



Processed Meats Code of Practice

Part 2: GMP – Hygiene and
Sanitation, and Quality Assurance

Prelims

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Website

A copy of this document can be found at: <http://www.nzfsa.govt.nz/animalproducts/index.htm>

Review of Code of Practice

This Code of Practice will be reviewed, as necessary, by the New Zealand Food Safety Authority. Suggestions for alterations, deletions or additions to this code of practice, should be sent, together with reasons for the change, any relevant data and contact details of the person making the suggestion, to:

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1 Introduction

Amendment 0

February 2010

1.1 Purpose and Scope

This Code of Practice (COP) has been developed by the New Zealand Food Safety Authority (NZFSA) and the Pork Processors Association to assist meat processors comply with the requirements of the Food Act 1981 and the Animal Products Act 1999, and produce products that are safe and suitable for their intended purpose.

This COP has been written for processors of processed meat products, including smallgoods, operating a Food Safety Programme (FSP) under the Food Act, or a Risk Management Programme (RMP) under the Animal Products Act. However, the guidance provided is also recommended for those operating under the current Food Hygiene Regulations.

Parts 2 and 3 provide guidance on Good Manufacturing Practices (GMP). Part 2 covers hygiene and sanitation, and quality assurance programmes. Part 3 focuses on process control at key processing steps. Processors should comply with both parts to ensure the safe production of processed meats.

1.2 Layout of Part 2

Part 2 is divided into programmes that cover hygiene and sanitation, quality assurance, and other FSP and RMP requirements.

The GMP programmes are laid out with the following subheadings:

Scope

This describes the contents of the particular GMP programme and its application. The sources of hazards controlled under the programme are identified for the hygiene and sanitation programmes.

Control measures

This section discusses the regulatory and industry agreed requirements, and the control measures or procedures for meeting these requirements.

To identify a regulatory requirement, the legislation from which the particular requirement is taken is cited at the end of the sentence. For example,

1.2.2 “All inputs, including raw materials, ingredients, additives and packaging must be handled, processed, and stored in a manner that minimises any potential contamination or deterioration. **[AP Reg 9, HC Spec 115]**”

In most cases the mandatory requirements have been paraphrased. Operators should refer to the legislation for the actual wording. Legal requirements from the Animal Products Act are mandatory for businesses operating under a Risk Management Programme (RMP), and they are strongly recommended for those operating under a Food Safety Programme (FSP). The abbreviations used for legislation cited are:

- AP Reg - the current version of the [Animal Product Regulations](#)
- HC Spec - the current version of the [Animal Products \(Specifications for Products Intended for Human Consumption\) Notice](#)
- RMP Spec - the current version of the [Animal Products \(Risk Management Programme Specifications\) Notice](#)
- AC Spec - the current version of the [Animal Products \(Specifications for Products Intended for Animal Consumption\) Notice](#)

The procedures given in each section are the accepted or industry agreed means of achieving or complying with regulatory requirements. The operator must comply with the procedures that are applicable to their product and process unless they have proposed an alternative process, procedure or parameter that is not provided for in this COP. The operator must demonstrate the validity and effectiveness of any proposed alternative. Any alternative process, procedure or parameter must be documented in the FSP or RMP.

Guidance material is presented in a box. It provides explanatory information, recommendations and options for achieving a particular outcome or requirement.

Monitoring procedures

This section discusses the requirements for monitoring compliance to documented procedures to ensure the effective implementation of the particular GMP programme.

Corrective action procedures

This section gives the corrective actions required when any non-compliance occurs.

Records

This section gives the list of records that must be kept by the operator.

1.3 Other RMP Requirements

Certain requirements specific to RMPs are not adequately covered in this document (e.g. details of the operator and day-to-day manager, identification of risk factors related to wholesomeness and labelling, amendments, verifier's rights, notification requirements and other operational requirements). RMP operators should consult the [RMP Manual](#) for comprehensive discussions of all RMP requirements.

1.4 Documentation of GMP Programmes

1.4.1 Legal requirement

The operator must document sufficient procedures to ensure that GMP is applied. These procedures must cover:

- a. the control measures to be used to control hazards and suitability factors
- b. any parameters to be met
- c. any monitoring procedures that are to be carried out; and
- d. any corrective action procedures that are to be applied in the event of loss of control; including restoration of control, identification and disposition of affected product, and any measures to be taken to prevent recurrence of the loss of control.

1.4.2 Contents of GMP programmes

The operator should ensure that the following are covered in the documented GMP programmes:

- a. purpose and scope
- b. authorities and responsibilities
- c. procedures (covering control measures, monitoring, corrective action and operator verification)
- d. records; and
- e. references to other relevant documents, as applicable.

1.5 Definitions

Amenities - includes toilets, wash rooms, locker rooms, change rooms, lunch rooms, and cafeterias.

Approved maintenance compound - any maintenance compound that is approved by the NZFSA or listed in specifications made under the Animal Products Act 1999 (i.e. listed in the [Approved Maintenance Compounds \(Non-dairy\) Manual](#)). (Note: The use of approved maintenance compounds is mandatory only for RMP operators. Operators under the Food Act may use a “suitable maintenance compound”).

Calibration - procedure used for the comparison of a measuring instrument with a standard, under specific conditions, and adjustment of the instrument, if necessary.

Clean - when used as a verb, means to remove visible contaminants from any surface.

Contaminant - any biological agent, chemical agent, foreign matter or other substance not intentionally added to food which may compromise product safety or suitability.

Cooked product - product that has undergone a cooking step.

Cooking - the application of heat to a product to destroy vegetative pathogens that may pose a hazard to human health.

Control measure - any action and activity that can be used to prevent or eliminate a product safety hazard, or reduce it to an acceptable level.

Corrective action - any action to be taken when the results of monitoring a process step or control measure indicate a loss of control.

Critical Control Point (CCP) - a step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Critical limit - a criterion which separates acceptability from unacceptability at a CCP.

Equipment - includes:

- a. the whole or any part of any utensil, machine, fitting, device, instrument, stamp, apparatus, table, or article, that is used or available for use in or for preparing, marking, processing, packing, storing, carrying, or handling of any product, ingredient, additive, or processing aid; and
- b. any utensil or machine used or capable of being used in the cleaning of any equipment or facilities.

Essential services - includes the provision of gases, lighting, ventilation, and water and waste management.

Facilities - includes amenities, storage areas, and processing areas.

Food additive - any substance not normally consumed as a food in itself and not normally used as an ingredient of food, but which is intentionally added to a food to achieve one or more technological functions.

Food Standards Code - the code incorporated into New Zealand law by the New Zealand (Australia New Zealand Food Standards Code) Food Standards 2002 and issued by the Minister under section 11C of the Food Act 1981.

Good Manufacturing Practice (GMP) - documented procedures relating to practices that are required to ensure products are fit for their intended purpose (may also be referred to as Good Operating Practice (GOP)).

Hazard Analysis and Critical Control Point (HACCP) - a system that identifies, evaluates and controls hazards that are significant for food safety.

Label - includes any wording, tag, brand, symbol, picture, or other descriptive matter written, printed, stencilled, marked, embossed, impressed on, appearing on, attached to, or enclosed within any product.

Ingredient - any substance, including a food or additive, used in the manufacture or preparation of a food and is present, whether in a modified form or not, in the final food.

Manufactured meat - processed meat containing no less than 660g/kg of meat.

Minimise - to have taken all practical steps to substantially reduce the potential hazard of concern, consistent with what is technologically feasible.

Monitor - the act of conducting a planned sequence of observations or measurements of control parameters to assess whether a process step or control measure is under control.

Non-complying product - any product that does not meet regulatory requirements, including relevant regulatory or operator-defined limits; or has not been processed in accordance with regulatory requirements or a validated process.

Operator-defined limit - a measurable limit established by an operator to manage the fitness for intended purpose of a particular product.

Operator verification - the application of methods, procedures, tests and other checks by the operator to confirm ongoing compliance to the documented Food Safety Programme or Risk Management Programme and regulatory requirements.

Packaging -

- a. means any material that is intended to protect and that comes into immediate contact with the product
- b. includes rigid materials such as cartons and containers where the product is filled directly into the carton and container; and
- c. includes any other material contained with, in, or attached to, the product (such as labels, heat sensors, oxygen scavengers).

Pathogen - a microorganism which causes illness.

Post-processing - process steps or activities undertaken after the application of a lethal heat or preservation treatment such as cooking, fermentation, or drying.

Potable water - means water that:

- a. in relation to water supplied by an independent supplier (including a public or private supplier), is of a standard administered by the independent supplier under the Health Act 1956 and any regulations made under that Act; or

- b. in relation to water supplied by the operator solely for the use of the operator such as bore water, rainwater, surface water, or ground water:
 - i. is of a standard equivalent to that in paragraph (a), as determined by the operator based on an analysis of hazards and other risk factors; or
 - ii. complies with the requirements in Schedule 1 (of the HC Spec); or
- c. meets the requirements of the current “Meat Division Circulars 86/3/2 Surveillance of Potable Water in Meat and Game Export Premises” and “86/3/5 Amendment to MDC 86/3/2 86/14/5 on Surveillance of Potable water in Meat and Game Export Premises” issued by the Ministry.

Protective clothing - special outer wear garments intended to preclude the contamination of product; and includes head coverings and footwear.

Process control - all conditions and measures applied during a process that are necessary to achieve safety and suitability of a product.

Processed meat - a meat product containing no less than 300 g/kg meat, where meat either singly or in combination with other ingredients or additives, has undergone a method of processing other than boning, slicing, dicing, mincing or freezing, and includes manufactured meat and cured and/or dried meat flesh in whole cuts or pieces.

Processing areas/rooms - includes all areas where ingredients and products are prepared (thawed, cut, weighed, pre-mixed, injected, cured, massaged, tumbled, emulsified, filled), processed (cooked, cooled, dried, fermented, sliced), and packed.

Protected - means sufficiently wrapped, packaged or enclosed to prevent the introduction of contaminants.

Ready-to-eat (RTE) product - a product that is ordinarily consumed in the same state as that in which it is sold. RTE products do not require additional preparation to achieve food safety, however, they may receive additional preparation for organoleptic reasons (i.e. to make them taste and/or look better). They can include frozen processed meat products.

Regulatory limit - a measurable regulatory requirement that is critical to the fitness for intended purpose of a particular product.

Rework (noun) - a product which has been partially or fully processed and is incorporated and reprocessed into another batch of product.

Rework (verb) - to incorporate rework into another batch of product.

Sanitise - the application of a chemical or physical agent with the intention of reducing microbial contamination to a level that will avoid the creation of a hazard.

Separate by distance - to separate products or processes by location or distance within a room or area so that any contact or contamination between products, equipment, processes or personnel is avoided.

Separate physically - means to separate by floor to ceiling walls and doors, or to fully protect product by containing it in enclosed vessels or equipment such as pipelines and vats.

Separate by time - to separate products and processes by means of a time difference.

Shelf-life - the period nominated by the operator during which a product maintains its fitness for intended purpose.

Smallgoods - term commonly used in New Zealand to refer to manufactured meat products such as hams, bacons, other cured products, and cooked meats.

Suitably skilled person - a person who in the opinion of the operator is skilled in a particular activity or task through training, experience, or qualifications.

Transportation outer - means a package that:

- a. encases any packaged or unpackaged animal material or animal product for the purpose of transportation and distribution; and
- b. is either removed before the animal product is used or offered for retail sale, or is not taken away by the consumer of the product;

but does not include a transportation unit.

Validation - process of obtaining evidence to demonstrate that a particular product will be fit for its intended purpose, through the achievement of any regulatory or operator-defined limit.

Waste - includes, without limitation, all solids, liquids, and gases that the operator intends to dispose of as being unwanted and that may become a source of contamination or attract pests.

2 General Requirements

Amendment 0

February 2010

2.1 Scope

This section gives the regulatory requirements that apply to all GMP programmes covered in this COP.

2.2 Hygienic Practices

2.2.1 Operators must establish and carry out procedures to:

- a. ensure appropriate and adequate maintenance, cleaning, and sanitation of premises, facilities, essential services, and equipment
- b. manage waste
- c. control pests; and
- d. implement effective personnel hygiene practices. **[AP Reg 11; Food Act Section 8G]**

2.2.2 All inputs, including raw materials, ingredients, additives and packaging must be handled, processed, and stored in a manner that minimises any potential contamination or deterioration. **[AP Reg 9, HC Spec 115]**

2.3 Documents and Records

2.3.1 Operators must document the following in their FSP or RMP:

- a. processing procedures, and product and process parameters
- b. procedures for monitoring and verifying compliance to established processing procedures and parameters, particularly critical limits at identified critical control points

-
- c. corrective actions for any non-compliance or deviation to any regulatory limit or operator-defined limit, procedures, and product and process parameters. **[RMP Spec 8 and 11; Food Act Section 8G]**

2.3.2 Operators must maintain accurate records, particularly those for the monitoring and verification of product and process parameters critical to product safety. **[RMP Spec 20(2); Food Act Section 8G]**

3 Document Control and Record Keeping

Amendment 0

February 2010

3.1 Scope

This section discusses the requirements for the control of FSP and RMP documents, and record keeping.

3.2 Control Measures

3.2.1 Document control

3.2.1.1 The operator must implement procedures to control documents and records; and ensure that the FSP or RMP is up-to-date and reflects the actual operation.

3.2.1.2 Every document that forms part of the FSP or RMP must be:

- a. legible
- b. dated or marked to identify its version
- c. authorised (signed) prior to use, either directly or within the document control system, by:
 - the operator
 - the day-to-day manager of the programme, or
 - a person nominated to do so in the programme's document control system; and
- d. available in a readily accessible form when required to by person with responsibilities under the programme. **[RMP Spec 19(1)]**

3.2.1.3 The operator must keep a register of all current FSP or RMP documents showing the document title, and current version and/or date of issue.

3.2.1.4 Details of all amendments to the FSP or RMP must be recorded in an amendment register. **[RMP Spec 19(2)]**

The amendment register may be presented in a table with the following column headings: document name or reference, details of amendment, reason for amendment, date of change, approved by.

In addition to completing the amendment register, amendments should also be identified in the document itself (e.g. by use of *italics*, highlighting the amended text).

RMP operators should consult the [RMP Manual](#) sections 3.3 and 3.19 for more detailed information regarding amendment requirements.

3.2.1.5 After an amendment has been authorised (and registered in the case of a significant amendment to an RMP) all amended parts of the FSP or RMP must be replaced with the current versions at all distribution points, without unnecessary delay. **[RMP Spec 19(2d)]**

3.2.1.6 The operator must retain for four years, one copy of all obsolete documents from a registered FSP or RMP in a manner that protects the documents from damage, deterioration or loss. **[RMP Spec 19(3)]**

3.2.1.7 Electronic versions of FSP or RMP documents must be protected with an effective backup system.

3.2.1.8 The operator must ensure that the registered FSP or RMP, and any archived documents, are readily accessible, or can be retrieved and made available within two working days of any request to:

- a. recognised or approved persons
- b. animal product officers (or food officers)
- c. the Director General; and
- d. persons authorised by the Director General. **[RMP Spec 19(4)]**

3.2.2 Record keeping

3.2.2.1 The operator must ensure that all records are legible, and stored for four years in a manner which protects the records from damage, deterioration or loss. **[RMP Spec 20(1)]**

3.2.2.2 Records relating to the FSP's or RMP's monitoring, corrective action and operator verification activities must include:

- a. the date and, where appropriate, the time of the activity or observation
- b. a description of the results of the activity or observation; and
- c. the identify of the person(s) who performed the activity. **[RMP Spec 20(2)]**

The way in which the date and time are documented in the record should be appropriate to the activity being monitored. For example, the monitoring of certain critical process time and/or temperatures may require the recording of the exact date and time when the observation is made. However, for the monitoring of certain GMP programmes, such as checking compliance with protective clothing requirements, a more general time period for the observation may be acceptable (e.g. shift).

3.2.2.3 Records must accurately reflect any observations taken, and must be made in way that facilitates verification.

Consideration should be given to the durability of paper on which records are kept (e.g. pen does not write well on wet paper), and its suitability for storage (e.g. thermal papers can fade over time). Pencil is not suitable for recording information because it is easy to erase or alter. Any alterations made to records should be made alongside the original entry and initialled by the person amending the record. The use of white out products (e.g. TwinkTM) is not acceptable to auditors and verifiers as it is not possible to see the original entry.

3.2.2.4 Electronic records must be backed up and protected from corruption, damage or loss. The person entering the data must be identified according to systems developed for the protection of electronic records.

3.2.2.5 The operator must make all records available to the following persons as required:

- a. recognised or approved persons

- b. animal product officers (or food officers)
- c. the Director-General; and
- d. persons authorised by the Director-General. *[RMP Spec 20(3)]*

3.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

3.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the document control system is found to be ineffective.

The corrective actions should include: an assessment to determine the cause and extent of the non-compliance, and any consequential effects on other documents or records, and programmes; and actions necessary to prevent the recurrence of the problem (e.g. retraining of personnel involved, review of procedures and making amendments, if necessary).

