Code of Practice:
Processing of Seafood Products

Part 1: Overview

July 2011

Ministry of Agriculture and Forestry
Te Manatū Ahuwhenua, Ngāherehere

BIOSECURITY NEW ZEALAND

NEW ZEALAND FOOD SAFETY AUTHORITY

Disclaimer

Every effort has been made to ensure the information in this report is accurate.

MAF does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.

Requests for further copies should be directed to:

MAF Information Bureau
PO Box 2526
WELLINGTON

Telephone: 0800 00 83 33
Facsimile: 04-894 0300

This publication is also available on the MAF food safety website at:
www.foodsafety.govt.nz/elibrary/

Prelims

Amendment 0

July 2011

Contents

Page

Review of Code of Practice

This code of practice will be reviewed, as necessary, by the Ministry of Agriculture and Forestry. 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:

Manager (Food Standards)
New Zealand Standards Group
MAF
PO Box 2526
Wellington
Telephone: 04 463 2500
Facsimile: 04 463 2643

1 Purpose and Scope of the Code of Practice

Amendment Number 0

July 2011

This code of practice (COP) has been developed by the New Zealand Seafood Standards Council and the Ministry of Agriculture and Forestry (MAF), in consultation with an industry working group. This COP has been developed to assist seafood operators to meet the requirements of the Animal Products Act 1999 and produce seafood products for human consumption that are safe and suitable for its intended purpose. Guidance is provided for meeting the development, registration and implementation requirements of risk management programmes (RMPs). For operators under the Food Act (Food Safety Programme operators and businesses registered under the Food Hygiene Regulations 1974), this COP provides a good source of guidance.

This COP applies to businesses involved in the primary and secondary processing of seafood products for human consumption.

Examples of primary seafood products processing include, but are not limited to:
- heading, gutting, and filleting of fish;
- shucking, heat shocking, land-based wet storage and depuration of bivalve molluscan shellfish;
- tubing of squid; and
- tailing of crustaceans.

Examples of secondary seafood products processing include, but are not limited to:
- acidification, salting, brining, smoking, thermal processing, refrigeration, storage;
- extraction, drying, blending of powders from fish or shellfish; and
- addition of non-animal product ingredients to Seafood Products e.g. breading, coating, saucing, assembling.

1.1 PARTS OF THE COP

The COP is divided into three parts.

Part 1: Overview
Part 1 gives an overview of the whole COP and the requirements of the Animal Products Act 1999. It explains the options available to operators for the development of RMPs. It also provides links to other relevant documents published by MAF.

Part 2: Good Operating Practice (GOP)
Part 2 covers good operating practice and process control. It sets out the regulatory requirements, and acceptable or agreed procedures for meeting the requirements of the Act, particularly the Specifications for Products Intended for Human Consumption. This will assist operators in the development and documentation of supporting systems that form part of RMPs.

Part 3: HACCP Application, and the Identification of Other Risk Factors and their Controls

Part 3 shows how the principles of Hazard Analysis and Critical Control Point (HACCP) can be applied to seafood products processing. It also covers the identification of risk factors and controls related to the wholesomeness and labelling of seafood products.

1.2 SUPPLEMENTARY INFORMATION

In some places, the COP refers to supplementary information. This supplementary information includes:

- Generic RMP Models;
- Guide to HACCP Systems in the Seafood Industry;
- Guidelines for Seafood Recall Programmes;
- Verification of Cleaning Programmes;
- Listeria Guideline 1993.

1.3 EXCLUSIONS

This code of practice does not apply to the following:

1. Activities covered by the current versions of the RCS and notice which cover all activities involved in growing, harvesting, sorting and transporting bivalve molluscan shellfish for commercial purposes up until the time when the shellfish are received by a wholesaler or retailer or sold direct to the consumer, or undergo primary processing. Please refer to the following links for the required details:
   Animal Products (Regulated Control Scheme – Bivalve Molluscan Shellfish) Regulations 2006 (Shellfish RCS) (external website)
   Animal Products (Specifications for Bivalve Molluscan Shellfish) Notice 2006 (330KB PDF)

   This means that the following activities are excluded from the COP - relaying, temporary storage, and wet storage occurring in a coastal marine area or a land-based aquaculture facility. However, the COP does cover wet storage in a land-based facility or any other forms of primary processing that operate under an RMP.

