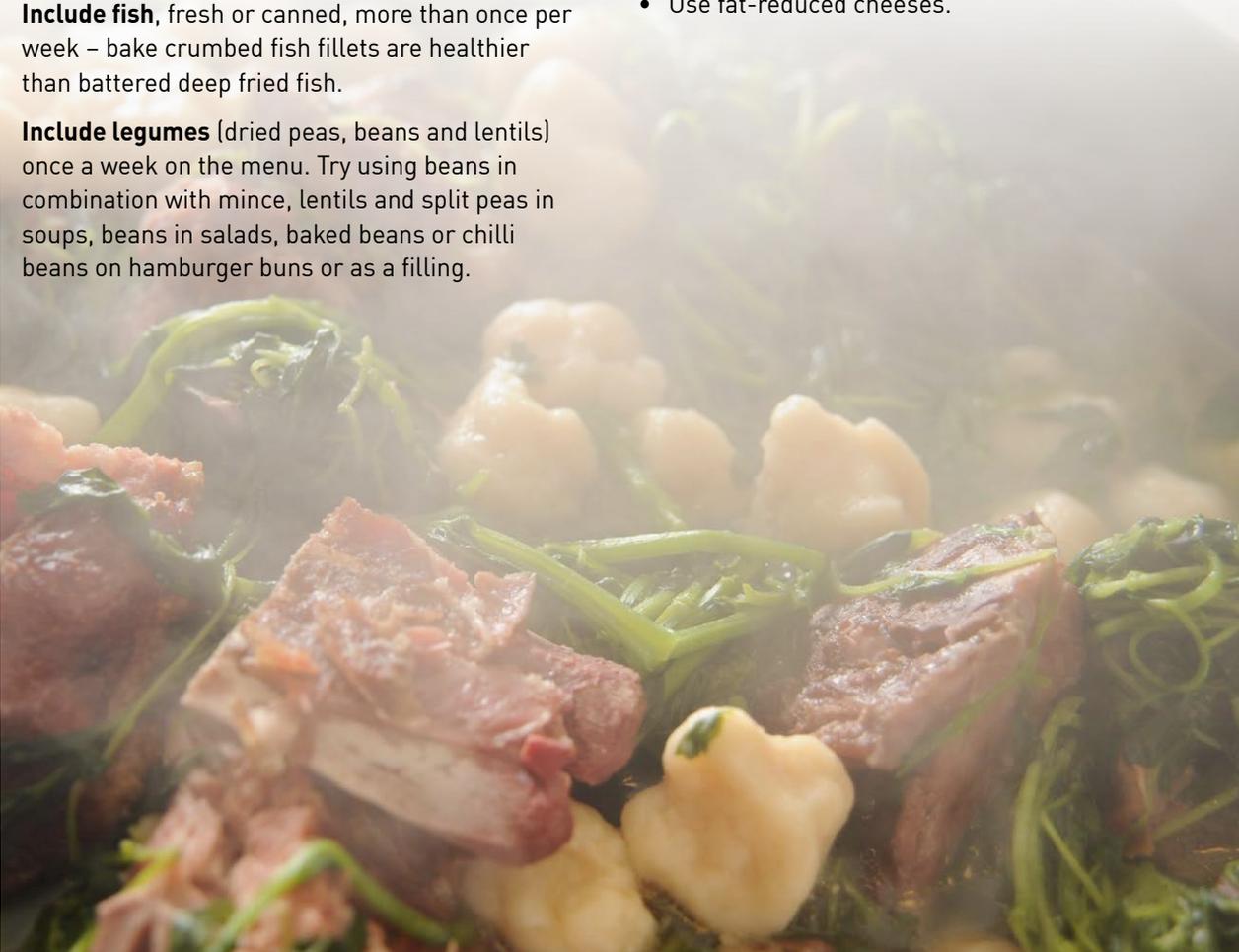
Provide at least two servings of reduced or low-fat milk and milk products each day.