3.5 Records

Records of the following must be kept:

- a. list of documents that make up the FSP or RMP
- b. amendment registers; and
- c. GMP and process control records, including monitoring, corrective action and verification records.

4 Design and Construction of Buildings, Facilities and Equipment

Amendment 0

February 2010

4.1 Scope

This section discusses the requirements and procedures for ensuring that all buildings, facilities and equipment are designed, constructed, installed and operated in a manner that prevents or minimises contamination of products, packaging, other inputs, equipment, and the processing environment.

The requirements of the Building Act 2004 are not covered in this document. Operators must comply with this and any other relevant legislation.

The sources of hazards controlled under this programme are summarised below.

Source of hazard	Examples of hazards
Facilities, equipment	Bacterial pathogens (e.g. <i>Listeria monocytogenes</i> , <i>Salmonella</i> spp., <i>E.coli</i> spp.) Chemical residues (e.g. toxic metals from product contact surfaces made of materials with cadmium, lead and their alloys) Physical hazards (e.g. metal, glass)
Maintenance chemicals (e.g. lubricating fluids)	Chemical residues
Environmental contaminants (e.g. dust, fumes, pollutants, sewage) Air	Bacterial pathogens (e.g. <i>Salmonella</i> spp., <i>E. coli</i> spp., <i>Clostridium</i> spp.) Chemical residues from fumes, pollutants
Pests (e.g. insects, rodents, birds) Waste (e.g. waste water)	Bacterial pathogens (e.g. <i>Salmonella</i> spp., <i>Campylobacter</i> spp., <i>E. coli</i> spp., <i>Listeria monocytogenes</i>)

4.2 Control Measures

4.2.1 General requirements

4.2.1.1 The operator must ensure that the premises, facilities, equipment and essential services are designed, located and constructed in a manner that enables the fitness for intended purpose of the product to be achieved and maintained. **[AP Reg 10]**

4.2.1.2 The facilities, equipment and internal structures, that may affect the suitability for processing of any material or the fitness for intended purpose of any product, must be of sanitary design. **[HC Spec 5(2)]**

4.2.1.3 Temperature controlled rooms and equipment must be operated within their design capability and capacity, and must consistently deliver the required temperature. **[HC Spec 6(3)]**

4.2.2 Location of premises and buildings

When deciding where to locate food premises or buildings, potential sources of contamination must be considered, as well as the effectiveness of any reasonable measures that might be taken to protect the product and the processing environment. Premises must be located away from:

- a. environmentally polluted areas and industrial activities which pose a serious threat of contaminating products
- b. areas subject to flooding unless sufficient safeguards are provided
- c. areas prone to infestation of pests; and
- d. areas where wastes, either solid or liquid, cannot be effectively removed.

4.2.3 Transport access ways

Roads, traffic areas and transport access ways on the premises site, and areas between and around buildings, must be constructed and maintained in a manner that facilitates effective drainage of surface water and minimises environmental contamination of the processing environment (e.g. from dust, mud).

Transport access ways and areas surrounding buildings should be sealed.

4.2.4 Design and layout of buildings and facilities

4.2.4.1 Adequate facilities must be available for the:

- a. hygienic performance of all operations
- b. storage of raw materials, ingredients, products, packaging and equipment
- c. storage and distribution of water
- d. cleaning and sanitation of facilities and equipment
- e. performance of personnel hygiene activities
- f. provision of essential services; and
- g. drainage and disposal of wastes.

4.2.4.2 Buildings, including internal structures such as floors, ceilings and walls, must be designed and constructed in a manner that:

- a. minimises contamination of the product
- b. facilitates cleaning and maintenance
- c. minimises the entrance and harbourage of pests; and
- d. minimises the entry of environmental contaminants.

4.2.4.3 Adequate space in processing areas must be provided to facilitate:

- a. the hygienic performance of all operations
- b. proper movement of personnel and materials
- c. the installation of equipment; and
- d. effective cleaning.

There should be adequate spacing to allow for cleaning and inspection:

- a. between pieces of processing equipment
- b. between equipment and walls; and
- c. between the base of equipment and the floor.

Equipment which releases a great deal of heat or moisture should be spaced sufficiently away from walls or ceilings to prevent damage to buildings.

4.2.4.4 The design and layout of processing facilities and equipment in the premises must:

- a. facilitate separation and prevent cross-contamination between:
 - raw and RTE products
 - products of different allergen status
 - products for human consumption and for animal consumption
 - any other incompatible products or operations (e.g. products with special characteristics such as organic), and
 - contaminated materials (e.g. outer packaging) and products and product contact surfaces; and
- b. facilitate the control of movement of personnel, raw materials and products, and equipment from areas of a lower hygienic status to those with a higher hygienic status; and
- c. facilitate effective cleaning and sanitation between operations with a different hygiene or allergen status.

Businesses building new premises are strongly advised to consider implementing physical separation between raw and RTE areas. Ideally:

- a. facilities should be designed so that the principle of one-way flow of food (i.e. from raw material receiving to dispatch of finished products) can be implemented
- b. the design and layout of the premises should restrict personnel access to RTE processing areas with access only through a changing facility
- c. drains from the “dirty” or “raw” side should not be connected to those on the “clean” or

“cooked” side

- d. floors in wet processing areas should have trapped drains. Point drains are preferred rather than open channel drains and they should be spaced appropriate to the activity. Open channel drains, when used in RTE areas should have a fall of at least 1 in 60 and be coved to allow ready cleaning. These drains should be deep enough along their length to prevent overflow and wide enough to allow cleaning
- e. RTE processing areas should have positive air pressure relative to the surrounding areas (i.e. air flow should move outward from RTE areas to adjacent areas of the premises)
- f. separate storage facilities (e.g. chillers and freezers) should be provided for the storage of raw and RTE products
- g. doors should be self-closing and, except where there is conflict with emergency exit requirements, should close with the internal pressure rather than against that pressure
- h. roller doors, sectional slide-over doors, concertina doors, folding doors and other multi-section doors that are difficult to clean should not be used
- i. plastic strips should not be used in doorways; and
- j. preformed coving that has a hollow cavity should not be used.

4.2.4.5 Any facilities used for the processing of product for animal consumption must be physically separated from facilities where product is processed for human consumption, and must be used only for the processing of product for animal consumption. However, products for human consumption and animal consumption may be processed in the same facilities, if the operator has effective procedures in place to maintain separation of product intended for human consumption from that intended for animal consumption, and to prevent cross-contamination or substitution between them. **[AC Spec 10 (7) and (8)]**

4.2.5 Floors, walls and ceilings

4.2.5.1 Floors, walls, ceilings and other exposed internal surfaces in processing areas that may affect the suitability or fitness for intended purpose of product must:

- a. in the case of surfaces subject to moisture (i.e. moisture from products, cleaning chemicals, water), be impervious and non-absorbent

- b. be free from depressions, pits, cracks, and crevices that may harbour contaminants
- c. be unaffected by any corrosive substance with which it is likely to come into contact, to the extent necessary to ensure that it will not harbour contaminants and is not a source of contamination
- d. be durable, resistant to fracture, and capable of withstanding repeated exposure to normal cleaning and sanitising
- e. be smooth, except for floors; and
- f. in the case of materials lining the walls, floors and ceilings, be of a colour that does not disguise contaminants having regard to the lighting arrangements. **[HC Spec 5(1)]**

Commonly used acceptable materials for floors are sealed concrete, floor tiles, and vinyl. Concrete or mortar floors which incorporate an approved latex or synthetic resin finish have better than ordinary resistance to meat, fats and acids.

Insulated panels are recommended for walls in processing areas. Laminates and melamine face sheeting are also suitable construction materials. Porous surfaces such as cement or plaster are not acceptable unless they are sealed to render them impervious to moisture.

Cracks or breaks in the floor, coving and in the wall lining in high risk areas (e.g. areas where cooked or RTE products are handled) require sealing as a priority of plant maintenance since they are potential reservoirs for *Listeria*.

4.2.5.2 Floors must be sufficiently strong to withstand its expected use (e.g. foot traffic, trolleys and forklifts).

4.2.5.3 Floors must be adequately graded to facilitate the drainage of water and prevent pooling.

Floors should be sloped so that water will run off to floor drains.

4.2.5.4 Floor to wall junctions must be constructed in a manner that facilitates cleaning.

The floor-to-wall junction should be coved in areas where wet operations or cleaning occur. Hollow coving is not recommended.

4.2.5.5 Floor joints and wall joints must be finished flush with the surface, and be sealed to prevent the ingress of water, pests and contaminants.

4.2.5.6 Objects attached to walls and ceilings, such as pipe work, cables, overhead cranes, light fixtures, fans and hoses, must be designed and appropriately located so that they:

- a. can be easily cleaned
- b. do not obstruct the cleaning of the walls or ceiling; and
- c. do not become a source of contamination of products (e.g. dust, dirt, rust particles, peeling paint).

4.2.5.7 Product lines, service lines, and ducting that pass through walls, ceilings or floors must be sealed to:

- a. eliminate crevices on both the interior and exterior surfaces
- b. prevent water seepage; and
- c. prevent harbourage and entry of vermin.

4.2.6 Doors and windows

4.2.6.1 Doors should be installed and located where their opening and closing will not result in contamination of products, equipment and the processing environment from external surroundings or other areas of lower hygienic status (e.g. waste area).

Doors in areas where processing and/or packing is carried out should not open directly to the outside. An anteroom providing two doors between the processing or packing room and the outside is recommended.

4.2.6.2 Doors must be impervious to moisture and cleaning chemicals, and easy to clean.

Roller doors, sectional slide-over doors, concertina doors, folding doors and other multi-section doors that are difficult to clean should be avoided, whenever possible.

4.2.6.3 Door jambs must be sealed to adjoining walls and floor junctions.

4.2.6.4 Plastic strips used in doorways must be installed in such a way so they can easily be taken down for regular cleaning. They must be replaced when they are worn or when they can no longer be effectively cleaned.

4.2.6.5 Windows must be constructed in such a way so they are easy to clean. They must be properly sealed to prevent water seepage, and harbourage and entry of pests.

Windows should be flush with the inside surface of the wall. However, if the sill has an inside ledge, this should be sloped downwards at an angle to prevent the build-up of dust and to facilitate effective cleaning.

4.2.6.6 Glass windows must not be used where glass could contaminate product if the window breaks.

The use of safety glass is a satisfactory alternative.

4.2.7 Drainage

4.2.7.1 The design and construction of the drainage system must prevent odours, pests, other objectionable material and storm water from entering the premises.

4.2.7.2 Drains must be of sufficient capacity (i.e. size and fall) to ensure liquid and solid waste is contained and rapidly removed to minimise the spread of waste across floors.

Screens or grating should be installed to prevent large fragments of solid material from entering the drains.

4.2.7.3 Drains must be designed and constructed in a manner that prevents potential contamination of products, packaging and equipment from aerosols and splashes from drains.

4.2.8 Lighting

4.2.8.1 Lights and light fixtures over products, exposed packaging material, or equipment must be of a safety type, or protected to prevent contamination of products in the event of breakage.

4.2.8.2 Lighting must be of sufficient intensity and quality to enable satisfactory performance of all operations, checks, and inspections. **[HC Spec 7]**

The following lighting intensities are acceptable:

- a. processing rooms – 500 lux, measured at working plane
- b. areas where product is inspected and prepared to inspection standards – 750 lux, measured at the working plane
- c. laboratories – 750 lux, measured at the bench
- d. stores with constant operation – 300 lux, measured at the floor aisles
- e. staff rooms, changing rooms, lavatories – 150 lux, measured at the floor

4.2.9 Ventilation systems

4.2.9.1 Well designed ventilation or air conditioning systems must be provided in processing areas to:

- a. minimise steam and condensation
- b. minimise airborne contamination of products; and
- c. control room temperatures and humidity, if required.

4.2.9.2 Ventilation systems must be designed, located and constructed in a manner that:

- a. ensures that air flows from “clean” to “dirty” processing areas, and cooked/RTE areas to raw food areas
- b. avoids air flow from warm areas to cold areas to minimise condensation problems; and

- c. prevents the entry of contaminants such as dust, ash, vapour or smoke.

Outside vents should be designed and constructed in a way that discourages birds from perching on them.

4.2.9.3 Effective filters must be installed and maintained in accordance with the manufacturer's recommendations.

4.2.9.4 Where air conditioning units are used or air is otherwise heated or cooled, fins on radiator and evaporator banks must be accessible for inspection, cleaning and sanitising. Condensate collection trays must be accessible for inspection, cleaning and sanitising.

4.2.9.5 Ventilation inlets and exhausts must not be installed in locations that would allow condensation or debris to fall and contaminate product (e.g. above open vats or trolleys in the chiller).

Equipment which release large amounts of heat or moisture should be isolated in a dedicated room and/or the equipment should be covered and vented.

4.2.9.6 Exhaust ventilation hood systems (e.g. hoods above certain cookers) must be designed, installed and maintained in a manner that prevents grease or condensation from draining or dripping onto product and equipment.

4.2.10 Water and steam

4.2.10.1 An adequate supply, volume and pressure of potable water, and appropriate facilities for its storage, distribution and temperature control must be available to ensure the safety and suitability of product and the hygienic operation of the premises.

Hot water used for the sterilisation of food processing equipment and other product contact surfaces that are subject to contamination should be at 82°C or higher, at the point of use.

4.2.10.2 Steam used in direct or indirect contact with product or product contact surfaces must not contain any substances which may be hazardous to human health. Steam must be produced from potable water.

4.2.11 Process gases and product contact air

4.2.11.1 Process gases that come into direct contact with any product must meet one of the following current standards:

- a. the “Food Chemicals Codex” published by the National Academy of Sciences and the National Research Council of the United States of America in Washington, D.C
- b. a “Food and Nutrition Paper” published by the Food and Agriculture Organisation of the United Nations in Rome
- c. the “Japanese Standards of Food Additives” published by the Federation of Food Additives Association in Japan
- d. the “British Pharmacopoeia of the Pharmaceutical Codex”; or
- e. the current Australia New Zealand Food Standards Code, Part 1.3 “Substances added to Food”, Standard 1.3.4 “Identity and Purity”. **[HC Spec 15]**

4.2.11.2 When compressed air is generated on-site for the purpose of processing and comes in direct contact with any product, the air must be filtered and the source must be clean and external to the building. **[HC Spec 16 (2)]**

4.2.11.3 The filters for filtering air that is used in contact with any product must comply with the current International Organisation for Standardisation Standard on “Compressed Air for General Use Part 1, Contaminants and Quality Classes”: Ref. No. ISO 8573.1, 1991; or any other international standard recognised by the NZFSA. **[HC Spec 16 (2)]**

4.2.11.4 Equipment used in delivering air and other gases used for direct or indirect product contact must be designed and operated in such way so that it does not introduce contamination to the product. The air and gases must be odourless and free from lubricating oil, water and solid particles.

Product contact air includes air used for cooling, drying, conveying, mixing and stirring; and compressed air that comes in contact with product or product contact surfaces.

Equipment using pressurised air in direct product contact should be fitted with a filter located as near to the use outlet as is feasible. The choice of filter will depend on the nature of the product

and process, and the size, nature and concentration of the particulate matter to be removed. Filters should be readily removable for replacement or cleaning.

4.2.12 Temperature-controlled rooms

Temperature controlled rooms and equipment must be operated within their design capability and capacity, and must consistently deliver any temperature specified in legislation or in the FSP or RMP. **[HC Spec 6 (3)]**

Processing areas should be maintained at a temperature not exceeding 12°C, except when:

- a. temperature conditions are sufficient to maintain the temperature of the meat and/or mix at not more than 7°C; and/or
- b. processing areas are used for thermal processing, fermentation, or where a higher temperature is either not detrimental to product safety or is required for its manufacture.

4.2.13 Refrigeration facilities

4.2.13.1 Refrigeration facilities must be designed and constructed with the:

- a. capability to reduce product temperatures to the required temperature within the prescribed time; or maintain product temperatures at or below the required temperature; and
- b. capacity appropriate for the volume of products likely to be processed or held on the premises at any one time.

4.2.13.2 Refrigeration facilities must be designed in a manner that minimises fluctuations in temperature caused by movement of products, people and equipment.

Temperature fluctuations can be minimised by using self closing doors, air curtains, plastic strip curtains, and in the case of doors that open to the outside, truck dock seals or full environmental facilities. Build-up of snow and ice in a freezer indicates that a significant entry of warm air has been occurring over a period of time.

4.2.13.3 Equipment for the control and accurate monitoring of temperatures and, when required, other refrigeration parameters (e.g. humidity, air-flow), must be provided and must operate at all times while refrigeration facilities are in use.

There should be a sufficient number of temperature sensors to monitor the temperature range in different parts of the room. If only one temperature sensor is used, it must be located in the return air flow to the evaporator unit, as this usually has the highest temperature.

Chillers and freezers should be fitted with calibrated automatic temperature recorders. When this is not provided, the temperature of the room should be monitored manually at regular intervals.