2. Activities carried out on Limited Processing Fishing Vessels that are covered under the current versions of the RCS, notice and associated operators guidelines. Please refer to the following links for the required details:

   Animal Products (Regulated Control Scheme-Limited Processing Fishing Vessels) Regulations 2006 (external website)
   Animal Products (Specifications for Limited Processing Fishing Vessels) Notice 2006 (330KB PDF)
   Regulated Control Scheme for Limited Processing Fishing Vessels: Operator Guidelines (303KB PDF)

   The COP has been developed based on New Zealand requirements only and does not cover overseas market access requirements. Exporters must ensure that they meet the overseas market access requirements relevant to their product and intended market.

2 Requirements of the Animal Products Act 1999

Amendment 0

July 2011

The Animal Products Act 1999 is New Zealand's legal framework for the processing of animal products. It establishes a risk management system that requires all animal products traded and used to be "fit for intended purpose". The Act sets out the duties of the operator and the requirements related to risk management programmes (RMPs), regulated control schemes, and exporter controls.

2.1 RISK MANAGEMENT PROGRAMMES (PART 2 OF THE ACT)

All primary processors of seafood products for human or animal consumption are required to have a registered RMP. Secondary processors of seafood products must operate under an RMP except where their operations are covered by the Food Act regime. Although secondary processors of seafood products intended for export to overseas markets are not required to have a registered RMP, an RMP is usually necessary to enable them to comply with overseas market access and official assurance requirements.

Operations that constitute primary processing of seafood products are described in clauses 7 and 8 of the current version of the Animal Products (Exemptions and Inclusions) Order.

Secondary processing of seafood products includes processes at any stage beyond primary processing.

Persons who carry out the operations listed below are exempt from the requirement to have an RMP (see clauses 10 and 11 of the current version of the Animal Products (Exemptions and Inclusions) Order):

- retail sale of fish if no fish from their operation are exported;
- both retail and wholesale sale of fish if no fish are exported, provided the operations are covered by a food safety programme under the Food Act 1981;
- temporary holding, storage, or transport of fish pending their transport to a primary processor; and
- processing of fish bait, fish berley, chum or ground bait.

In addition, no RMP is required for persons operating fishing boats where the fish is not landed in New Zealand nor claimed to be a product of New Zealand.

2.2 REGULATED CONTROL SCHEMES (PART 3 OF THE ACT)

A regulated control scheme is a scheme developed by the MAF and imposed by the Director-General to manage risks, where:

- RMPs would not be feasible or practicable;
- it is more efficient for the government to run the programme; or
- it is needed to meet the market access requirements of foreign governments.

As noted in Part 1, Section 1.3 of this COP, MAF has developed regulated control schemes for the growing, harvesting, sorting and transporting of bivalve molluscan shellfish and for the control of processing operations carried out on limited processing fishing vessels.

2.3 EXPORTER CONTROLS (PART 5 OF THE ACT)

Exporters of Seafood Products must register with MAF. Exporters are responsible for exporting in accordance with the Act and, where appropriate, may be required to meet specified market access requirements of foreign governments that are additional to the New Zealand standard.

Export requirements are excluded from this COP. Operators should, however, be aware of these requirements and ensure that their documented systems include procedures and records necessary to demonstrate compliance with all relevant requirements notified in:

- General Requirements for Export (GREX); and
- Overseas Market Access Requirements (OMAR).