Include milk or yoghurt-based desserts, low-fat cheeses and milk-based sauces on your menu eg low-fat cheese sauce to accompany vegetables or pasta, frozen yoghurt as a dessert, winter puddings such as rice, sago or baked custard.

Use yoghurt as a garnish instead of cream.

Provide low-fat varieties to reduce the intake of less healthy saturated fats.

- Offer a choice of trim and whole milk for cereals and tea/coffee.
- Offer yoghurt at breakfast, lunch or morning/afternoon tea.
- Use low fat milk products for cooking e.g. ricotta cheese, cottage cheese, low-fat sour cream and cream cheese, yoghurt.
- Use fat-reduced cheeses.





Kai tips

Cutting back on fat

Choose foods that are low in saturated fat as the basis for menu planning.

Use low fat mayonnaise or salad dressing – try a mix of vinegar, lemon juice, herbs and a dash of oil as a low fat dressing. Or try using yoghurt.

Use oils such as soybean, safflower, corn, olive, peanut and canola for cooking

Avoid using butter or butter blends, dripping, chefade, kremelta, coconut oil or palm oil.

Use margarines with low levels of saturated fat and trans-unsaturated fat (less than 28 g per 100g).

Make use of cooking methods without added fat e.g. grilling, steaming, boiling, baking, stewing and poaching.

Provide low fat options for morning tea and afternoon tea e.g. sandwiches, fresh or frozen fruit, yoghurt, low-fat baked products etc. Go easy on the use of margarines and spreads.

- Use a thin spread of margarine when preparing sandwiches or rolls.
- If a filling is moist you may choose not to use table spread.

- Try using cottage cheese, mustard or pickle instead of table spread.
- Offer baked products without added spread – serve with some fruit jam or leave plain e.g. muffins, pikelets, scones, fruit loaves.

When planning your menu, limit high fat pastry items.

- This includes shortcrust, flaky, puff or prepared items such as Danish pastries, custard squares and croissants.
- Try filo pastry as an alternative – brush every second sheet with trim milk, orange juice or egg white.
- Pizza bases are usually lower fat.
- Use pastry on the bottom of pies – top with mashed potato.

Limit the use of foods cooked in added fat and foods roasted in added fat e.g. fried and battered foods. For a “roast” meal, bake vegetables in oven with a small amount of oil or spray to stop them sticking.

Limit the use of cream in cooking and as an accompaniment.





Kai tips

Cutting back on sugar

Modify your recipes so you are using less sugar.

Limit snacks high in sugar such as rich sweet cake/biscuits,

Choose fruits canned in their own juice or light syrup.

Limit sugary drinks such as soft drinks and cordial. Instead, encourage drinking plenty of water:

- have cool water readily available;
- make sure water containers are regularly topped up;
- add lemon and chopped mint leaves to water to make more attractive.

Cutting back on salt

Use small amount of salty foods in your menu e.g. processed meats and foods, some sauces and canned foods, bacon, ham, and corned beef.

Use salt sparingly in your cooking – use herbs and spices to enhance flavour.

Provide low salt snacks for morning and afternoon tea – very few processed snack foods are low in salt.

Choose foods low in salt for the basis of menu planning. Menu planning should focus on fruit, vegetables, whole grain breads and cereals, low-fat milk and milk products and lean meats, chicken, seafood, eggs and legumes.

Where possible use soup and sauce mixes that are reduced-salt.

Discourage people from adding salt at the table e.g. keep salt shakers on the servery counter.



Whaiora

He huihuinga tangata, he pūkenga kōrero
The art of engagement

Ihirangi

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Wellbeing can be measured by the level of peoples' participation in society and how confidently they access services.

Section Overview

Parts of society where full participation is critical for health include participation in:

- the economy;
- education;
- employment;
- the knowledge society; and
- decision-making.

The Whaiora section highlights the government agencies and other organisations that provide services and advice to assist Marae with participating actively in the wider community.

The organisations highlighted in this document may not be directly involved in the food sector but provide services and information that will assist Marae.

All links and references to websites, organisations or people not within MPI or New Zealand Food Safety are provided for convenience only and do not imply an endorsement of those websites or the information contained on those websites.