4.2.14 Waste facilities

4.2.14.1 Equipment and storage areas that are used to store or contain waste must:

- a. be clearly identified, and if equipment is permanently installed in an identified storage area, either the equipment or storage area may be identified; and
- b. not be a source of contamination to any animal product. **[HC Spec 20]**

4.2.15 Processing equipment

4.2.15.1 All equipment that come into contact with any product must be designed, constructed, installed and operated in a manner that:

- a. ensures the effective performance of the intended task
- b. ensures effective cleaning and sanitation
- c. facilitates effective process control and monitoring; and
- d. does not cause contamination of the product.

4.2.15.2 Equipment must be:

- a. durable
- b. resistant to chipping, cracking, flaking, delamination, abrasion
- c. able to withstand exposure to heat, water and all products expected to be processed under normal operating conditions

- d. designed to minimise build-up of food material and other residues; and
- e. corrosion resistant.

Bolts, nuts and threads on product contact surfaces should be avoided. When the use of these is unavoidable, they should be readily accessible for cleaning and inspection. Nuts should be open-ended, and bolts and nuts should be securely attached.

Equipment having seals and bearings should be designed and fabricated in a way that prevents lubricant from leaking, dripping, being forced into, or in any way contaminating product contact surfaces.

Equipment that is wet cleaned should be self-draining and graded to drain points, so no pools of liquid are left after cleaning.

Product contact surfaces should be free from imperfections such as pits, folds and crevices.

The product contact surface of welded joints should be ground and polished, and be free from pits, cracks and slag and gas inclusions, except that internal grinding and polishing is not required on product pipelines.

Product contact surfaces should not be painted.

4.2.15.3 All surfaces in direct contact with any product must be inert to the product, cleaning materials and other substances that it is likely to be exposed to under normal conditions of use.

4.2.15.4 The following materials must not be used in any equipment or product contact surface:

- a. toxic metals such as cadmium, lead and their alloys
- b. metals whose contact with liquid or other material may create harmful chemical or electrolytic action
- c. porous materials such as sponge rubber, stone slabs, linoleum, leather and fabrics (excluding strainers/filters)
- d. wood; and
- e. galvanised metal.

Stainless steel (300 series or better) is the preferred material for equipment that comes into contact with meat products.

Aluminium is not recommended. It has a tendency to warp and is susceptible to the effects of both oxidation and certain types of corrosion, especially from alkaline cleaning chemicals. The soft nature of the metal also leaves it susceptible to pitting and scratching.

Galvanised metal should not be used for product contact surfaces because the zinc coating wears off to expose the base iron sheet, which corrodes. In addition, the zinc coating is soluble in acidic food, and in acid and alkali detergents. Galvanised iron cages and trolleys may be used provided they do not come in direct contact with any exposed product.

Wood is not a suitable material for product contact surfaces because its porous nature allows products to penetrate the surface, and once impregnated it cannot be cleaned effectively. Residual product in the wood provides a nutrient source for microorganisms.

New equipment which will be used in direct contact with meat products should be provided with a letter of guarantee from the supplier certifying its acceptability for food use.

4.2.15.5 The product contact surfaces of conveyor belts must be constructed of smooth material (e.g. intralok type belting), be a colour which does not disguise contaminants, and be undamaged.

4.2.15.6 Containers used for holding ingredients, products, cleaning materials, wastes or other materials must be clearly identified and differentiated as to their use (e.g. by labels or colour coding).

4.2.15.7 Cutting boards must be smooth, shatterproof and of a colour that does not disguise contaminants, and be easily cleaned and sanitised.

4.2.15.8 Storage racks or shelving must be a sufficient height off the floor to allow cleaning underneath.

4.2.16 Monitoring equipment

4.2.16.1 The type of monitoring equipment (e.g. thermometers, relative humidity gauges), and its capability and accuracy, must be appropriate for the product, process, facility or equipment it is fitted to.

4.2.16.2 Monitoring equipment must be installed where it can be easily read, and accurate readings of the relevant parameter can be taken (e.g. warmest temperature of the refrigeration equipment or facility and the coldest temperature of the cooking equipment).

4.2.16.3 Measuring equipment that is used to carry out a critical measurement must be properly calibrated and function as intended. **[AP Reg 14]**

Refer to Section 10: Calibration of Measuring Devices

4.2.16.4 Monitoring equipment must be adequately protected from physical and chemical damage.

4.2.17 Cleaning facilities and equipment

4.2.17.1 Cleaning and sanitation facilities, and equipment, must be provided to ensure that the hygiene of personnel, equipment and the premises can be maintained. **[HC Spec 6(4)]**

4.2.17.2 Cleaning equipment must be maintained in a hygienic and good working condition.

4.2.18 Employee amenities

4.2.18.1 Amenities must be designed and constructed in a manner that:

- a. provides sufficient space and facilities for employees to consume food, change clothes, store personal belongings and to attend to personal hygiene
- b. facilitates cleanliness and tidiness and prevents the entry of pests
- c. provides adequate lighting and ventilation; and
- d. precludes direct opening into any processing area.

4.2.18.2 Lockers for storing employees' clothing and personal belongings must be constructed in a manner that allows for the lockers and surrounding area to be easily cleaned.

Lockers should be located off the floor to allow for easy cleaning underneath (e.g. at a height of 300mm above from the floor). Alternatively, lockers could be placed directly on the floor without any gaps between the floor and the lockers.

4.2.18.3 All opening windows or vents must be adequately screened against pests.

4.2.18.4 Toilet vents must be sited far enough from ventilation intakes so that there is little possibility of cross contamination.

4.2.19 Washing and sanitising units

4.2.19.1 Hand washing units must be:

- a. non-hand operable (e.g. foot, knee or automatic)
- b. located in areas that are readily accessible to all persons working in or entering a processing area
- c. provided with warm potable water, approved liquid soap and disposable paper towels or other hand drying facilities that do not contaminate washed hands or the surrounding area (e.g. roller towels fitted with a timed automatic retraction device that removes the soiled piece of towel immediately after use); and
- d. provided with a container for collection of waste towels.

4.2.19.2 Hand sanitising units (when these are used) must be:

- a. designed to minimise potential for cross contamination
- b. provided with suitable hand sanitiser; and
- c. located next to hand washing units.

RMP operators must use hand sanitisers from the list in the [Approved Maintenance Compounds \(Non-dairy\) Manual](#).

4.2.20 Facilities for washing, and sanitising, when necessary, of waterproof protective clothing (e.g. boots, aprons, gloves) must be provided.

The facilities should be located in or adjacent to the processing area; and designed and constructed in a manner that minimises splashes on to surrounding areas, products, and equipment.

4.3 Monitoring Procedures

Compliance to the requirements and procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

Examples of monitoring activities are: daily pre-operational checks of certain equipment or facilities, temperature checks of refrigerated rooms and other temperature-controlled rooms; and monthly maintenance checks.

4.4 Corrective Action Procedures

4.4.1.1 The operator must take corrective actions when any non-compliance occurs. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address:

- a. how the problem will be fixed (e.g. repair or replace equipment)
- b. the identification and disposition of any affected product; and
- c. the prevention of the recurrence of the problem (e.g. change design of equipment or facility; retraining of workers using the particular equipment).

4.5 Records

Records of the following must be kept:

- a. building layout, floor plans
- b. engineering designs and specifications
- c. equipment diagrams and specifications; and
- d. monitoring and corrective action records.

5 Potable Water

Amendment 0

February 2010

5.1 Scope

This section discusses the requirements for potable water used for processing, cleaning, personnel hygiene and other activities necessary to maintain the hygienic condition of the premises, facilities and equipment and to produce product that is fit for its intended purpose.

The sources of hazards controlled under this programme are summarised below.

Source	Examples of hazards
Faecal material (e.g. animal droppings, sewage)	Pathogenic microorganisms (e.g. <i>E. coli</i> spp, <i>Campylobacter</i> spp, <i>Cryptosporidium</i> , <i>Giardia</i> , viruses)
Agricultural chemicals (e.g. fertiliser, pesticides)	Nitrate
Soil	Pathogenic microorganisms (e.g. <i>E. coli</i> spp, <i>Campylobacter</i> spp, <i>Cryptosporidium</i> , <i>Giardia</i> , viruses) Toxic chemicals(e.g. arsenic, boron)
Pipes and tanks	Copper, lead
Roof paint for roof collected water	Lead

5.2 Control Measures

5.2.1 Supply of potable water

An adequate supply of potable water must be available and used:

- for processing of products (e.g. used as an ingredient, cooling of cooked meats)
- for cleaning
- for personnel hygiene

- d. in personnel hygiene equipment such as hand wash units, apron washes or sterilisers;
and
- e. for any other activity wherein water comes into direct or indirect contact with any product.

[HC Spec 8]

5.2.2 Summary of requirements for water from different sources

Source	Requirements
Town supply or other independent supply with no additional treatment ¹ by operator	<p>Management of reticulation system – see section 5.2.3.1</p> <p>Procedures for non-complying water – see section 5.2.3.2</p> <p>Handling and disposition of contaminated materials – see section 5.2.3.3</p>
Town supply or other independent supply with additional treatment ¹ by operator	<p>Management of reticulation system – see section 5.2.3.1</p> <p>Procedures for non-complying water – see section 5.2.3.2</p> <p>Handling and disposition of contaminated materials – see section 5.2.3.3</p> <p>Water management plan, including water sampling and testing – see section 5.2.4</p>
Operator's own supply (e.g. water sourced from a bore, river, stream, roof)	<p>Management of reticulation system – see section 5.2.3.1</p> <p>Procedures for non-complying water – see section 5.2.3.2</p> <p>Handling and disposition of contaminated materials – see section 5.2.3.3</p> <p>Water management plan – see section 5.2.5.1</p> <p>Water sampling and testing – see section 5.2.5.2</p> <p>Assessment² and reassessment of water supply status – see sections 5.2.5.1 and 5.2.5.3, and Schedule 1</p>

1. Examples of additional treatment are chlorination, filtration, boiling, ultraviolet radiation and reverse osmosis.

2. Assessment based on the completed Water Supply Assessment Checklist from Schedule 1 of the current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice.

5.2.3 Requirements for water from any source

The requirements given under this section apply to water from an independent supplier (e.g. council or town supply) and water supplied by the operator for their own use (e.g. roof water, river water, bore water).

An operator who uses town supply water without any additional treatment only needs to comply with the requirements given in this section 5.2.3.

5.2.3.1 Management of reticulation system (i.e. reticulation management plan) **[HC Spec 11]**

- a. The water reticulation system within the premises must be designed, installed and operated in a manner that prevents:
 - cross connections between potable and non-potable water
 - stagnant water (i.e. no dead ends and unused pipes); and
 - back flow that may cause contamination of the water supply.
- b. Water pipes, storage tanks and other parts of the reticulation system must be maintained in good condition.

The operator should ensure that any treatment applied for the maintenance of the reticulation system (e.g. periodic super chlorination) does not adversely affect the quality of the water.

- c. The reticulation system must be flushed (i.e. taps are opened at point-of-use to allow a significant flow of water to occur) when water is not used for an extended period, and after any repairs to the system, to ensure that stagnant water, rust, scale or other material is flushed out of the system.
- d. The operator must periodically check compliance against the reticulation management plan, and records of these checks must be kept.

Town supply water without any additional treatment is not required to be tested. However, it is recommended that operators periodically (e.g. every 6 months) have their water tested for the relevant parameters given in Table 1.

5.2.3.2 Procedures for non-complying water

All operations requiring the use of potable water must cease until the problem is rectified when:

- a. the independent supplier (e.g. local council) advises the operator that the water is not fit for drinking without additional treatment, or the operator has reason to believe that the water is not fit for use, and the operator has no other means described in the FSP or RMP to ensure the water is potable at the point of use; or

- b. if water used is supplied by the operator, and the operator fails to comply with any of the requirements of the water management plan (including corrective actions) and has no other means described in the FSP or RMP to ensure the water meets the original standard at the point of use. **[HC Spec 14]**

5.2.3.3 Handling and disposition of contaminated products

- a. if contamination with non-potable water occurs, the following actions must be carried out:
- affected product must not be used for human consumption, unless assessment by a suitably skilled person indicates that an alternative action (e.g. reprocessing) will render the product safe and suitable for human consumption
 - affected food contact surfaces must be cleaned and sanitised prior to re-use; and
 - affected packaging materials that cannot be effectively cleaned and sanitised must not be used for packing of any product.
- b. the requirements and procedures for non-complying products given in section 17 must be complied with.

5.2.3.4 Record of the assessment and corrective actions taken must be kept.

5.2.4 Additional requirements for water from an independent supply (e.g. council or town supply) with additional treatment

5.2.4.1 In addition to the requirements given in section 5.2.3 of this document, a water management plan must be documented and implemented for water from an independent supply that is further treated by the operator. **[HC Spec 12]**

Examples of additional treatment are: chlorination, ultraviolet treatment, heating or filtration.

5.2.4.2 The water management plan must include:

- a. information on any additional treatments (including type of treatment, operating parameters, procedures for control, monitoring/testing, acceptable limits)

- b. a water sampling and testing programme for monitoring the effectiveness of the specific water treatment applied (frequency as indicated in Table 2 or as necessary for the effective monitoring of any specific water treatment applied); and
- c. corrective action procedures for instances when the water source is found to be unsatisfactory based on the results of any test done.

The operator should obtain information from the supplier of the particular treatment method or equipment regarding the control and monitoring procedures (e.g. the types and frequency of water testing necessary to confirm the effectiveness of the treatment) to ensure the treatment's effectiveness and prevent it from adversely affecting the safety or quality of the water (e.g. clogging of filters).

5.2.5 Additional requirements for water supplied by the operator for their own use (e.g. water sourced from a bore, stream, river or roof)

5.2.5.1 Water management plan

In addition to the requirements given in sections 5.2.3 and 5.2.4 of this document, a water management plan must be documented and implemented for water that is supplied by the operator for their own use. It must include:

- a. an initial assessment of the water supply status by the operator by completing the *Water Supply Assessment Checklist* given in Schedule 1, part 2 of the current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice; and
- b. a documented water management plan, if required. The checklist provides a simple way of documenting the water management plan.

The *Water Supply Assessment Checklist* is used to determine whether the water source is secure or satisfactory, and if additional treatment and/or other corrective action must be applied by the operator.

Guidance on ways to keep roof water safe is provided in *Water Collection Tanks and Safe Household Water*, Ministry of Health, August 1999 (code 10148). Guidance on protecting bore and well water is provided in *Secure Ground Water (Bores and Wells) For Safe Household Water*, Ministry of Health, March 2000 (code 1129). Both documents are available from www.moh.govt.nz under the section on Information for the Public.

For more information on water safety and tank installation, *Household Water Supplies* (code 4602)

is available from the local public health service or local authority (council).

If you are concerned about your water supply, discuss with your NZFSA verifier ; or contact a Health Protection Officer at your local public health service or an Environment Health Officer at your local council. They will be able to recommend a local water testing laboratory.

5.2.5.2 Water sampling and testing

Operators with a water source which has been assessed as “secure” based on the *Water Supply Assessment Checklist* are not required to test their water after the initial testing which confirms compliance with Table 1. All other water sources are subject to ongoing testing according to the frequency given in Table 2.

- a. Potable water at the point of use must meet the criteria set out in Table 1. The minimum testing frequency required is given in Table 2.
- b. Microbiological testing must be performed by or under the supervision of a recognised signatory of a LAS (Laboratory Accredited Scheme) laboratory or an ISO/IEC 17025 accredited laboratory with the required tests in the laboratory’s scope of. A [list of LAS approved laboratories](#), including authorised representatives & general categories, is available on the NZFSA Animal Products web site under “Registers & Lists”.
- c. Water samplers must be trained by or receive instruction on how to correctly sample water from the laboratory selected.
- d. Chlorine, pH and turbidity measurements must be performed using documented methodologies (including calibration procedures) and/or calibrated equipment by a person who has the appropriate training and/or experience on the particular test.

Table 1: Quality of Potable Water

Measurement	Criteria
<i>E. coli</i> or faecal coliforms	Must not be detectable in any 100 ml sample
Chlorine (when chlorinated)	Not less than 0.2mg/l (ppm) free available chlorine with a minimum of 20 minutes contact time
pH (when chlorinated)	6.5 to 8
Turbidity	Should not routinely exceed 1 NTU, must not exceed 5 NTU

Table 2: Frequency of Testing

Daily water use	Microbiological testing	Turbidity testing	pH testing (for chlorinated water)	Chlorine testing (for chlorinated water)
< 2000 m ³ /day	1 every month	1 every month	1 every month	Daily
2000- 10,000 m ³ /day	1 every 2 weeks	1 every 2 weeks	1 every 2 weeks	Daily
> 10,000 m ³ /day	1 every week	1 every week	1 every week	Daily

5.2.5.3 Reassessment of the status of operator supplied water

The potable water supply must be reassessed by operators who supply their own water by completing the *Water Supply Assessment Checklist* at least once every 3 years and within the time specified as follows:

- in the case of a new source of water being used (that is, the source changes or a new source is added), the checklist is completed prior to use of the water; and
- in the case of any changes to the environment on or around the water source that may affect the water quality, the checklist is completed within 1 month.