The guide for exporters discusses exporter requirements in more detail:
Guide to Exporting Animal Products Including Dairy

2.4 IMPOSITION OF AUTHORISATIONS, DUTIES AND RESPONSIBILITIES (PART 8 OF THE ANIMAL PRODUCTS ACT)

The Act provides for MAF's recognition of agencies and persons to undertake certain functions and activities (e.g. evaluation and external verification) that are important to the management of RMPs. MAF maintains a public register of all recognised agencies and recognised persons, which is available on http://www.foodsafety.govt.nz/.

The Act imposes duties on these key persons:

- operators of RMPs (section 16 of the Act);
- exporters (section 51 of the Act);
- recognised agencies (section 106 of the Act); and
- recognised persons (section 107 of the Act).

The Act also provides for appropriate penalties to be applied when an offence occurs.

3 Risk Management Programme

Amendment 0

July 2011

3.1 WHAT IS A RISK MANAGEMENT PROGRAMME?

A risk management programme (RMP) is a documented programme designed to identify and manage hazards and other risk factors in relation to the production and processing of animal material and animal products, in order to ensure that the resulting animal product is fit for intended purpose. The risk factors that must be considered in the development of an RMP are:

- risks from hazards to human and animal health;
- risks from false or misleading labelling; and
- risks to the wholesomeness of animal material or product.

An operator's registered RMP will be "legally binding" so it must be developed and implemented in accordance with relevant New Zealand legislation. MAF does not require overseas market access requirements and commercial quality issues to be part of the RMP.

The Risk Management Programme Manual provides comprehensive information on the principles and components of RMPs and provides guidance for their development:
Risk Management Programme Manual (638KB PDF)

3.2 RMP CONFIGURATIONS

An RMP may be developed for a single business or for multiple businesses.

3.2.1 Single-business RMP (Sections 12(3) and 12(4) of the Act)

A single RMP that covers the operations of a single business located in a single site is the simplest form of an RMP and its use is encouraged, whenever applicable. This is likely to be the most suitable RMP configuration for the majority of seafood products processors.

A business may decide to have more than one RMP. This may be useful when the operation can be logically and clearly split by product, process or premises. Such an arrangement can give flexibility to the operator in terms of making RMP amendments. It also allows for the suspension or deregistration of one RMP without affecting the other. However, consideration should be given to the practicality and cost of managing more than one RMP within a single business, and how this may affect any market access requirements.

3.2.2 Multi-business RMP (Section 17A of the Act)

An RMP may apply to more than one business, if the Director-General approves such an arrangement for the particular business. The approval will depend on the operator being able to demonstrate that:

- the programme is appropriate to all businesses or part-businesses that it covers;
- the registered operator of the programme will have sufficient control, authority and accountability for all matters covered by the programme in relation to the other business or part-business subject to its coverage; and
- the applicant has obtained the consent or otherwise taken into account the views of any person whose business or part-business is to be covered by the programme.

Certain market access requirements, for example European Union (EU) listing requirements, do not allow this RMP configuration to be used. A multi-business RMP is thus unlikely to be a suitable configuration for the majority of Seafood Products processors.

3.3 CONTENTS OF A RISK MANAGEMENT PROGRAMME

3.3.1 Contents

The documented RMP must include the following:

Good Operating Practice
Good Operating Practice (GOP) includes the practices and procedures designed to ensure the consistent production of products that are safe and suitable for their intended purpose, and that meet relevant regulatory requirements. It includes several interacting components such as hygienic practices, process control and quality assurance systems. Operators will usually document GOP in the supporting systems of their RMP.

GOP is the foundation for Hazard Analysis and Critical Control Point (HACCP) and RMPs.

GOP for the processing of seafood products is discussed in Part 2 of this COP.

Application of HACCP principles
The operator must apply HACCP principles, as appropriate to the product and process, to ensure a systematic approach to the identification and analysis of hazards and their control. This is covered in Part 3 of the COP.