ORGANISATION	DESCRIPTION
GOVERNMENT ORGANISATIONS	
Ministry of Health Manatu Hauora www.health.govt.nz	MoH's drinking water assistance programme includes technical and capital assistance programmes for small drinking-water supplies.
Te Puni Kokiri www.tpk.govt.nz	TPK offers information and services to assist develop and strengthen capacity within Māori communities.
Māori Trustee Office www.tpk.govt.nz	The Māori Trustee helps manage Māori land. It was established in 1921 and is governed by the Māori Trustee Act 1953.
Inland Revenue Department Te Tari Taake www.ird.govt.nz	Specialist Māori Community Officers work out of most Inland Revenue offices. They offer a free advisory service to help meet the needs of Māori individuals, organisations and businesses.
Department of Conservation Te Papa Atawhai www.doc.govt.nz	To conserve New Zealand's natural and historic heritage for all to enjoy now and in the future.
Department of Internal Affairs Te Tari Taiwhenua www.dia.govt.nz	To improve the performance of the labour market and, through this, strengthen the economy and increase the standard of living for those in New Zealand.
Ministry of Business, Innovation and Employment Hikina Whakatutuki www.mbie.govt.nz	One of MBIE's roles is to improve the performance of the labour market and through this strengthen the economy and increase the standard of living for New Zealanders.
Inland Revenue Department Te Tari Taake www.ird.govt.nz	Specialist Māori Community Officers work in most Inland Revenue offices. They offer a free advisory service to help meet the needs of Māori individuals, organisations and businesses.
Ministry for Primary Industries Manatu Ahu Matua www.mpi.govt.nz	MPI is a ministry which helps maximise export opportunities for our primary industries, improve sector productivity, ensure the food we produce is safe, increase sustainable resource use, and protect New Zealand from biological risk.
Ministry for the Environment Manatū Mo Te Taiao www.mfe.govt.nz	Works to achieve good environmental leadership and decision making to deliver the environment that New Zealanders expect and deserve.
NZ Qualifications Authority Mana Tohu Matauranga o Aotearoa www.nzqa.govt.nz	Works to ensure that New Zealand qualifications are regarded as credible and robust, nationally and internationally, to help learners succeed in their chosen endeavours and to contribute to New Zealand society.
Tourism New Zealand www.tourismnewzealand.com	Tourism New Zealand is the organisation responsible for marketing New Zealand to the world as a tourist destination.
Local Government New Zealand www.localgovt.co.nz	Contact your local district or city council for assistance to register a food business.
Work and Income Support Te Hiranga Tangata www.workandincome.govt.nz	Helps people into work and pays income support on behalf of the Government. This includes New Zealand Superannuation and Veterans' Pension payments along with the administration of residential care and support subsidies. They also administer the Community Services Card, International Services and the Enterprising Communities grants programme.
NON-GOVERNMENT ORGANISATIONS	
Poutama Business Trust www.poutama.co.nz	A charitable trust established to provide business development services to Māori.
Te Hotu Manawa Māori www.tehotumanawa.org.nz	Delivers health services by Māori for Māori and promotes healthy lifestyles and healthy environments to achieve Māori heart health.
Te Waka Kai Ora The National Māori Organics Authority of Aotearoa (New Zealand) www.tewakakaiora.wordpress.com	Helps members find ways to promote the production, processing and labelling of pure, safe and healthy organic products.