5.3 Monitoring Procedures

Compliance with the documented procedures must be regularly checked by the responsible person (e.g. daily checks for chlorine level in chlorinated water).

5.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the programme is found to be ineffective. The corrective actions must address the:

- a. restoration of control
- b. identification and disposition of affected product; and
- c. prevention of the recurrence of the loss of control.

5.5 Records

Records of the following must be kept:

- a. completed *Water Supply Assessment Checklist* (for operator supplied water)
- b. reticulation management plan
- c. water management plan, if applicable
- d. water testing results, if applicable
- e. training records; and
- f. monitoring, corrective action and verification records.

6 Control of Chemicals (Non-Food)

Amendment 0

February 2010

6.1 Scope

This section discusses the requirements and procedures for ensuring that chemicals are stored, handled, and used in a manner that minimises contamination of food, packaging, equipment, and the processing environment.

Chemicals include substances used for cleaning, sanitation, pest control, and the repair and maintenance of equipment. Chemicals are referred to as “approved maintenance compounds” under the Animal Products Act.

This programme does not apply to food additives, ingredients and processing aids, which are covered in Section 13.

The sources of hazards controlled under this programme are summarised below.

Source	Examples of hazards
Chemicals (e.g. cleaning agents, pesticides, lubricants)	Chemical residues
Chemical containers and dispensing equipment	Chemical residues

6.2 Control Measures

6.2.1 General requirement

6.2.1.1 Chemicals must be stored, handled, and used in a manner that minimises contamination of ingredients, products, packaging, equipment, and the processing environment. **[AP Reg 11(3)]**

6.2.1.2 Only approved maintenance compounds (i.e. from the [Approved Maintenance Compounds \(Non-dairy\) Manual](#)) may be used during processing operations or in the maintenance of processing areas, facilities and equipment. **[HC Spec 21(1)]**

This requirement is mandatory for businesses operating under an RMP, and recommended for those that have an FSP or operate under the Food Hygiene Regulations.

6.2.2 Inventory and labelling

6.2.2.1 A list of chemicals used and held in the premises must be maintained.

6.2.2.2 All containers of chemicals held and used within the premises must be clearly labelled with the name of the chemical. **[HC Spec 21(2)]**

For businesses operating under an RMP, it is mandatory that the chemical name on the label is in the form that it appears in the Approved Maintenance Compounds (Non-dairy) Manual, or current NZFSA letter of approval.

6.2.3 Storage

6.2.3.1 Chemicals must be stored in a designated area (e.g. shelf, cupboard, room) and kept separate from products, ingredients, packaging and other product contact materials.

6.2.3.2 Chemicals must be kept in sealed containers when not in use.

6.2.3.3 Any container or utensil used to measure, store or pour chemicals must be clearly identified (e.g. labelled as 'For Chemicals Only'), and must not be used for any other purpose.

6.2.3.4 Storage areas must be kept clean and tidy.

6.2.4 Use

6.2.4.1 All chemicals must be used according to the directions of the manufacturer and, if applicable, any conditions of the NZFSA approval.

6.2.4.2 Directions for use must be readily available to the user (e.g. given on the label, posted on the wall or in product information data sheets).

6.2.4.3 Chemicals must be handled and used by or under the supervision of suitably skilled persons.

6.2.4.4 Ingredients, products and exposed packaging must be removed from the area or kept protected (e.g. covered) prior to the use of any chemical which may result in their contamination.

6.2.4.5 Equipment and other product contact surfaces must be cleaned by thorough washing after exposure to any chemical, except for no-rinse-type chemicals that have been approved for that purpose.

6.2.5 Disposal of chemical containers

6.2.5.1 Empty chemical containers must be disposed of in a manner that will not contaminate any product or product contact surfaces, and in accordance with manufacturer's instructions.

6.2.5.2 Empty chemical containers must not be re-used for any other purpose within the premises.

6.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme (e.g. weekly checks of chemical storage and labelling; observations of personnel using chemicals).

6.4 Corrective Action Procedures

6.4.1 The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the programme is found to be ineffective. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address the:

- a. restoration of control
- b. identification and disposition of any affected product; and
- c. prevention of the recurrence of the loss of control.

6.4.2 When chemical contamination occurs, the following actions must be carried out:

- a. affected food must be considered unfit for human consumption
- b. affected product contact surfaces must be cleaned and when appropriate, sanitised prior to reuse; and
- c. affected packaging materials that cannot be effectively cleaned and sanitised must not be used for packing of any product.

6.5 Records

Records of the following must be kept:

- a. list of chemicals used and held in the premises
- b. any chemical information sheets provided by the supplier, including instructions for handling and use
- c. training records; and
- d. monitoring, corrective action and verification records.

7 Cleaning and Sanitation

Amendment 0

February 2010

7.1 Scope

This section discusses the requirements and procedures for ensuring that all areas within the premises, facilities and equipment are maintained in a hygienic and sanitary condition.

The sources of hazards controlled under this programme are summarised below.

Source	Examples of hazards
Facilities and equipment	Bacterial pathogens (e.g. <i>Listeria monocytogenes</i> , <i>E. coli</i> spp.)
Waste	Bacterial pathogens (e.g. <i>E. coli</i> spp., <i>Salmonella</i> spp.)
Cleaning chemicals	Chemical residues
Cleaning implements (e.g. mops, cloths)	Bacterial pathogens (e.g. <i>Listeria monocytogenes</i> , <i>E. coli</i> spp)

7.2 Control Measures

7.2.1 Documented cleaning programme

7.2.1.1 The operator must develop and document a cleaning and sanitation programme for processing areas, storage areas, freezers and chillers, equipment, amenities, and external areas of the premises. **[AP Reg 11, Food Act Section 8G]**

7.2.1.2 The programme must include the following information:

- areas/equipment to be cleaned
- procedures and work instructions for all cleaning and sanitising operations, including instructions on how to dismantle and re-assemble equipment

- detergents/sanitisers to be used, their concentration, application method, and contact time required
- frequency of cleaning
- personnel responsible
- methods of monitoring and verifying the effectiveness of the cleaning and sanitation procedures; and
- records of compliance to the programme.

7.2.1.3 The cleaning programme must be appropriate to the type of product and the operation.

Most processing areas will require a wet cleaning routine. Dry cleaning will be more appropriate for areas where dry materials are handled and stored (e.g. dry store room, dry ingredient weighing or batching areas). Other areas will require a combination of both methods, for example, the packing area should be kept dry during operations and therefore should only be dry cleaned during processing, but will require wet cleaning at the end of the production day.

7.2.2 General cleaning procedures

7.2.2.1 Cleaning must be carried out in a manner that prevents the contamination of ingredients, products, equipment and other product contact materials (e.g. packaging material); or previously cleaned areas, facilities or equipment.

7.2.2.2 Workers must be adequately trained on the handling of cleaning chemicals and the implementation of the cleaning programme.

7.2.2.3 The cleaning method must be appropriate to the type of surface to be cleaned, and the type and characteristics of the material to be removed.

7.2.2.4 Cleaning compounds must be used in accordance with section 6.

The selection of the cleaning and sanitising method, and cleaning compound should be based on the:

- a. type of surface (e.g. metal, plastic, tile)
- b. type of contamination (e.g. blood, protein, fat, starch, cooked-on product)
- c. application method
- d. water quality (e.g. hardness)
- e. water temperature (hot water sets blood but melts fat); and
- f. time available for cleaning.

Cleaning can be done using various methods such as manual cleaning (e.g. scrubbing by hand); use of pressure, foam or gel; soaking; and in-place cleaning. Operators should consult reputable suppliers of cleaning chemicals on the most suitable detergent and application methods.

Sanitising can be done using:

- a. steam - all surfaces should be heated for a specified time and temperature
- b. hot water - for a specified time and temperature, usually for knives, gloves and small utensils; or
- c. chemicals - application of approved sanitisers (e.g. halogens, quaternary ammonium compounds) at the concentration and for the time recommended by the manufacturer.

7.2.3 Pre-operational check

7.2.3.1 Pre-operational checks of facilities and equipment must be conducted by a suitably skilled person to ensure that operations only begin after sanitation requirements have been met.

The person responsible for doing pre-operational checks should have good knowledge of the cleaning methods and the criteria for assessing cleanliness. He/she should be able to assess the potential effect of particular defects on product safety and determine appropriate corrective actions for any non-compliance.

Visual inspection of cleaned surfaces is the simplest and quickest way of assessing cleanliness. In addition to visual inspection, other methods may also be applied (e.g. ATP method, rapid microbiological test methods).

Defects observed during pre-operational checks should be categorised or ranked based on their potential effect on product contamination and product safety. This assists in the setting of appropriate corrective actions. It is common practice in the meat industry to categorise defects as:

- critical - a defect that will result in direct contamination of a product (e.g. dirty food contact surfaces; condensation from an overhead structure directly above exposed products or product contact surfaces)
- major - a defect that may result in direct or indirect contamination of a product (e.g. dirty/contaminated surfaces which are handled by workers which may lead to cross-contamination, e.g. residue build-up on door handles or equipment knobs; dirty surfaces that are in close proximity to a product contact surface).
- minor - a defect which is unlikely to result in contamination of a product (e.g. dirty surfaces that are not near a product contact surface and are unlikely to come into contact with exposed product, product contact surfaces, packaging or workers, e.g. an isolated speck of product residue on a table leg, wall or drain).

Defect scores are allotted to each category, with the scores reflecting the severity of the defect, and a limit for total defect scores is established. The daily total defect scores achieved can then be tabulated or graphed so that trends and repetitive failures can easily be detected.

7.2.3.2 Observations made during pre-operational inspection and corrective actions for any deficiencies identified must be documented in an appropriate checksheet or record form.

7.2.3.3 If immediate corrective action is required (e.g. for critical and major defects), the corrected item must be rechecked before operation begins, and the outcome of this recheck must also be included in the record.

7.2.3.4 The operator must investigate and correct the causes of repetitive failures of the cleaning and sanitation programme.

7.2.4 Wet cleaning of processing areas and equipment

7.2.4.1 Processing areas and equipment (except dry areas/equipment) must be wet cleaned using effective cleaning and sanitising procedures.

Cleaning should commence without delay after finishing the day's operation, because the more the dirt ages, the more difficult it is to remove from equipment surfaces. However, cleaning of facilities and equipment which are no longer in use should not be started if there are still exposed products and packaging within the area and there is potential for them to be contaminated from splashes and aerosols created during cleaning.

A basic cleaning and sanitising system includes the following steps:

- a. removal of gross contamination (e.g. removing scraps)
- b. rinsing the area with cold or warm water ($\leq 60^{\circ}\text{C}$ to prevent coagulation of protein, which makes it extremely difficult to remove)
- c. applying a detergent solution or foam and leaving it on all surfaces for the time specified by the manufacturer
- d. scrubbing surfaces to loosen and remove dirt
- e. rinsing detergent solution off with potable water, and draining
- f. if scale has to be removed, an acid detergent is used at this stage, followed by rinsing and draining
- g. applying a chemical sanitiser and leaving it on all surfaces for the time specified by the manufacturer
- h. rinsing off the chemical sanitiser with potable water and draining (not needed if a no-rinse sanitiser is used); and
- i. allowing surfaces and equipment to dry.

7.2.4.2 Potable water must be used for wet cleaning of facilities and equipment.

7.2.4.3 Ingredients, products, packaging material and other materials that may be contaminated during cleaning must be removed from the area and stored in appropriate locations, or they must be protected by covers, before wet cleaning is started.

7.2.4.4 Cleaning water and steam must be contained within the immediate area that is being wet cleaned.

7.2.4.5 Floors must be cleaned by hosing or other effective means daily. Water must be drained or removed completely.

Only low to medium pressure hosing should be used. High pressure hosing causes splashing, and can create aerosols capable of carrying contaminants and microorganisms for considerable distances.

Any pooling of water should be swept into the drain as soon as possible.

7.2.4.6 Drains must be kept clear during production without any obstruction to the continuous flow of waste water. Drain traps should be cleared regularly to prevent blockage causing back-up further up the line.

7.2.4.7 Drains, including covers and screens, must be cleaned and sanitised daily.

The cleaning of drains is part of routine cleaning at the end of the day's operation. Drains, particularly in cooked or RTE areas, should also undergo more intensive cleaning at regular frequencies (e.g. weekly) using chemicals suitable for removing any build-up of residues and microorganisms.

7.2.4.8 Walls and doors must be cleaned daily by hosing or other effective means to remove any visible contamination.

More intensive cleaning (e.g. foaming and scrubbing) at regular frequency (e.g. weekly) should be done to remove any build-up of residues and microorganisms.

Walls adjacent to and ceilings above, thermal processing equipment can develop stains which cannot be removed by regular cleaning. Stains may make it difficult to assess the visual cleanliness of the surface, so other means of demonstrating the effectiveness of cleaning may be necessary (e.g. microbiological testing of surfaces). Surfaces which become excessively stained should be replaced. Ways of effective containment or venting of heat or steam from thermal processing equipment should be considered to minimise staining of adjacent walls and ceilings.

7.2.4.9 Ceilings and overhead structures in processing areas must be checked regularly and cleaned at an appropriate frequency.

Any overhead structure which is a constant source of contamination should be regarded as a product contact surface and be cleaned at a frequency required for product contact surfaces. Condensation on overhead structures directly above product is regarded as a critical defect, and should be removed before processing can continue. Products should be removed from the area or be protected while the problem is being fixed, and when necessary, equipment and product contact surfaces should be cleaned and sanitised before processing is restarted.

7.2.4.10 Product contact surfaces, including processing and conveying equipment, must be cleaned:

- at least at the end of each working day
- whenever surfaces become contaminated or come into contact with waste; and
- whenever necessary to prevent cross-contamination between:
 - raw and RTE products
 - products of different allergenic status; and
 - products with specific claims (e.g. organic).

1. Processing equipment that must be cleaned daily include: grinders, injectors, bowl choppers and mixers, fillers, slicers, dicers, water cookers, water cooling tanks, and packaging equipment.
2. Water thawing tanks should be emptied and cleaned after each thawing cycle.
3. Tumblers and massagers should be cleaned daily, or after each tumbling/massaging cycle, if the cycle takes more than 24 hours.
4. Equipment or machinery (e.g. grinders) which is used intermittently during the day, and/or located in non-refrigerated rooms, may need to be cleaned more frequently to minimise the build-up of microorganisms on the equipment which may contaminate subsequent batches of product.

Equipment which has been used but is temporarily idle should be cleaned before re-use if the delay is in excess of 4 hours. More frequent cleaning may be necessary if the equipment is located in a non-refrigerated room.

5. The following areas of benches, tables, trolleys, racks and frames should be given

particular attention during cleaning:

- a. underside surfaces
 - b. legs
 - c. wheels and rollers; and
 - d. points where dirt and food scraps can accumulate.
6. Conveyors are usually difficult to clean because of crevices which are part of the design. Conveyors should be pre-cleaned to remove build-up of dirt and food scraps, followed by low pressure rinsing and application of foam detergent/sanitiser. Particular attention should be given to the following areas during cleaning:
- a. underside of belts
 - b. under drive motor covers
 - c. supports for plastic and fibre belts
 - d. hollow rollers; and
 - e. points where dirt and food scraps can accumulate.

7.2.4.11 Cleaning procedures for smoke houses and dry ovens, appropriate to their type and operation, must be developed and implemented to maintain them in a hygienic condition.

Scraps and gross contamination should be removed from ovens, smoke houses, oven trays and trolleys daily. All surfaces of this equipment, including smoke house drains, should be cleaned and sanitised weekly.

7.2.4.12 Worn or frayed conveyors and belts must be replaced because they are impossible to clean effectively.

7.2.4.13 Equipment and machinery that require disassembly for effective cleaning must be disassembled in accordance with manufacturer's instructions and to the extent necessary to ensure cleaning and sanitising of all parts and surfaces, including hard-to-reach areas where product residue can build up.

Cleaned equipment parts should be placed on clean tables, trolleys or shelves while drying to prevent their recontamination.

7.2.4.14 When footbaths are used, they must be maintained properly with effective concentrations of sanitiser so that they do not become a source of contamination.

An automated foam disinfectant spray may be used on the floor where people, carts, trolleys, etc. enter the area.

7.2.5 Dry cleaning of dry processing and storage areas

7.2.5.1 Dry processing areas and stores must be kept dry, and be cleaned regularly by appropriate dry cleaning methods.

Dry cleaning methods include brushing, scraping, sweeping, vacuuming, and blowing with compressed air. The cleaning method should minimise the creation of dust and air-borne contamination.

7.2.5.2 When vacuum cleaning systems are used:

- a. filters must be changed regularly
- b. dust bags must be removed and replaced in a way that will not result in the contamination of any product or product contact surface; and
- c. portable vacuum cleaners must not be dismantled for cleaning in a food area.

7.2.5.3 Products, dry ingredients, packaging and other materials must be stacked and stored in a tidy manner. Adequate space must be available to allow effective cleaning in storage areas.