Identification of other risk factors and their controls
Other risk factors related to the wholesomeness of the product and risks from misleading labelling must be identified and documented in the RMP, together with control measures for addressing the identified risk factors. These are also covered in Part 3 of the COP.

Other RMP requirements
Other RMP requirements such as business identification, operator's details, physical boundaries, and provision for verifiers' rights must also be documented in the RMP.

3.3.2 RMP components

The RMP should include the following components:

- Operator, business and RMP identification;

- List of RMP documents;
- Management authorities and responsibilities;
- Scope;
- Animal material and animal product description;
- Process description;
- Good Operating Practice;
- Application of HACCP (identification, analysis and control of hazards to human or animal health);
- Identification and control of risks to wholesomeness;
- Identification and control of risks from false and misleading labelling;
- Identification and competency of responsible persons;
- Corrective action for unforeseen circumstances;
- Recall procedures;
- Validation;
- Operator verification;
- Notification requirements;
- Provision for external verification activities & verifiers' rights;
- Document control and requirements for records.

4 Development of an RMP based on an Approved Code of Practice

Amendment 0

July 2011

The Animal Products Amendment Act 2002 allows for an RMP to be based on a COP, a template, or a model if in the view of the Director-General it is valid and appropriate for businesses of that kind. A COP that is deemed as valid and appropriate after an assessment process carried out by MAF will be formally recognised as an "approved code of practice".

A COP is a valuable tool to use in the development of the RMP. Compliance with an approved COP will:

- ensure that the operator complies with current best practice or acceptable industry practices and procedures;
- ensure that the operator meets the relevant regulatory requirements; and
- simplify and reduce the cost of developing and evaluating the RMP.

The applicability of the approved COP to the particular business and the degree of the operator's compliance with the approved COP will influence the development approach, and, in some cases, the evaluation requirements for the RMP.

4.1 DEVELOPMENT

The simplest approach for developing an RMP is to base the RMP on relevant generic RMP model(s) that MAF provides for several categories of Seafood Products processing. These models can be found in the Supplementary Information document "Generic RMP Models for the Processing of Seafood". Operators must customise their RMPs to cover specific products, processes and premises.

Businesses whose products and processes are not fully covered by the approved COP, or who have decided to apply procedures and/or processing parameters that differ significantly from those given in the COP, must be able to demonstrate that any alternative procedures or parameters can consistently and effectively meet all relevant regulatory requirements and produce products that are safe and suitable for their purpose. To demonstrate the effectiveness of such alternative procedures the operator may be required to collect evidence (e.g. data from testing or trials, published scientific information, report from an expert) for assessment by the recognised evaluator or MAF.