Appendices

Ngā Tāwhiritanga

Ihirangi

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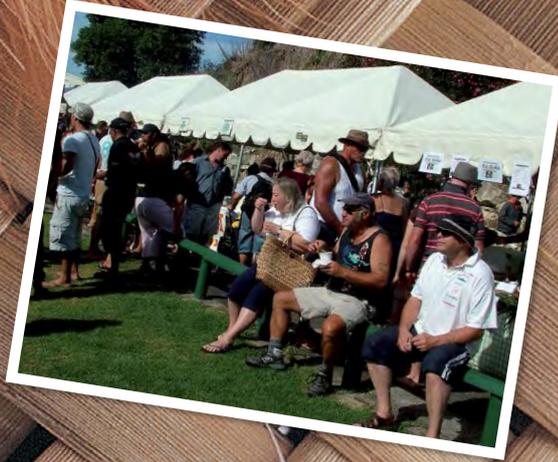
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Date marks –
“Best Before” is the manufacturer’s suggested date that indicates when the kai should be consumed by to ensure it remains at premium quality. Kai can be sold beyond its ‘Best Before’ date providing it’s still fit for consumption.
“Use By” dates are there for health reasons, and indicate the latest date when kai should be consumed. Providing you store the package intact and in accordance with any storage instructions, the product should be safe to eat until its ‘Use By’ date. Don’t eat kai if its ‘Use By’ date has passed. Kai can’t be sold after its ‘Use By’ date.
Harmful microbes that can cause foodborne illness –
these include bacteria, parasites and viruses.
Homekill –
Homekill and recreational catch meat is kai that is gathered from the wild, not bought from the local supermarket or butcher’s shop. Anyone who eats or uses homekill or recreational catch meat does so at their own risk. It’s important to note that homekill and recreational catch meat cannot be sold (or bought) for human or animal consumption. It is illegal to trade homekill or recreational catch meat.
Microbe –
an organism that is microscopic (usually too small to be seen by the naked eye). Microbes include bacteria, fungi, moulds and viruses. While some microbes are important in food production (e.g. for fermentation of yoghurt, cheese, bread, beer and wine), others can cause foodborne illness.
Kai safety –
taking into account the various health risks associated with kai.
Readily perishable kai –
kai that must be kept at certain temperatures (below 5°C or above 60°C i.e. outside the temperature danger zone) to minimise the growth of harmful microbes that can be present in kai or to prevent toxins (poisons) forming in the kai..
Ready-to-eat kai –
kai that is prepared in advance and can be eaten without any further preparation (e.g. cured ham, smoked eel etc).
Recreational catch –
if you’re a recreational hunter or fisher killing, capturing, taking, or harvesting and then processing a wild animal for your own use or consumption (or for someone else), your “food” is called a recreational catch.
Reputable Supplier –
is either: <ul style="list-style-type: none">• a council-registered food premises; or• has a Ministry for Primary Industries approved Food Safety Programme; or• has a Ministry for Primary Industries approved Risk Management Programme; or• has an approved Food Control Plan.
Temperature danger zone –
temperatures between 5°C and 60°C provide ideal growing conditions for harmful microbes that can cause foodborne illnesses to grow quickly. Keep kai out of the temperature danger zone and you’ll reduce the risk of kai becoming unsafe.
Toxins –
chemicals produced by some bacteria that cannot be easily destroyed by cooking. These chemicals can make people very sick if present in the kai when it is consumed.



Items and areas to be cleaned	Frequency of cleaning [tick]			Method of cleaning (Including dilution of any chemicals and who does the cleaning)
	After use	Daily	Weekly	



Ngā Manakotanga Acknowledgements

New Zealand Food Safety thanks the following organisations for their invaluable input into the development of Te Kai Manawa Ora resources:

Auckland Regional Public Health Service

Kāwiti Marae (Te Taitokerau)

Mangatu Marae (Te Tai Rāwhiti)

Murihiku Marae (Te Waipounamu)

Northland District Health Board

Ngā Pou Āwhina (ARPHS)

Orakei Marae (Tamaki Makaurau)

Parapara Marae (Te Taitokerau)

Public Health South

Spear Hospitality

Tairāwhiti District Health Board

Te Hotu Manawa Māori

Tūrangawaewae Marae (Tainui Waikato)

Waikare Marae (Te Taitokerau)

Waikato District Health Board

Wainui Marae (Te Tai Rāwhiti)



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www.foodsafety.govt.nz

ISBN: 978-1-77665-970-8 (print)

ISBN: 978-1-77665-969-2 (online)

Reprinted September 2018

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New Zealand Government