Products, ingredients, packaging and other materials should be stored off the floor (e.g. on clean pallets).

7.2.5.4 Spills (e.g. dry ingredients) must be cleaned up immediately and disposed of appropriately.

7.2.6 Cleaning of post- processing areas and equipment

Post-processing or RTE areas include the processing, slicing and packing areas where exposed cooked or RTE products are handled, packed and stored. More stringent controls, including the effective implementation of cleaning and sanitation procedures, are required in these areas to prevent or minimise post-process contamination of products. Controls should be particularly targeted to prevent *Listeria* contamination of products, product contact surfaces and the processing environment.

7.2.6.1 Product contact and non-product contact surfaces, utensils, equipment, fixtures and fittings must be thoroughly cleaned and sanitised:

- a. after raw products have been handled or processed
- b. between processing of raw and RTE products; and
- c. at the end of each day.

When slicing and packing RTE products, the slicer, work tables and other food contact surfaces should be sprayed with a no-rinse sanitiser before starting slicing at the start of each day and at regular intervals during the day (e.g. before breaks).

7.2.6.2 Detergents and equipment sanitisers that have good activity against *L. monocytogenes* must be used for cleaning and sanitising.

7.2.6.3 Wet cleaning (e.g. hosing) of facilities and equipment during processing must not be done as this can cause splashing and create aerosols which may contaminate products and product contact surfaces.

7.2.6.4 The packaging room must be wet cleaned at the end of each day's operation.

7.2.6.5 The ceiling must be cleaned regularly to prevent contamination of products from condensation and other contaminants.

7.2.6.6 Condensation on the ceiling and any overhead structures due to the use of hot water or steam during cleaning must be removed before the start of operation.

7.2.6.7 Cleaning equipment and materials must be effectively sanitised regularly so that they do not become a source of contamination.

Different cleaning equipment and materials should be used for cleaning processing equipment and facilities in raw and RTE processing areas.

7.2.6.8 When footbaths are used, they must be maintained properly with effective concentrations of sanitiser so that they do not become a source of contamination.

An automated foam disinfectant spray may be used on the floor where people, carts, trolleys, etc. enter the area.

7.2.7 Cleaning of chillers and blast freezers

7.2.7.1 Chillers and freezers must be maintained in a tidy condition.

7.2.7.2 Chillers and freezers must be emptied, and cleaned and sanitised regularly.

The frequency of cleaning chillers is dependent on their use and the type of product held in them. Chillers used for cooling of cooked products or holding of unpackaged RTE products should be cleaned and sanitised more often (e.g. weekly) than storage chillers which hold packed products. The frequency of cleaning fans, evaporators and/or fumigating the room should be determined according to the type of product held in the room and any microbiological results from monitoring the air. In the absence of microbiological monitoring, the fans and evaporators should be cleaned at least once every three months and whenever any substantial maintenance work is carried out in the chiller or to its refrigeration equipment. Freezers used for tempering or freezing products (i.e. blast freezers - not storage freezers) should be emptied and cleaned periodically (e.g. once every six months).

7.2.8 Cleaning of air conditioning and refrigeration units

7.2.8.1 The cleaning coils, fans, drip trays, drainage pipes, and vents of air conditioning units must be cleaned regularly.

7.2.8.2 Filters of the cold air ducting system must be cleaned or replaced regularly.

The frequency of cleaning should take into consideration the nature of the operation and the type of product being handled within the area where the air conditioning or refrigeration unit is located. For example, for raw product areas, monthly cleaning may be sufficient, but for RTE areas cleaning may need to be done more frequently. The effectiveness of the cleaning procedures and the adequacy of the cleaning frequency can be verified by the environmental monitoring programme (refer to section 18.4).

The ducts which transport cold air from the refrigeration unit out to vents cannot be effectively cleaned and sanitised by the usual manual methods. Sanitising is best done using a fogging machine. If possible, the fogger should be placed in the ducting system and the sanitiser allowed to be blown through the overheads and down into the room.

7.2.9 Cleaning of amenities

Amenities must be cleaned at least daily and maintained in a hygienic condition throughout the day.

7.2.10 Maintenance and storage of cleaning equipment

7.2.10.1 Cleaning implements and equipment must be maintained in a hygienic condition and must not introduce any hazard or foreign object to any ingredient, product, packaging or product contact surface.

Porous and absorbent items (e.g. rags, wooden handled tools) should not be used in processing areas as they are difficult to clean and they harbour bacteria.

Steel wool should not be used for cleaning in processing areas.

Cleaning implements and equipment should be sanitised daily (e.g. soaked in sanitiser solution), and maintained in a good state of repair.

7.2.10.2 Different cleaning implements (e.g. brushes) must be used for product and non-product surfaces (they can be differentiated by colour-coding).

7.2.10.3 Hoses must be stored off the ground on reels or racks when not in use.

7.2.10.4 Cleaning equipment must be stored in a hygienic manner in designated facilities away from areas where unpackaged products are handled, processed or stored.

7.2.11 Removal of waste materials

7.2.11.1 Waste must be:

- a. collected in clearly identified waste containers
- b. kept under controlled conditions to ensure that it will not be mistakenly or fraudulently released as suitable for processing or fit for human consumption; and
- c. be disposed of in a manner that ensures that it will not become a source of contamination to other animal material or animal product. **[HC Spec 20]**

7.2.11.2 Waste must be removed from processing areas at least daily.

Waste should not be allowed to accumulate in processing areas. If necessary, waste should be periodically removed from processing areas during the working day.

7.2.11.3 Waste bins in processing areas that are taken to areas of lower hygienic status must be cleaned and sanitised before being returned to processing areas.

7.2.11.4 Outside waste bins must be covered, maintained in a tidy condition, and collected regularly so that they do not attract pests and create objectionable odours.

7.3 Monitoring Procedures

7.3.1 The operator or responsible person must regularly check for compliance to documented procedures and the effectiveness of the cleaning and sanitation programme. The frequency of monitoring must be sufficient to give confidence that the cleaning and sanitation programme is operating effectively.

The general criteria for clean product contact surfaces and facilities are:

- a. no visible contamination

- b. work surfaces should not feel greasy when rubbed with fingers
- c. a clean, white tissue should not be discoloured when rubbed over the surface of cleaned stainless steel (this does not apply to galvanised iron or aluminium)
- d. objectionable smells should not be noticeable
- e. cleaned surfaces should not show signs of excessive water break when wetted
- f. cleaned and sanitised surfaces should have a microbial population below a set maximum number, this number depending on the product, its stage of processing, and its required storage life.

It is difficult to suggest what is an acceptable number of microorganisms remaining on a surface after cleaning and sanitising as this is dependent on the food product, process, 'risk area' and degree of cleaning and sanitation undertaken. Microbiological guidelines for surfaces after cleaning in food premises vary widely. Various aerobic plate count (APC) levels have been suggested including $<2.5 \text{ cfu/cm}^2$ (Winfield and Campbell, 1990; Griffith, 2005), $<10 \text{ cfu/cm}^2$ (Brown and Baird Parker, 1982; EC Decision 2001/471/EC), and $<100 \text{ cfu/cm}^2$ (Holah, 2003).

It may be best to set internal standards as a measurement of what can be achieved by a given cleaning and sanitation programme. A typical approach suggested by Holah (2003) would be to assess the level of microorganisms on a surface after a series of 10 or so carefully controlled sanitation programmes in which detergent and disinfectant concentrations are correct, contact times are adhered to, water temperatures are checked, pressure hoses are set to specified pressures, sanitation schedules are followed, etc. The mean result will provide an achievable standard (or standards if specific areas differ significantly in their cleanability) which can be immediately used and can be reviewed as subsequent data points are obtained in the future. A review of the standard would be required if either the food product, process or the sanitation programme were changed.

As an example of microbiological levels achieved in commercial operations, APC_{30} for clean product contact surfaces in raw poultry processing operations in New Zealand is typically $<100 \text{ cfu/cm}^2$. Setting a lower maximum limit for surfaces that come into direct contact of cooked or RTE products is recommended.

In addition to determining APC levels on cleaned surfaces, testing for specific pathogens in the processing environment relevant to the product (e.g. *Listeria monocytogenes* in RTE meat products) should also be done to verify the effectiveness of the cleaning and sanitation programme (refer to section 18.4 for information on environmental testing).

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7.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the cleaning and sanitation programme is found to be ineffective. The corrective actions must address the:

- a. restoration of control (recleaning, increase in monitoring)
- b. identification and disposition of affected product; and
- c. prevention of the recurrence of the loss of control (e.g. retraining of workers, changing procedures).

7.5 Records

Records of the following must be kept:

- a. cleaning records
- b. pre-operational checksheets
- c. list of cleaning chemicals
- d. microbiological test results
- e. training records; and
- f. monitoring, corrective action and verification records.

8 Pest Control

Amendment 0

February 2010

8.1 Scope

This section discusses the requirements and procedures for the effective control of pests. Pests include rodents, birds, insects, dogs and cats.

The sources of hazards controlled by this programme are summarised below:

Source	Examples of hazards
Insects, rodents, birds, cats and dogs and other pests	Bacterial pathogens (e.g. <i>Salmonella</i> spp., <i>Campylobacter</i> spp., <i>E.coli</i> spp., <i>Listeria monocytogenes</i>)
Pesticides	Chemical residues

8.2 Control Measures

8.2.1 Pest control programme

8.2.1.1 The operator must document and implement a pest control programme to minimise the exposure of ingredients, products, packaging, equipment, and the processing environment to hazards associated with pests. **[AP Reg 11(2) and (3)]**

8.2.1.2 The programme must include the following information:

- the identity of the person or agency responsible for the implementation of the programme
- procedures for the control of pests, and the monitoring and verification of pest control activities
- corrective action procedures that are to be applied in the event of loss of control; and
- records to be kept.

The operator may employ a pest control person or agency to develop and implement a pest control system (e.g. set up traps, spraying programme) and monitor the premises. The operator is responsible for ensuring that the pest control person or agency is competent to perform the task, and complies with the relevant requirements of this programme.

8.2.2 Prevention of infestation and access of pests

8.2.2.1 Premises, facilities, equipment and essential services must be designed, constructed, located and operated in a manner that minimises the exposure of products to hazards and other contaminants. **[AP Reg 10]**

8.2.2.2 Buildings and storage facilities (including water storage tanks) must be kept in good repair and condition to prevent pest access and to eliminate potential breeding sites.

8.2.2.3 Holes, drains and other places where pests are likely to gain access must be sealed, or provided with screens or similar materials that prevent the entry of pests.

8.2.2.4 External doors that are not screened must be kept closed at all times when not in use.

8.2.2.5 Internal and external areas of the premises must be kept clean and tidy. The external environment must be checked regularly and kept free of any food source and breeding sites (e.g. long grass, bird's nest, food waste).

Areas that are likely to attract flies and other insects should be sprayed, as necessary.

8.2.2.6 Dogs, cats and other mammalian pests must not be allowed access into the premises (i.e. buildings and external areas within the scope of an FSP or the boundaries of an RMP).

8.2.2.7 Waste materials must be kept in covered pest-proof containers, and regularly collected and disposed of.

8.2.3 Use of pesticides

8.2.3.1 Pest control chemicals (rodenticides and insecticides) must be handled, used and stored according to the procedures given in section 6.

8.2.3.2 Pest control chemicals must be used by suitably skilled personnel and in accordance with the directions of the manufacturer and, if applicable, any conditions of the NZFSA approval.

8.2.3.3 Insecticides that have any residual activity or are dispensed as continuous aerosols must not be used in any processing or storage area in a manner that could cause the contamination of products or product contact surfaces.

8.2.3.4 Products and exposed packaging must be removed from the area or kept protected (e.g. covered) prior to the use of pest control chemicals which may contaminate them.

8.2.3.5 Equipment and other product contact surfaces must be cleaned by thorough washing after exposure to any pest control chemical (i.e. after spraying with insecticide is completed).

8.2.4 Use of pest traps

8.2.4.1 Pest traps (including rodent boxes, bait stations and electric insect traps) must be located where they do not present a risk of contamination to any product.

8.2.4.2 Bait stations must not be located inside any processing area.

The location of pest traps should be identified on a site or building plan, or other suitable record.

8.2.4.3 Rodenticides must be used only in enclosed bait stations.

8.2.4.4 Bait stations must be checked regularly for the following:

- a. correct location as indicated in the plan or record, and presence of bait. The box should be cleaned and rebaited with an approved rodent bait, as necessary
- b. evidence of pest activity (e.g. nibbled bait, bait missing, droppings); and
- c. boxes are in good working condition and identification is easily legible.

8.2.4.5 Insect traps, which include ultra-violet lamps, pheromone traps and any form of attractant device, must:

- a. be constructed in a manner that facilitates the capture and removal of insects (e.g. by providing a suitable drawer, tray or adhesive mat for catching and securing insects)
- b. not cause any air-borne contamination; and
- c. not be located where insects may fall on to product, packaging, or product contact surfaces.

8.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

The frequency for monitoring of traps should be determined relative to the type of trap and the degree of pest activity noted. Increased monitoring and appropriate corrective actions should be implemented when increased rodent activity is observed.

8.4 Corrective Action Procedures

8.4.1 The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the pest control programme is found to be ineffective. The corrective actions must address the:

- a. restoration of control
- b. identification and disposition of affected product; and

- c. prevention of the recurrence of the loss of control.

8.4.2 When there is evidence of contamination from pests, the following actions must be carried out:

- a. affected product must be considered unfit for human consumption
- b. affected product contact surfaces must be cleaned and sanitised prior to reuse; and
- c. affected packaging materials that cannot be effectively cleaned and sanitised must not be used for packing of any product.

8.5 Records

Records of the following must be kept:

- a. details of contracted pest control person or agency, if applicable
- b. location of bait stations or other traps (e.g. site plan)
- c. list of pest control chemicals used
- d. name, amount and point of use of any pest control chemicals used
- e. training records; and
- f. monitoring, corrective action and verification records.

9 Repairs and Maintenance

Amendment 0

February 2010

9.1 Scope

This section discusses the requirements and controls for the repairs and maintenance of buildings, facilities and equipment to ensure that they are maintained in a good working and hygienic condition.

The sources of hazards controlled under this programme is summarised in the table below:

Source	Example of hazards
Building, machinery, processing equipment	Bacterial pathogens (e.g. <i>Listeria monocytogenes</i> , <i>Salmonella</i> spp.) Chemical residues (e.g. lubricants) Metal pieces (e.g. bolts, screws, metal filings)
Maintenance personnel	Bacterial pathogens (e.g. <i>Salmonella</i> spp, <i>E. coli</i> spp., <i>Staphylococcus aureus</i>), Hepatitis A virus Metal or plastic pieces from personal items (e.g. jewellery, pens)
Maintenance tools, equipment, chemicals	Bacterial pathogens Chemical residues from maintenance compounds Parts of maintenance tools/equipment (e.g. metal pieces, plastic)

9.2 Control Measures

9.2.1 Documented programme

The operator must document and implement a repairs and maintenance programme for the premises, facilities and equipment to ensure that they are maintained in good working and hygienic condition. **[AP Reg 11 (1); Food Act Section 8G]**

The repairs and maintenance programme should include the following information:

- a. identity of the responsible person
- b. procedures for routine or programmed maintenance (i.e. preventive maintenance), including monitoring activities and their frequencies
- c. procedures for facilities and equipment breakdowns
- d. corrective actions
- e. procedures for inspection of any completed repairs or maintenance work; and
- f. records to be kept.

For small operations with simple processes, a checklist for repairs and maintenance, rather than a full documented programme, may be sufficient.

9.2.2 Hygienic practices

9.2.2.1 Repairs and maintenance work must be done in a manner that minimises contamination of ingredients, products, packaging, equipment and the processing environment.

9.2.2.2 Prior to any alteration, repair or maintenance work on buildings, facilities or equipment, a suitably skilled person must assess its potential for contaminating ingredients, products, packaging, equipment and the processing environment; and put in place appropriate controls to minimise their exposure to contamination.

When making the assessment, the suitably skilled person must take the following into consideration:

- a. the type and extent of the work (e.g. is it a major or minor repair, could it cause air-borne contamination or splashes)
- b. the potential for exposure of products, packaging, or equipment to contamination; and controls for protecting them
- c. the type of food and processing area affected (e.g. RTE area versus raw processing area)
- d. the movement of maintenance workers; and

- e. the maintenance equipment, tools and materials to be used (i.e. could they be a source of contamination).

9.2.2.3 Major alterations on the premises and facilities, and routine or programmed maintenance of equipment that may affect hygienic operations or cause contamination of ingredients, products, packaging and the processing environment must not be done during processing.

9.2.2.4 Corrective maintenance or minor repairs may be done during processing only when they can be carried out in a hygienic manner (i.e. ingredients, products, packaging, and other equipment are protected from contamination).

Note that normal in-process adjustments to machinery or equipment (e.g. changing of mincer blades) are not considered to be maintenance activities. In these circumstances, care is still needed to ensure that the products are protected from contamination and appropriate cleaning and sanitation occurs afterwards.