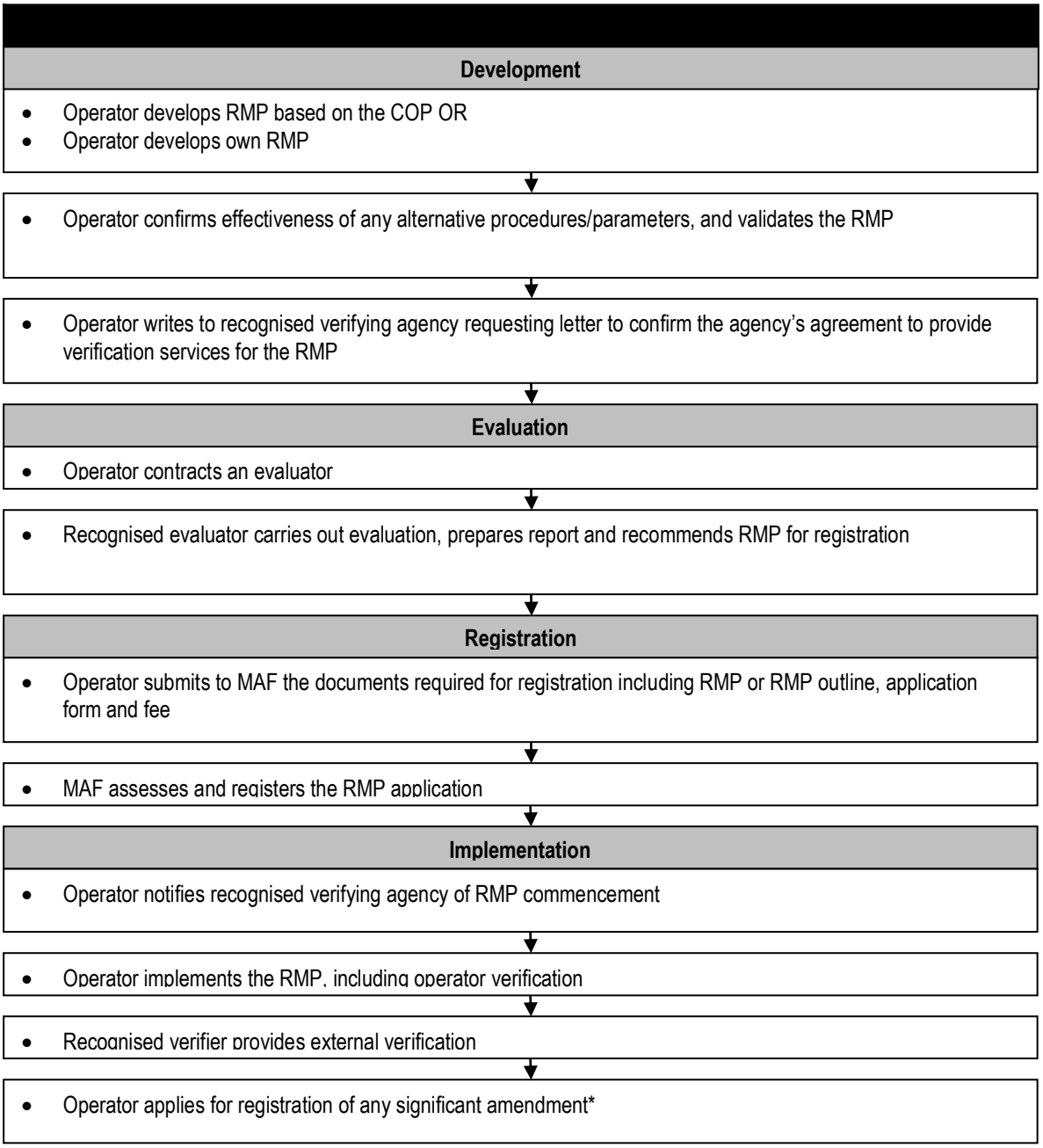
4.2 EVALUATION

Seafood products RMPs, whether they are based on the approved seafood COP or include procedures that vary from the COP, must be evaluated by an independent, recognised evaluator to confirm the adequacy of the RMP. Evaluation will involve a desk-top audit of the documented RMP and an on-site visit of the premises, and must be complete before the RMP can be registered.

4.3 STEPS FOR THE DEVELOPMENT, REGISTRATION AND IMPLEMENTATION OF AN RMP

The steps for the development, registration and implementation of an RMP are summarised in Figure 1. When developing their RMP, operators may incorporate parts of the COP by reference, provided the parts referenced reflect the actual activities / processes that take place within the business.

Figure 1: Steps for the development, registration and implementation of an RMP



* Significant amendments will require evaluation prior to registration – for information on significant amendments refer to Appendix G of the Risk Management Programme Manual: Risk Management Programme Manual (638KB PDF)

5 Other Legislation

Amendment 0

July 2011

This COP will help seafood products operators to meet the requirements of the Animal Products Act 1999. Operators are responsible for ensuring that they are familiar and comply with all other relevant legislation. Operators should not rely solely on this COP to provide them with information on the legal requirements under other legislation.

Legislation that is likely to be relevant to seafood operators includes, but is not limited to, the following Acts and their associated regulations and specifications:

- Animal Products Act 1999;
- Animal Products (Ancillary and Transitional Provisions Act) 1999;
- Agricultural Compounds and Veterinary Medicines Act 1997;
- Biosecurity Act 1993;
- Commerce Act 1986;
- Consumer Guarantees Act 1993;
- Fair Trading Act 1986;
- Food Act 1981;
- Hazardous Substances and New Organisms Act 1996;
- Resource Management Act 1991;
- Health and Safety in Employment Act 1992;
- Fisheries Act 1993.

6 Sources of Other Information

Amendment 0

July 2011

Information specific to seafood products is available on the seafood part of the MAF food safety website:
Seafood

Other information about the Animal Products Act 1999 and RMPs can be obtained through the animal products part of the MAF (food safety) website or the risk management part of the MAF (food safety) website:
Animal Products – General
Risk Management Programmes (RMPs)

The new food safety section of the MAF website also provides useful information.
Food Safety

Code of Practice:
Processing of Seafood Products

Part 2: Good Operating Practice

July 2011

Ministry of Agriculture and Forestry
Te Manatū Ahuwhenua, Ngāherehere

BIOSECURITY NEW ZEALAND

NEW ZEALAND FOOD SAFETY AUTHORITY

Disclaimer

Every effort has been made to ensure the information in this report is accurate.

MAF does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.

Requests for further copies should be directed to:

MAF Information Bureau
PO Box 2526
WELLINGTON

Telephone: 0800 00 83 33
Facsimile: 04-894 0300

This publication is also available on the MAF food safety website at:
www.foodsafety.govt.nz/elibrary /

Prelims

Amendment 0

July 2011

Contents

Page

Review of Code of Practice

This code of practice will be reviewed, as necessary, by the Ministry of Agriculture and Forestry. 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:

Manager (Food Standards)
New Zealand Standards Group
MAF
PO Box 2526
Wellington
Telephone: 04 463 2500
Facsimile: 04 463 264

1 Introduction

Amendment 0

July 2011

1.1 PURPOSE AND SCOPE

Part 2 of this code of practice (COP) covers Good Operating Practice (GOP) essential for the consistent production of seafood products that are fit for their intended purpose, and meets relevant regulatory requirements. It provides guidance on hygienic practices and process controls that directly or indirectly impact on the safety and suitability of products. Compliance with these GOP measures will assist operators meet the requirements of the Animal Products Act 1999, particularly the current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice. GOP measures provide the basis for development of a Risk Management Programme (RMP).

GOP may also be referred to as Good Manufacturing Practice or Supporting Systems.

The code of practice meets the requirements of the New Zealand standard. Additional export requirements are included in General Requirements for Export (GREXs) and Overseas Market Access Requirements (OMARs).

1.2 LAYOUT OF PART 2

The GOP programmes are laid out with the following subheadings:

Purpose and scope
This describes the purpose of the GOP programme and its scope of application.

Sources of hazards
This section identifies the sources of hazards that are controlled under the particular GOP programme, and gives examples of hazards associated with each source. It does not apply to those GOP programmes that do not directly address a particular source (e.g. inventory control, calibration).

Mandatory requirements
These requirements are mandated by legislation, and the operator must comply with them. Where the meaning is clear, the COP quotes directly from legislation. In other cases, the COP paraphrases them so they are easier to understand and to highlight their relevance to seafood products. The COP also cites the specific legislation from which each requirement has been derived to assist those who may wish to read the actual piece of legislation referred to. Actual legislation will always take precedence, and it is the operator's responsibility to check for changes to legislation.

Procedures
The procedures given are the accepted or industry agreed means of achieving or complying with the mandated requirements. These procedures cover control, monitoring, corrective

action and verification. The operator must comply with the procedures that are applicable to their product and process.