The person in charge of processing should be notified prior to any repair or maintenance work being done during processing.

9.2.2.5 All maintenance personnel must comply with the requirements for personnel hygiene appropriate to the area they are operating in, including access restrictions, hygienic practices, and protective clothing requirements.

9.2.2.6 Chemicals used during repairs and maintenance must be used in accordance with any specified conditions of their approval and the manufacturer's instructions.

RMP operators may only use approved maintenance compounds when carrying out repairs and maintenance activities. Refer to section 6.

9.2.2.7 Tools used for repairs and maintenance must not come in contact with, or cause the contamination of any ingredient, product, or packaging material.

Tools should be cleaned, and, whenever possible, be sanitised before being taken into processing areas.

Tools should be immediately removed from the area after maintenance or repair work is completed. Tools should be stored in a designated place (if owned by the operator), and be maintained in a hygienic condition.

When practical, it is recommended that operators have maintenance tools dedicated for use in specific areas of their operation to avoid cross-contamination.

9.2.2.8 After completion of any repair or maintenance work and prior to starting processing, the responsible person must check that:

- a. the facility or equipment has been repaired to a satisfactory working condition
- b. all maintenance tools and pieces of equipment (e.g. nuts, bolts) are removed from the area to prevent contamination of products; and
- c. the affected processing area and equipment are cleaned and sanitised, as needed.

9.2.2.9 Records of the checks must be kept.

9.2.3 Equipment breakdown during processing

9.2.3.1 When equipment breaks down during processing, and repairs cannot be carried out in a hygienic manner:

- a. the defective equipment must be removed from the processing environment to be repaired somewhere else while production continues; or
- b. products, ingredients and packaging that could potentially be contaminated while repairs are made must be protected from contamination or removed from the affected area prior to making the repairs.

9.2.3.2 A suitably skilled person must assess the fitness for intended purpose of any products affected by an equipment breakdown and determine their disposition.

9.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

Examples of monitoring activities are: daily pre-operational check of certain equipment; checks after completion of every repair work; and monthly preventive maintenance checks of facilities and equipment.

9.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance occurs. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address:

- a. how the problem will be fixed (e.g. repair or replace equipment)
- b. the identification and disposition of any affected product; and
- c. the prevention of the recurrence of the problem (e.g. change design of equipment or facility; retraining of workers using the particular equipment).

9.5 Records

Records of the following must be kept:

- a. repairs and maintenance work sheets
- b. pre-operational check sheets
- c. training records; and
- d. monitoring, corrective action and verification records.

10 Calibration of Measuring Devices

Amendment 0

February 2010

10.1 Scope

This section discusses the requirements and controls for the calibration of measuring devices to ensure they provide accurate measurements. Measuring devices include: temperature measuring/recording devices, timing devices, scales, temperature control units, metal detectors, water activity meters, pH meters and other specialised control instruments.

10.2 Control Measures

10.2.1 Measuring devices (whether stand-alone or forming part of a piece of equipment) must:

- a. have the accuracy, precision, and conditions of use appropriate to the task performed
- b. be calibrated against a reference standard showing traceability of calibration to a national or international standard of measurement (where available), or (if no such standard exists) be calibrated on a basis that is documented in, or incorporated by reference into, the FSP or RMP; and
- c. be uniquely identified (e.g. by using serial numbers, indelible tags or other permanent means of identification) to enable traceability of the calibrations and to identify calibration status. **[HC Spec 28 (1)]**

10.2.2 The operator must document a calibration programme that includes:

- a. a list of the measuring devices and their identification marks
- b. the calibration frequency for each measuring device
- c. the calibration method/procedures for each measuring device, taking into consideration the stability of the device, the nature of the measurement, and the manufacturer's instructions **[HC Spec 28 (2)]**

- d. the person or agency who will perform the calibration
- e. how the calibration date and any correction factor will be affixed to the measuring device
- f. the maximum error allowed before corrective action is taken (e.g. $\pm 1\text{g}$, $\pm 1^\circ\text{C}$)
- g. the corrective action to be taken when the measuring device does not meet specification; and
- h. the records to be kept.

Records of all calibration activities should include the:

- a. identification and location of equipment
- b. date
- c. person in charge of calibration
- d. reason for calibration
- e. calibration results; and
- f. calibration corrective action.

10.2.3 Safeguards must be in place to prevent unauthorised adjustments to the calibration of the measuring device, including movement of the device when this may invalidate the calibration. **[HC Spec 28 (3)]**

10.2.4 Reference standards (e.g. reference thermometer or reference weights) must have a current calibration certificate before they can be used. The certificate must be issued by an accredited person or agency.

Aside from a calibration certificate or certificate of accuracy, newly purchased measuring devices should be provided with written calibration instructions, including methods and frequencies.

10.2.5 Devices used for making critical measurements (i.e. for monitoring of critical limits), including reference thermometers, metal detectors and scales, must be calibrated by an accredited agency, or the equipment manufacturer must provide assurance or guarantee of the instrument's accuracy.

The reference thermometer should only be used for checking working thermometers.

10.2.6 In-house routine checks of measuring devices must be carried out against reference standards at regular and established frequencies by suitably skilled personnel.

Table 3: Recommended Calibration Methods and Frequencies

Measuring device	Method	Frequency	Person/agency responsible
Standardised thermometer (reference thermometer)	Standardised against a national or international standard	Once every 1- 5 years	Accredited/ approved laboratory
Working thermometers	Calibrated against a reference thermometer	Annually	Accredited person or agency
	Ice point and/or boiling point method, as appropriate (Refer to methods in following box)	Those used daily for monitoring critical limits – weekly or fortnightly Other working thermometers - monthly	Suitably skilled person
CATR	Calibrated against a reference thermometer	Annually	Accredited person or agency
Smokehouse/cooker probe and temperature recorder (e.g. data logger)	Calibrated against a reference thermometer	Data logger and probe - annually	Accredited person or agency
	Calibrated against a reference thermometer (in-house check)	Probe - monthly, if used to determine the final product temperature and the cooking schedule	Suitably skilled person
Weighing scales (ingredient and product scales, platform scales)	Check against test weights	Daily	Suitably skilled person
Weighing scales (e.g. final product scales)	Certify for accuracy as per the Weights and Measurements Act 1987	Annually	Accredited person or agency

Measuring device	Method	Frequency	Person/agency responsible
Test weights	Standardised against a national standard	Annually	Accredited/ approved laboratory
Water activity meter	Calibration against standard solutions; manufacturer's instructions	Before each day's use, or as recommended by manufacturer	Suitably skilled person
	Servicing and calibration	Annually	Instrument specialist
pH meter	Check against standard solutions; manufacturer's instructions	Before each day's use, or as recommended by manufacturer	Suitably skilled person
Metal detector	Test against metal test pieces	At least daily	Suitably skilled person
	Servicing and calibration	Annually	Instrument specialist

Ice point and boiling point calibration methods

Hot point calibration is used when monitoring temperatures higher than room temperature (e.g. cooking temperatures). A combination of the ice point and hot point methods is recommended for a more accurate calibration of thermometers used to monitor a wide range of temperatures.

1. Ice point method
 - a. Use enough crushed ice in a container to allow immersion of most of the probe stem. Add just enough water to remove the air around the ice particles and to form a slush. Wait for the ice to appear clear.
 - b. Stir the mixture (do not use the probe for mixing), tip off excess water, insert the probe and leave it for about 2 minutes. Ensure that the tip of the probe is in good contact with the slush ice at the center of the container.
 - c. Stir the mixture again and check the reading on the thermometer. Accept if the deviation from 0°C is within the declared limits of accuracy.
 - d. If the deviation from 0°C is greater than the limit of accuracy, or greater than $\pm 1.0^{\circ}\text{C}$,

adjust the thermometer accordingly or discard and replace the thermometer.

2. Boiling point method

- a. Place the probe in a container with boiling water for about 2-3 minutes until the thermometer reading stabilises. The probe should be at the center of the container.
- b. Accept if the deviation from 100°C, or appropriate temperature according to elevation, is within the declared limits of accuracy.
- c. If the deviation from 100°C is greater than the limit of accuracy, or greater than $\pm 1.0^{\circ}\text{C}$, adjust the thermometer accordingly or discard and replace the thermometer.

10.3 Monitoring Procedures

The responsible person must carry out regular checks for compliance with documented procedures.

10.4 Corrective Actions Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the calibration programme is found to be ineffective. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address the:

- a. actions to be taken when a measuring device is damaged, or provides inconsistent or inaccurate readings
- b. identification and disposition of any product produced when the device was out of calibration; and
- c. prevention of the recurrence of the problem (e.g. retraining of personnel involved).

10.5 Records

Records of the following must be kept:

- a. identification, location and calibration status of equipment
- b. certificates of accuracy or calibration
- c. training records; and

- d. monitoring, corrective action and verification records.

11 Health of Personnel and Hygienic Practices

Amendment 0

February 2010

11.1 Scope

This section discusses the requirements and procedures for ensuring that personnel are medically fit to perform their tasks, and hygienic practices are implemented by all personnel. Personnel include all workers, contractors providing services, and visitors.

The sources of hazards controlled under this programme are summarised below.

Source	Examples of hazards
Person	Bacterial pathogens (e.g. <i>Salmonella</i> spp., <i>E. coli</i> spp., <i>Staphylococcus aureus</i>) Hepatitis A virus
Clothing, footwear	Bacterial pathogens (e.g. <i>Salmonella</i> spp., <i>E. coli</i> spp., <i>Clostridium</i> spp.) Objects (e.g. buttons)
Personal items	Objects (e.g. jewellery, pens, hair clips, hair, plasters)

11.2 Control Measures

11.2.1 Health of workers

11.2.1.1 The operator must document and implement procedures to ensure that a person (including any visitor or contractor) who is:

- infected with, or a carrier of, an infectious disease in a communicable form as described in Section A, Part 1, of the First Schedule of the Health Act 1956 and that is likely to be transmitted through food or associated things

These include infections or diseases caused by *Salmonella* spp., *Shigella* spp., *E. coli* spp., *Campylobacter*, and the Hepatitis A virus.

- suffering from acute respiratory infection; or

- c. suffering from boils, sores, infected wounds, or any other condition that cannot be adequately protected from becoming a source of contamination;

does not work as a product handler or enter an area where he or she may adversely affect the suitability for processing or the fitness for intended purpose of any product. **[HC Spec 23 (1)]**

11.2.1.2 The operator must ensure that all workers (including office staff), contractors and visitors understand the company's health and sickness policy.

A documented health policy may be useful, covering matters such as working with wounds, communicable diseases, and notification procedures for workers suffering from any illness or injury. The NZFSA's [Health and Sickness Template](#) provides guidance on the exclusion of infected persons.

11.2.1.3 Workers must inform the person responsible for operations if they are (or suspect that they are) suffering from diarrhoea, acute respiratory infection; or if they are diagnosed with illness caused by *Salmonella*, *Shigella* spp., *E. coli* spp., *Campylobacter*, or the Hepatitis A virus, or other infections likely to be transmissible via food.

11.2.1.4 A product handler, or any other person who may affect the suitability for processing or fitness for intended purpose of any product, after suffering from an illness described in section 11.2.1.1 (a) or (b) above, must provide a certificate from a registered medical practitioner confirming that the person is no longer likely to contaminate the product, prior to resumption of work in that role. **[HC Spec 23 (2)]**

11.2.1.5 A product handler, or any other person who may affect the suitability for processing or fitness for intended purpose of any product, who suffers from a condition described in section 11.2.1.1 (c) above must, before resuming work, be assessed by a suitably skilled person to confirm that the condition is no longer likely to contaminate product, or that the handler or other person is adequately protected from being a source of contamination. **[HC Spec 23 (3)]**

11.2.1.6 Any injury, wound, or cut must be treated immediately and dressed with a secure waterproof dressing to prevent contamination of any ingredients, product, packaging or equipment with blood or other fluid discharge. The dressing must be kept clean and properly secured to prevent it from becoming loose or falling off.

Wound dressings should be protected from becoming wet (e.g. use of impervious gloves for wounds on the hands, and protective sleeves or clothing over other wounds).

Brightly coloured or metallised wound dressings should be used as they are more easily detected in products if they become dislodged.

11.2.2 Documented procedures on hygienic practices

The operator must document and implement hygienic practices and procedures for all personnel (including product handlers, cleaners, office workers, maintenance personnel, contractors and visitors), appropriate to their task and area of work.

11.2.3 Protective clothing

11.2.3.1 All personnel who enter any processing or storage areas must wear suitable, clean protective clothing and footwear.

Protective clothing may be of any colour, provided the presence of any contaminant, relative to the type of work, is clearly distinguishable.

Workers handling unpackaged food must wear waterproof sleeves over fabric sleeves. This does not apply when the fabric sleeves are rolled up to above the elbow.

Workers should wash and clean footwear before entering processing areas.

11.2.3.2 Hair restraints, for both head and facial hair, must be worn in processing areas.

Hair restraints may be paper, cloth or plastic hats, or hair nets. Beard masks or all-over-type hats should be used by personnel with full beards.

11.2.3.3 Personnel who work in raw product areas must change their protective clothing, and clean or change their footwear, before entering areas where cooked or RTE product is produced.

Refer to Part 3, section 9.2 for other procedures for preventing post-process contamination of

cooked and RTE products.

11.2.3.4 Personnel assigned to work in areas where materials for animal consumption or waste are handled must remove their outer clothing, footwear or coverings; and change to clean protective clothing before entering processing areas.

Personnel assigned to work in areas where materials for animal consumption or waste are handled should wear some form of identification to distinguish them from other product handlers.

11.2.3.5 All protective clothing must be:

- a. kept in good condition
- b. changed at least daily or more often if it becomes excessively contaminated; and
- c. stored in a manner that protects it from contamination.

Re-usable aprons should be cleaned and sanitised at least daily. Plastic sleeves should be cleaned and sanitised every 4 hours.

11.2.3.6 Disposable aprons, gloves and plastic sleeves must be discarded after use, or when torn, damaged or contaminated.

11.2.3.7 Workers must not wear waterproof protective clothing (e.g. aprons, plastic sleeves, gloves) or equipment (e.g. knives and steels) outside the processing area.

11.2.3.8 Workers must not wear protective clothing outside the premises.

11.2.4 Gloves

11.2.4.1 Hands must be cleaned before gloves are put on and after gloves are removed.

11.2.4.2 Disposable gloves must be replaced periodically during the day's operations (i.e. at every break as a minimum), and discarded whenever they come in contact with any contaminated material or surface, or are damaged or punctured.

11.2.4.3 Re-usable gloves (e.g. mesh gloves) must be cleaned and sterilised periodically during the day's operations (e.g. at every break) and at the end of the day's operation or shift.

The following are acceptable procedures for cleaning and sterilising/sanitising protective cut-resistant gloves:

- a. all protective cut-resistant gloves - soak in quarternary ammonium sanitiser overnight, rinse with warm water prior to use
- b. chain-mesh gloves - hose with high pressure 82°C water to remove visible soil, soak in alkaline cleaner (20-25%) for no less than 15 minutes, soak in 90°C water for no less than 15 minutes, rinse with high pressure hot water, and hang to dry; or
- c. knitted gloves - hose with high pressure 82°C water to remove visible soil, soak in quarternary ammonium sanitiser (0.2%) for no less than 30 minutes, rinse with high pressure hot water, and hang to dry.

11.2.5 Hands

11.2.5.1 All personnel must thoroughly wash hands and exposed portions of the arms with hand detergent and water, sanitise (when appropriate) and dry them:

- before entering any processing or packing areas
- before handling any ingredient, product or exposed packaging
- after using the toilet
- after handling or coming into contact with waste and contaminated surfaces or material
- after hand contamination from coughing, sneezing, and blowing the nose; and
- if working in a raw product area, before entering a cooked or RTE product area. (Refer to Part 3, section 9.2 for other procedures for preventing post-process contamination of cooked and RTE products).

11.2.5.2 Suitable hand sanitisers should be used in areas where cooked or RTE product is processed or packed. Sanitisers must be used in accordance with the manufacturers' instructions.

RMP operators must use hand sanitisers from the list in the [Approved Maintenance Compounds \(Non-dairy\) Manual](#).

11.2.5.3 After washing, hands must be thoroughly dried using disposable paper towels, or other hand drying facilities that do not contaminate washed hands or the surrounding area (e.g. roller towels fitted with a timed automatic retraction device that removes the soiled piece of towel immediately after use).

11.2.5.4 Workers processing, packing or handling unprotected product must not wear false finger nails or finger nail polish. Finger nails must not be excessively long and must be kept clean.

11.2.6 Jewellery and other personal items

11.2.6.1 Personnel in processing areas must not wear jewellery except for plain wedding bands (i.e. no stone). Plain wedding bands may only be worn provided they cannot be easily dislodged and they can be effectively cleaned in the same manner as hands.

11.2.6.2 Medical alerts may be worn provided they are protected so they cannot be easily dislodged and they can be effectively cleaned in the same manner as hands.