In some cases the operator may decide to use an alternative process, procedure or parameter that is not provided for in this COP (e.g. when new technology becomes available). The operator must be able to demonstrate the effectiveness of any alternative process to consistently meet all relevant regulatory requirements and produce products that are fit for their intended purpose. Confirmation of the effectiveness of any alternative process, procedure or parameter may involve the collection and analysis of evidence by the operator (e.g. data from testing or trials, published scientific information, report from an expert). The operator should prepare a protocol for the collection of data as discussed in the Risk Management Programme Manual (638KB PDF).

This COP will be reviewed as necessary, and the inclusion of any alternative process, procedure or parameter will be considered as part of any such review.

It is important to note that some mandatory requirements (e.g. those that are specific and clear in their intent) are not repeated or expanded further in relevant sections under Procedures. Operators must ensure that they read and comply with all requirements given under both Mandatory Requirements and Procedures that are relevant to their operation.

Guidance

> Guidance material is presented in a box. It provides explanatory information and options for achieving a particular outcome or requirement. Operators may use alternative methods or measures to those set out in the guidance material provided they do not in any way compromise GOP and the achievement of regulatory requirements. Operators do not need to provide justification when deviating from guidance material.

Records

This section gives the list of records that the operator must keep.

1.3 DOCUMENTATION OF GOP

1.3.1 Legal requirement

The current version of the RMP Specifications requires that an RMP must contain sufficient procedures to ensure that GOP is applied. These procedures must cover:

- the control measures to be used to control hazards and other risk factors;
- any parameters to be met;
- any monitoring procedures that are to be carried out; and
- 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 animal material or animal product; and any measures to be taken to prevent reoccurrence of the loss of control.

1.3.2 Contents of supporting systems

When documenting supporting systems, the operator should ensure that they cover the areas listed below:

- Purpose and scope
- Authorities and responsibilities
- Materials and equipment, as applicable
- Procedures (covering control measures, monitoring, corrective action and operator verification)
- Records
- References to other relevant documents, as applicable.

2 Design, Construction, and Maintenance of Buildings, Facilities and Equipment

Amendment 0

July 2011

2.1 PURPOSE AND SCOPE

To ensure that all buildings, facilities and equipment are designed, constructed, installed and operated in a manner that prevents or minimises contamination of seafood products, packaging, equipment, and the processing environment.

2.2 SOURCES OF HAZARDS

Source	Examples of hazards
Facilities, equipment	Microbiological pathogens (e.g. *Listeria monocytogenes*, *Salmonella*, *E.coli* spp, viruses) Chemical residues (e.g. cleaning chemicals) Physical hazards (e.g. metal, glass)
Maintenance compounds (e.g. lubricating fluids)	Chemical residues
Environmental contaminants (e.g. dust, fumes, pollutants, sewage)	Microbiological pathogens (e.g. *Listeria monocytogenes, Salmonella*, *E. coli* spp., *Clostridium* spp.) Chemical residues (e.g. agricultural chemicals)

2.3 MANDATORY REQUIREMENTS

2.3.1 AP Reg 10

The premises, facilities, equipment and essential services must be designed, constructed, located and operated in a manner that:

a) enables the suitability of any seafood products to be maintained;
b) enables the fitness for intended purpose of any product to be achieved and maintained; and
c) minimises and manages the exposure of any product, packaging, equipment, and the processing environment to hazards and other risk factors.

2.3.2 HC Spec 5 (1)

Any material or exposed internal surface finish used in the building, manufacture, or maintenance of facilities, equipment, or internal structures, that may affect the suitability for processing of animal material (other than live mammals or live birds), or the fitness for intended purpose of animal product, must –

a) be impervious, non-absorbent, and free from depressions, pits, cracks, and crevices that may harbour contaminants; and
b) be easily cleaned and sanitised; and

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; and
d) be durable, resistant to fracture, and capable of withstanding repeated exposure to normal cleaning and sanitising; and
e) in the case of surfaces (other than those used for walking or standing on during operations), be smooth and minimise the accumulation of condensation; 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.