11.2.6.3 Workers must not take personal items (e.g. sweets, cigarettes, mobile phones and other electronic items) in processing or packing areas.

Certain supervisory or management staff (not product handlers) may be allowed to keep their cellphones when entering processing areas provided the operator has documented procedures for managing their use so GMP is not compromised.

11.2.7 The following activities are not permitted inside processing or packing areas:

- eating of any food
- smoking

- spitting; or
- any other activity that may cause contamination of any product or product contact surface.

Drinking in processing areas should only be allowed in certain processing areas where it is necessary for the comfort of workers (e.g. very warm rooms). The operator must have documented procedures for managing the use of drink bottles (e.g. identification of bottles, holding area, cleaning) so it does not compromise GMP.

11.2.8 Visitors and contractors

11.2.8.1 Visitors and contractors must report to the responsible person on arrival at the premises. They must be supervised by an assigned staff member while within the premises unless they have been inducted and are familiar with the required hygienic practices. It is the responsibility of the assigned staff member to ensure that the visitor or contractor follows hygienic practices and procedures.

Visitors and contractors who wish to enter a processing or packing area should sign a visitors' logbook on arrival.

11.2.8.2 Visitors and contractors must not be allowed to handle product in processing and packing areas unless they have complied with all the hygiene requirements for product handlers.

11.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme (e.g. daily checks of workers' compliance to protective clothing requirements and hygienic practices).

11.4 Corrective Action Procedures

11.4.1.1 The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the programme is found to be ineffective. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address the:

- a. actions to be taken when personnel do not comply with documented procedures
- b. identification and disposition of any affected product (see 11.4.1.2); and
- c. prevention of the recurrence of the problem (e.g. retraining of personnel involved).

11.4.1.2 If contamination from human blood or any body discharge occurs, the following actions must be carried out:

- a. affected product must be considered unfit for human or animal consumption
- b. affected product contact surfaces must be cleaned and sanitised prior to reuse, and, if necessary processing must cease until the area is cleaned and sanitised; and
- c. affected packaging materials must not be used for packing of any product.

11.5 Records

Records of the following must be kept:

- a. medical certificates
- b. register for injuries
- c. visitors' logbook; and
- d. monitoring, corrective action, and verification records.

12 Training and Competency

Amendment 0

February 2010

12.1 Scope

This section discusses the requirements for the training and competencies of personnel to ensure that they have the knowledge and skills necessary to perform their assigned tasks effectively.

12.2 Control Measures

12.2.1 An FSP or RMP must specify the identity (either by position, designation or name) of:

- a. the day-to-day manager or person responsible for the day-to-day running of the FSP or RMP
- b. those persons authorising all or part of the FSP or RMP on behalf of the operator; and
- c. those persons performing key tasks under the FSP or RMP including monitoring, corrective action, and operator verification activities. **[RMP Spec 15 (1); Food Act Section 8G]**

12.2.2 The operator must document the skills or competencies needed by the persons identified in section 12.2.1 to enable the effective operation of the FSP or RMP. **[RMP Spec 15 (2); Food Act Section 8G]**

These competencies may be documented in job descriptions or training records.

- a. The day-to-day manager or person authorising all or part of the FSP or RMP should be familiar with the FSP or RMP, and have the following competencies:
 - have knowledge on product safety, and hygienic procedures and practices documented in this code of practice
 - have knowledge of relevant regulatory requirements, including responsibilities,

related to the effective development and implementation of the FSP or RMP

- have technical knowledge and experience in the manufacture of processed meats; and
 - is able to liaise and communicate effectively with workers and the regulator.
- b. The person responsible for the development and review of the HACCP application within the FSP or RMP should have knowledge on HACCP principles and how they are applied to the manufacture of processed meats. Ideally, the person should have training on HACCP. Examples of NZQA Unit Standards on HACCP are:
- Unit Std 12624 – Monitor a meat processing operation under a HACCP system
 - Unit Std 12625 – Supervise a meat processing operation under a HACCP system
 - Unit Std 12626 – Coordinate the development and/or verification of a HACCP plan or application for a meat processing operation
 - Unit Std 19514 - Explain the application of HACCP principles.
- c. Workers performing key tasks including monitoring, corrective action, and operator verification must have the following competencies:
- have knowledge and skill in implementing the particular task; and
 - be familiar with, and able to consistently comply with hygienic practices and procedures.
- d. For further information on qualifications available on meat processing (smallgoods), refer to the NZ Industry Training Organisation.

12.2.3 The operator must ensure that the skills of those persons involved in key tasks that could have a significant impact on the suitability or the fitness for intended purpose of product, are maintained on an ongoing basis. **[HC Spec 26 (1); Food Act Section 8G]**

The operator should develop a training programme which covers: the identification of skills required for key tasks, skills maintenance, monitoring and corrective action procedures, and record keeping. On-going training may take the form of induction training, regular in-house meetings, on-the-job training, or external training courses.

Clear task instructions should be written and made available to relevant workers.

12.2.4 The operator must keep records demonstrating that skills identification, achievement and maintenance is being carried out effectively. **[RMP Spec 15(3); HC Spec 26 (2)]**

12.2.5 New workers must be informed of their job description, health requirements, and hygienic practices and procedures before starting work.

The operator should provide new employees and regular service contractors with an induction programme. New workers should be supervised until they are adequately trained to perform their assigned tasks.

12.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

Examples of monitoring activities are: daily personal hygiene checks, checks to confirm that persons who carry out key tasks (e.g. those responsible for monitoring and corrective action under the RMP) are appropriately skilled and are performing those tasks correctly, and periodic checks to confirm that training of workers is up-to-date.

12.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when procedures are found to be ineffective. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address the prevention of the recurrence of the problem (e.g. retraining of personnel involved, review of procedures and making amendments, if necessary).

12.5 Records

Records of the following must be kept:

- a. training records for each employee
- b. copies of training certificates/results; and
- c. monitoring, corrective action and verification records.

13 Specifications, Handling and Storage of Inputs

Amendment 0

February 2010

13.1 Scope

This section discusses the requirements for receiving, handling and storage of inputs such as raw materials, ingredients and packaging materials.

13.2 Control Measures

13.2.1 General requirements

13.2.1.1 The operator must document and implement procedures for checking raw materials, ingredients, and packaging on receipt or before they are used to ensure that:

- a. they are fit for their intended purpose and comply with any agreed specifications
- b. packaging is not damaged to the extent that product is exposed and potentially contaminated; and
- c. sufficient information is provided (i.e. on labels or accompanying documentation) for their effective identification, storage and use.

The documented procedures should include the checks to be undertaken, the criteria for acceptability, the person responsible for checking the incoming goods, and corrective actions to be taken when non-compliance occurs.

13.2.1.2 All process inputs, including ingredients, additives, processing aids, and packaging must be stored, handled, and transported in a manner that minimises any potential contamination or deterioration. **[HC Spec 115]**

13.2.1.3 Rejected goods must be clearly identified and held in a designated area.

13.2.1.4 Once an input has been accepted, it should be:

- a. moved to storage or directed to processing as soon as possible
- b. maintained at appropriate temperatures for safety and quality
- c. protected against contamination or damage
- d. stored on racks, shelves or pallets to ensure no contact with the floor; and
- e. used on a first-in-first-out basis, as appropriate.

13.2.1.5 Storage areas must be kept clean and tidy, and free from pests.

13.2.2 Meat

13.2.2.1 Meat of New Zealand origin used in the production of processed meats must be sourced from slaughter and dressing premises that operate under a registered RMP.

13.2.2.2 All imported meat must comply with relevant Import Health Standards and Biosecurity requirements.

Import Health Standards can be obtained from the MAF Biosecurity website
<http://www.biosecurity.govt.nz/ihs/search>.

13.2.2.3 Meat must not show any signs of deterioration (e.g. off odours) or possible temperature abuse (e.g. cartons badly stained with drip).

13.2.2.4 Chilled meat must be received at a maximum of 7°C.

Frozen meat should be frozen hard with no signs of thawing.

13.2.2.5 Chilled meat must be stored at a maximum of 7°C, and frozen meat at a maximum of -12°C.

13.2.3 Ingredients and additives

13.2.3.1 The identity and purity of additives, processing aids, vitamins, minerals, and other added nutrients must comply with the Food Standards Code, part 1.3 “Substances added to Food”, Standard 1.3.4 “Identity and Purity”. **[HC Spec 17]**

13.2.3.2 Ingredients must comply with the [Food Standards Code](#).

For example, the microbiological limit for pepper, paprika and cinnamon is: *Salmonella* = 0 in 25g.

13.2.3.3 The operator must develop procedures for sourcing ingredients and additives that meet regulatory requirements and agreed specifications.

The operator should implement a Supplier Quality Assurance programme which includes the following:

- a. sourcing of ingredients from preferred suppliers
- b. provision of product specification or information sheets by suppliers (including information on individual ingredients contained in a pre-mix or blend of ingredients, and the presence of allergens)
- c. auditing of suppliers, when needed
- d. provision of certificates of analysis or supplier guarantees by suppliers; and
- e. operator verification of compliance to agreed specifications (e.g. periodic physical inspection and microbiological testing of ingredients).

13.2.3.4 Ingredients and additives must be:

- a. stored under conditions appropriate for the product, and which will maintain their quality and functionality within the specified shelf life or period that it is held in storage (e.g. some items may require dry storage, others may require refrigeration)
- b. stored in a designated area (e.g. shelf, cupboard, or room) and kept separate from chemicals and other materials which may contaminate or be mistaken for them
- c. kept in sealed or covered containers when not in use; and
- d. labelled with the name or names of the additives and other ingredients.

13.2.3.5 Any ingredient or additive must be discarded when:

- a. it is no longer safe (e.g. contaminated with rodent droppings, chemicals) or suitable for use (e.g. it has signs of spoilage, it is past its use-by date)
- b. it is contaminated so that its allergen status is affected; or
- c. important information needed for its safe use is lost (e.g. identity).

13.2.4 Ice

13.2.4.1 Ice must comply with the microbiological limit specified in Standard 1.6.1 of the Food Standards Code. The microbiological limit for packaged ice is: *E. coli* = 0 in 100 ml.

The operator should obtain a certificate of analysis from the ice supplier, and/or do their own tests to verify that the standard is being met.

13.2.5 Packaging

13.2.5.1 The composition and, where appropriate, the conditions of use of packaging must:

- a. comply with the requirements specified in the current US Code of Federal Regulations, Title 21, Parts 170-199 (21 CFR 170 – 199), which applies equally to coatings and linings of containers and cartons where these are the direct product contact surface
- b. comply with the requirements specified in the current “Australian Standard for Plastic Materials for Food Contact Use, Australian Standard AS2070-1999”; or

- c. be determined by the operator to be suitable for use, based on an analysis of hazards from the packaging. **[HC Spec 30 (1)]**

Operators should obtain a written guarantee from the supplier stating that the packaging meets mandatory requirements for composition and conditions of use.

Operators should discuss with their supplier how the packaging is to be used (e.g. whether it is to be used for frozen or chilled products, or whether it needs to be microwavable). This will need to be taken into consideration by the supplier when the supplier guarantee is given.

13.2.5.2 Packaging must be protected from contamination, and stored off the floor.

Packaging materials should be wrapped or contained in covered cartons to prevent contamination from dust and pests.

13.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

Examples of monitoring activities are: checks of all inputs on arrival, weekly checks to confirm proper storage of ingredients and packaging materials.

13.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when procedures are found to be ineffective. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address the:

- a. restoration of control
- b. identification and disposition of affected product; and
- c. prevention of the recurrence of the problem (e.g. retraining of personnel involved, review of procedures and making amendments, if necessary).

13.5 Records

Records of the following must be kept:

- a. register of goods
- b. list of suppliers
- c. raw material and ingredient specifications
- d. supplier guarantees or certificates of analysis
- e. supplier audit results, if any
- f. test results
- g. training records; and
- h. monitoring, corrective action and verification records.

14 Allergen Management

Amendment 0

February 2010

14.1 Scope

This section discusses the requirements and procedures for the management and labelling of allergenic meat products and ingredients regulated under the Food Standards Code.

The allergen substances covered by Standard 1.2.3 of the Food Standards Code are:

- cereals containing gluten and their products, namely wheat, rye, barley, oats, spelt and their hybridised strains other than where these substances are present in beer and spirits standardised in Standards 2.7.2 and 2.75. respectively.
- crustacea and their products
- egg and egg products
- fish and fish products
- milk and milk products
- peanuts and soybeans and their products
- added sulphites in concentrations of 10 mg/kg or more; and
- tree nuts and sesame seeds and their products.

More detailed information on allergen management and labelling is available from the [Allergen Bureau](#) website and [The Food Industry Guide to Allergen Management and Labelling](#).

14.2 Control Measures

14.2.1 General

The operator must develop and document procedures for the management and labelling of allergenic meat products and ingredients regulated under the Food Standards Code. This document is usually called an Allergen Management Plan.

A HACCP approach is recommended for a systematic identification of food allergens relevant to a particular product and process, and control measures for managing them. This involves evaluating the hazards associated with the whole 'lifecycle' of the product, starting with the sourcing of raw materials, and assessing every step of the process through to labelling and packaging of the final product. The points in the process where allergens can be introduced into products during processing should be identified, controls put in place at these points, and a system established to monitor them, to ensure that unintentional cross-contamination is minimised. The hazard identification and analysis should be documented in the RMP or FSP.

14.2.2 Raw materials

14.2.2.1 Accurate allergen information must be obtained from suppliers for all raw materials.

Operators should source their raw materials from suppliers with good allergen practices. Allergen information should be provided by the suppliers for each raw material to identify any products that contain allergens, or that are derived from allergenic foods, or have a high likelihood of cross contact with allergenic substances. For example, premixes of fillers or binders may contain milk or egg powder which should also be declared on the label.

An example of a [product information form](#) which could be used for obtaining allergen information from suppliers is available from the Allergen Bureau website.

The operator should have a system of notification from the ingredient supplier if the allergen status of an ingredient, additive or processing aid changes.

14.2.2.2 All raw materials and ingredients must be handled and stored in a manner that prevents cross-contamination between materials and ingredients of different allergen status.

Raw materials and ingredients should be checked on receipt to ensure that they are the correct items and they meet agreed specifications. Allergenic materials should be stored separately from those that are non-allergenic or contain different types of allergens. They may be segregated by

storing them in separate rooms, cupboards, or sealed containers.

14.2.3 Formulations

14.2.3.1 Product formulations or recipes must be developed and documented in accordance with the procedures given in Part 3 section 2.5. The documented formulations must identify all ingredients, including compound ingredients, substitute ingredients, additives and processing aids, and any rework.

14.2.3.2 There should be a system for verifying that formulations are being adhered to.

The verification system could involve checks to confirm that the product formulation matches the records of ingredient use (e.g. weighing checklists) and testing of final products for allergens.

14.2.3.3 The person responsible for developing formulations must assess the effect of any change in a product formulation and/or ingredient on allergens in the product, and ensure that any necessary change in labelling is made before the new formulation is used.

14.2.4 Processing

14.2.4.1 The operator must identify sources or causes of unintended exposure or contact of the product to allergens during processing and establish controls for them.

Unintended exposure or contamination of products to allergens may result from:

- use of incorrect formulation
- inadequate separation of materials, equipment and processes
- changes to product scheduling
- use of rework
- insufficient or ineffective cleaning and sanitation of equipment, containers and other product contact surfaces; or
- contamination from air-borne allergens.

14.2.4.2 The weighing and assembly of raw materials and ingredients must comply with the procedures given in Part 3, Section 3.5.

14.2.4.3 Products and processes of different allergen status must be physically separated from each other; or they must be separated by time or distance; as appropriate to the type and size of the operation, and based on an assessment of the potential for product contamination and risk to human health posed by the product.

Ideally, processors should use dedicated processing equipment or have separate processing lines for products of different allergen status to minimise potential cross-contamination.

When separation is achieved by a time difference, production and cleaning schedules should be organised in a way that prevents cross-contamination. For example, non-allergenic products should be processed first at the start of the day, when the equipment is clean, before processing allergenic products. Processing of products of different allergenic status can also be done on different days. When process scheduling is not practical, thorough cleaning of facilities and equipment should be done between products of different allergen status.

When products and processes of different allergen status are separated by distance or location within a room or area, the distance between them should be such that any contact or contamination between products, equipment, processes or personnel is avoided. Consideration should be given to airborne contaminants (e.g. flour dust).

14.2.4.4 The use of rework must comply with the procedures given in Part 3, Section 3.11.

14.2.5 Cleaning

14.2.5.1 Cleaning procedures must be documented and comply with section 7.

The cleaning programme should cover:

- a. the cleaning of all surfaces, equipment, utensils, clothing and hands of product handlers that may have come in contact with products that contain allergens
- b. the cleaning of spills
- c. the identification and cleaning of hidden or static areas and dismantling of equipment to remove residues; and
- d. verification of cleaning effectiveness (e.g. visual inspection, sampling or testing for allergen residues).

14.2.5.2 Production and cleaning schedules must be organised in a way that prevents cross-contamination between products and processes of different allergen status.

14.2.5.3 Facilities, equipment and utensils must be thoroughly cleaned and sanitised, and protective clothing of workers must be changed:

- a. before processing a non-allergenic product if the product previously processed contains an allergen; and
- b. between the processing of products that contain a different type of allergen.

14.2.5.4 A pre-operational check must be performed (refer to section 7.2.3) after cleaning and before starting processing of the next product.

14.2.6 Packing and labelling

14.2.6.1 Labelling of processed meat products must comply with [Standard 1.2.3](#) of the Food Standards Code which requires the mandatory declaration of certain allergenic substances and their products (refer to section 14.1 for the list of substances).

There are a number of tools or programmes available which can assist processors in their decision making about allergen declarations on their labels. An example is [VITAL](#) which provides processors a systematic way of assessing the impact of allergen cross contact and assists in determining appropriate precautionary allergen labelling.

14.2.6.2 If there is a formulation change, or a change to raw material supplier that results in the introduction of new allergenic materials, new labels with the correct allergen information must be designed and used on all products affected by the formulation change.

14.2.6.3 Procedures for ensuring that correct labels are applied to products consistently must be developed and implemented.

The procedures should cover the identification, storage, inventory and use of labels; and the disposition of obsolete labels or labels with wrong information.

Operators should also consider developing procedures for the traceability of packaging materials and labels. This will enable the tracking of defective packaging and labels (e.g. those with labelling errors such as missing allergen information).

14.2.7 Training

14.2.7.1 The operator must ensure that all relevant personnel are aware of food allergens and the consequences of unintentional consumption by allergic consumers, and are adequately trained on good practices in allergen management specific to their area of work or responsibility.

14.2.7.2 Training records must be kept.

14.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

Testing for allergens can provide confirmation of the effectiveness of allergen management.

The most commonly used analytical method for detecting the presence of food allergens is the Enzyme Linked Immuno Sorbent Assay (ELISA) technique. A number of allergen ELISA test kits are currently available for the routine detection of allergens in foods.

14.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when procedures are found to be ineffective. The corrective actions must include an assessment to determine the cause and extent of the non-compliance, and must address the:

- a. restoration of control
- b. identification and disposition of affected product; and
- c. prevention of the recurrence of the problem (e.g. retraining of personnel involved, review of procedures and making amendments, if necessary).

14.5 Records

Records of the following must be kept:

- a. cleaning records

-
- b. formulations
 - c. product information sheets
 - d. supplier agreements
 - e. labelling decision making records (e.g. VITAL)
 - f. training records; and
 - g. monitoring, corrective action and verification records.

15 Labelling

Amendment 0

February 2010

15.1 Scope

This section discusses the requirements for labelling of processed meats.

15.2 Control Measures

15.2.1 The operator must develop procedures for ensuring that:

- a. labels are designed to meet regulatory requirements
- b. all information printed on a label or on packaging is correct and accurate
- c. any claims on product labels are accurate and evidence is available to support the claims
- d. the correct label is applied to each product unit
- e. labels are stored in a manner that maintains them in good condition; and
- f. damaged or obsolete labels are disposed of appropriately.

15.2.2 Labelling of packaged products for retail sale

Product that is packaged for retail sale must be labelled in accordance with the requirements of the Food Standards Code.

The [NZFSA Food Labelling Guide](#) gives detailed information on what a food label needs to include.

15.2.3 Labelling of transportation outers

15.2.3.1 Labelling must be provided on transportation outers and must state:

- a. the product name or description

- b. storage directions, when necessary to maintain the product as suitable for processing or as fit for intended purpose; and
- c. lot identification (except that this requirement is optional if the application of lot identification to the retail packaging is a mandatory requirement under other legislation and that legislation is complied with). **[HC Spec 32 (3)]**

15.2.3.2 Mandatory labelling must be clear, legible, indelible, and use terms that are commonly used in the English language or other language approved by the NZFSA. **[HC Spec 32 (4)]**

15.2.3.3 The label of the transportation outer, or accompanying documentation, of any product that is not intended for human consumption but has the appearance of, or could be mistaken for, product that is intended for human consumption, must clearly indicate that the product it contains is not intended for human consumption. **[HC Spec 32 (5)]**

15.2.4 Labelling and accompanying documentation changes

15.2.4.1 If the status of a product's suitability for processing, or fitness for intended purpose changes, all affected labelling or the accompanying documentation (when there is no label) must be amended to reflect its new status prior to its release for trade, or the packaging (including labelling) must be replaced. **[HC Spec 32 B (1)]**

15.2.4.2 If any product is downgraded and is no longer intended to be traded for human consumption, any labelling, accompanying documentation, inspection legends and any other identification of product as being suitable for human consumption must be removed or defaced at the consigning premises. **[HC Spec 32B (2)]**

15.2.4.3 Any false or misleading labelling on re-used or recycled packaging resulting from previous uses must be removed or defaced at the consigning premises. **[HC Spec 32B (3)]**

15.2.5 Cooking instructions

Labels on retail packs of products that are not RTE must indicate that the product requires cooking, and include validated instructions on how to cook the product safely.

This requirement is particularly important for pre-cooked meat products which require further cooking but may be assumed by consumers to be RTE. Certain pre-cooked meat products, despite undergoing a full cooking schedule, require further cooking for food safety reasons because they are not handled in the same stringent manner after cooking as RTE products. For example, due to differences in post-process handling, frankfurters and chorizos are produced by some companies as RTE, whereas other companies produce these same products as non-RTE. **It is therefore very important to clearly indicate on the label whether the product requires cooking or not.**

15.2.6 Date markings

The operator must determine the shelf-life of products to support the setting of any required date mark (e.g. use-by date) on product labels, and keep records detailing the basis of the shelf-life.

Guidance on shelf-life testing can be found in the NZFSA booklet "[A Guide to Calculating the Shelf-life of Foods](#)".

Shelf-life trials should be conducted at temperatures that the product is normally exposed to in the distribution and retail system, and in the home, and should consider fluctuations in temperature as the product moves through the distribution chain.

Operators should verify the shelf-life of each product periodically (e.g. by implementing a rolling testing scheme that covers all products within a certain period).

15.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

Examples of monitoring activities are: daily labelling checks, and checking of new labels at the design phase.

15.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when procedures are found to be ineffective. These must include an assessment to determine the cause and extent of the non-compliance; and actions to fix the problem, and prevent of the recurrence of the problem (e.g. retraining of personnel involved, review of procedures and making amendments, if necessary).

15.5 Records

Records of the following must be kept:

- a. label checklists
- b. copies of labels that have been checked and comply with requirements
- c. shelf-life trial records; and
- d. monitoring, corrective action and verification records.

16 Traceability and Inventory Control

Amendment 0

February 2010

16.1 Scope

This section discusses the requirements and procedures for traceability and inventory control of all raw materials, ingredients and products.

16.2 Control Measures

16.2.1 The operator must document and implement a tracking system that:

- a. allows for the identification of all raw materials, ingredients and products; and
- b. enables the movement of raw materials and ingredients to be traced from the supplier; and to the next person or company that any product is transferred to for further processing, packing, storage, distribution or sale. **[AP Reg 18(10)]**

Operators should also consider developing procedures for the traceability of packaging materials and labels. This will enable the tracking of defective packaging and labels (e.g. barrier films with defective or missing barrier components which may adversely affect the product's shelf-life, printed materials with labelling errors such as missing allergen information).

16.2.2 The operator must document and implement procedures for inventory control. **[HC Spec 34(3)]**

16.2.3 Inventory records (i.e. stock records) must be maintained for all raw materials (e.g. meat, additives, other ingredients); finished products; returned products; and any non-complying products.

16.2.4 All outgoing products must be clearly identified and accompanied by appropriate documentation.

16.3 Monitoring Procedures

Compliance to documented procedures must be regularly checked by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme.

16.4 Corrective Action Procedures

The operator must take corrective actions when any non-compliance to documented procedures occurs, or when the traceability and inventory control programme is found to be ineffective.

The corrective actions should include: an assessment to determine the cause and extent of the non-compliance, and any consequential effects on other documents or records, and programmes; and actions necessary to prevent the recurrence of the problem (e.g. retraining of personnel involved, review of procedures and making amendments, if necessary).

16.5 Records

Records of the following must be kept:

- a. records for incoming and outgoing goods/raw materials (e.g. delivery dockets, invoices, consignment forms)
- b. inventory records; and
- c. monitoring, corrective action and verification records.

17 Handling and Disposition of Non-complying Products, and Recall

Amendment 0

February 2010

17.1 Scope

This section discusses the requirements and procedures for the handling and disposition of non-complying products. A non-complying product is any product that does not meet regulatory requirements, including relevant regulatory or operator-defined limits; or has not been processed in accordance with regulatory requirements or a validated and/or verified process.

17.2 Control Measures

17.2.1 Non-complying products

17.2.1.1 The operator must document procedures for the identification, handling, storage, and disposition of non-complying products. The procedures must facilitate the traceability and inventory of non-complying products.

17.2.1.2 Non-complying products must be handled and stored in a manner that prevents contamination and deterioration of other products, and contamination of the storage environment.

17.2.1.3 Non-complying products must be clearly identified, separated from other products, and held within the premises until disposition is determined by a suitably skilled person or, in certain cases, by the regulator.

Non-complying products may be separated from other products by holding them in a separate room or cage, or by wrapping the products with plastic.

17.2.1.4 Disposition of non-complying products must be determined by a suitably skilled person based on an assessment of factors such as: product safety and suitability, the amount of product affected, whether the product has been released for distribution or not; and whether it can be reprocessed to a safe product.

Appropriate actions should include one or a combination of the following:

- a. restricted release when the operator is able to manage the problem appropriately
- b. regrading to an alternative use when the product conforms to the alternative requirements (e.g. for petfood or rendering)
- c. reworking
- d. reprocessing to ensure that the product conforms to the requirements
- e. rejection (i.e. destruction of the product); or
- f. recall

17.2.1.5 An RMP operator must notify the recognised RMP verifying agency in writing, without unnecessary delay, when there is any significant concern about the fitness for intended purpose of any of their products. **[RMP Spec 13 (3a)]**

17.2.1.6 An FSP operator must notify their local Public Health Unit, or if based in Auckland or Christchurch, contact the NZFSA Food Officer, when there is any significant concern about the fitness for intended purpose of any of their products.

17.2.2 Recall

17.2.2.1 The operator must document recall procedures, including:

- a. the criteria for deciding when a recall will be initiated; and
- b. how retrieval and disposition of the relevant product will be managed. **[RMP Spec 14 (1), Food Act Section 8G]**

17.2.2.2 The operator must document a system for notifying the following people, as soon as possible, when product is recalled from trade, distribution or from consumers because it is not or may not be suitable for processing or fit for its intended purpose:

- NZFSA and the recognised RMP verifier *[RMP Spec 14(2)]*; and
- PHU or Food Act Officer.

Refer to the "[Recall Guidance Material](#)" for guidance on recall procedures.

17.3 Records

Records of the following must be kept:

- a. list of non-complying products
- b. records of assessment and disposition of non-complying products
- c. records of recall activities
- d. inventory records; and
- e. any correspondence with the verifier or auditor, and the regulator.

18 Operator Verification

Amendment 0

February 2010

18.1 Scope

This section discusses the requirements for operator verification of the effectiveness of the documented FSP or RMP.

18.2 Control Measures

18.2.1 The operator must document an operator verification system including:

- a. the activities to be performed, and their frequencies
- b. any actions to be taken when all or part of the FSP or RMP is not effective; and
- c. any recording and reporting requirements. **[RMP Spec 16(1)]**

Operator verification includes activities such as internal audits, reviews of the FSP or RMP, and other activities undertaken to confirm the effectiveness of hygiene and sanitation programmes (e.g. environmental testing), achievement of regulatory and operator defined limits (e.g. product testing), compliance to specifications (e.g. ingredient testing) and validated processes.

18.2.2 Internal audits

18.2.2.1 Internal audits must be undertaken by a suitably skilled person at a frequency sufficient to ensure ongoing compliance with documented FSP or RMP procedures, and to enable prompt identification and correction of any problem.

The person responsible for undertaking internal audits should have: auditing skills, a good understanding of the operations, processes and supporting systems covered by the RMP, and a good understanding of relevant regulatory requirements. He/she should be able to take appropriate corrective actions, when required, and communicate effectively with the regulator, managers and workers.

The frequency for internal audits of the different programmes comprising the FSP or RMP will

depend on factors such as: the importance of the particular programme on the safety of the product and hygienic operations, the frequency of non-compliances, the effectiveness of the programme, skills and training of personnel implementing the particular programme, and the cost of doing the audits. For example, GMP programmes covering hygiene and sanitation (e.g. cleaning and sanitation, repairs and maintenance) and process control, particularly at critical control points, should be verified at a higher frequency (e.g. every 2-4 weeks). Other programmes, such as calibration, document control, traceability and inventory control, can be audited less frequently. The operator should increase the frequency of audits when repetitive non-compliances occur or the programme is ineffective.

All programmes of the FSP or RMP should undergo an internal audit within a given year. The internal audits may be staggered throughout the year based on an established timetable (e.g. review certain parts of the FSP or RMP each month).

In addition to the regular internal audits of the different GMP programmes, a review of the entire FSP or RMP should be undertaken at least annually, and when significant changes to the product, process or premises are made, or the FSP or RMP, or parts of it are not working effectively. This review should look at the overall effectiveness of the FSP or RMP, any trends or repetitive failures or non-compliances, whether the product and process descriptions are still correct, and whether the HACCP application is still appropriate.

Indications that the FSP or RMP or parts of it are not working effectively include:

- a. a series or trend of non-compliances or out of specification product test results
- b. customer complaints
- c. product recall; and
- d. unacceptable outcomes of external verification audits.

18.2.2.2 The operator must keep records of observations made during the internal audit, and any corrective actions taken.

Internal audits should consist of a review of records, reality checks and confirmation that deficiencies or non-compliances identified from the last audit have been rectified.

- a. Records should be reviewed for:
 - completeness and accuracy of required information
 - appropriateness of corrective actions taken
 - any trends, new hazards, recurring problems

- compliance with documented control procedures.

The person performing the audit should sign the records or indicate in some other way that they have been subject to an internal audit.

b. Reality checks should include observations of:

- workers' performance and compliance to hygienic practices and process control procedures
- compliance to established process parameters such as processing times and temperatures; and
- the hygienic status of the premises' internal and external environment, facilities and equipment.

c. All deficiencies found at previous audits should be followed up.

18.2.3 When ongoing or recurring non-compliances occur, the operator must take the following actions:

- a. investigate and determine possible causes of non-compliance
- b. take appropriate corrective actions to regain control and prevent recurrence of the problem
- c. increase surveillance of the system; and
- d. review the relevant parts of the FSP or RMP, and amend them, as necessary.

Refer to Section 3: Document Control and Record Keeping for amendment requirements.

18.3 Ingredient and Product Testing

18.3.1 Product testing must be done when necessary to demonstrate achievement of relevant regulatory limits or operator-defined limits documented in the FSP or RMP.

18.3.2 The operator must document the product testing programme, which may also include any testing done on raw materials and ingredients.

The programme should include information on: products or ingredients to be tested, frequency of testing, number of samples, tests to be done, and the identity of the suitably skilled person or laboratory that will perform the tests. Corrective actions to be taken when requirements are not met should also be documented.

18.3.3 Samples must be representative of the particular batch or lot of product or ingredient being tested.

18.3.4 Samples of products must be hygienically collected by a person who has appropriate training and/or experience in hygienic sampling techniques. They must be held and transported under conditions which will not affect the particular parameter that the ingredient or product is being tested for.

18.3.5 In-house testing for chemical and physical parameters (e.g. moisture content, water activity, pH) must be done using documented methodologies and/or calibrated equipment by a person who has appropriate training and/or experience in the particular test.

Microbiological testing should be done by an IANZ (International Accreditation New Zealand) or LAS (Laboratory Accredited Scheme) accredited laboratory.

18.3.6 All results of product tests must be kept.

18.4 Environmental Testing

This section is pending. The NZFSA has developed a *Listeria monocytogenes* risk management strategy to meet its performance target of achieving “no increase in reported incidence of foodborne listeriosis after five years”. Part of this strategy involves the development of a COP for operators producing RTE foods. This will contain sections on good operating practice, appropriate monitoring programmes and management practices for handling events when *Listeria* is detected on product or in the processing environment. The draft COP is expected to be released for external consultation in mid 2010.

Operators who produce RTE products should implement a monitoring programme for *Listeria*. Until the development of the monitoring programme for *Listeria* is completed, processors should follow a *Listeria* monitoring programme from other sources, such as the [USDA FSIS Compliance Guideline to Control *Listeria Monocytogenes* in Post-lethality Exposed Ready-to-eat Meat and Poultry Products](#).

18.5 Records

The operator must keep records giving the following information:

- a. internal audit reports
- b. FSP or RMP review records
- c. training records; and
- d. records of other verification activities (e.g. test results).