2.3.3 HC Spec 5 (2)

The facilities, equipment, and internal structures, that may affect the suitability for processing of animal material or the fitness for intended purpose of animal product, must be of sanitary design.

2.3.4 HC Spec 6(3)

Temperature controlled rooms and equipment must be operated within their design capability and capacity, and must consistently deliver any temperature as required by this Notice or as specified in the risk management programme (as the case may require).

2.3.5 HC Spec 6 (4)

Cleaning and sanitation facilities, and equipment, must be provided to ensure that the hygiene of personnel, equipment and the premises or place can be maintained so that the suitability for processing of animal material and the fitness for intended purpose of the animal product is not adversely affected.

2.3.6 HC Spec 6 (5)

Access to facilities that are sufficient for official assessors and Animal Product Officers to perform their role must be provided.

2.3.7 HC Spec 7

Lighting must be of a sufficient intensity and quality to enable satisfactory performance of all operations which might affect the suitability for processing of animal material or the fitness for intended purpose of animal product.

2.3.8 HC Spec 15

Process gases that come into direct contact with animal material or animal 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) the “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 or the Pharmaceutical Codex”:

e) the current Australia New Zealand Food Standards Code, Part 1.3 "Substances added to Food", Standard 1.3.4 "Identity and Purity".

2.3.9 HC Spec 16

1. When compressed air is generated on site for the purpose of processing and comes in direct contact with animal material or product, the air must be filtered and the source must be clean and external to the building.

2. The filters for filtering air that is used in contact with animal material or animal product, must comply with –
   a) 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
   b) any other international standard recognised by the Director-General.

2.3.10 HC Spec 19 (1)

Equipment or storage areas used to store or contain any product that is not suitable for processing or not fit for human consumption, but is suitable or fit for some other purpose, must be clearly identified and not be a source of contamination to any other product that is intended for human consumption.

2.3.11 HC Spec 20 (2)

Equipment and storage areas, used to store or contain waste must:

a) be clearly identified, and if equipment is permanently installed and in an identified storage area then either the equipment or storage area may be identified; and
b) not be a source of contamination to other animal material or animal product.

2.4 PROCEDURES

2.4.1 Site

2.4.1.1 The operator must consider potential sources of contamination when deciding where to locate the premises, and assess the effectiveness of any reasonable measures that might be taken to protect the product.

Ideally, premises should be located away from areas that are on-going sources of contamination. Operators should avoid areas that are:

- environmentally polluted
- sites for industrial activities that pose a serious threat of contamination;
- subject to flooding, unless sufficient safeguards are provided;
- prone to infestation of pests; and
- situated so that wastes, either solid or liquid, cannot be effectively removed.

2.4.1.2 Transport access ways, and areas between and around buildings, must be constructed and maintained so that they drain surface water, and minimise dust and other environmental contamination.

These areas should be concreted or suitably sealed to minimise contamination and allow for easy cleaning. Operators should also consider how they will protect product from adverse environmental conditions when moving it between buildings, for example by installing canopies overhead.

2.4.2 Buildings and facilities

2.4.2.1 Adequate facilities must be available for:

- the hygienic performance of all operations;
- storage of products, packaging, ingredients, cleaning materials, maintenance compounds, and other materials;
- storage and distribution of water;
- cleaning and sanitation of facilities and equipment;
- personnel hygiene (e.g. toilets, hand washing units, changing facilities); and
- effective drainage and disposal of wastes.

2.4.2.2 Adequate working space must be provided to allow for:

- the hygienic performance of all operations;
- access of personnel;
- installation of equipment;
- effective cleaning; and
- storage of, and access to, materials.

2.4.2.3 Internal structures of buildings, including floors, ceilings and walls, must be designed and constructed in a manner that:

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

Personnel making decisions on design and construction should be suitably qualified. Operators may seek guidance from local authorities or organisations (e.g. the Master Builders Association) regarding qualifications of contractors.

Rodents can climb up wires and the outside of vertical pipes less than 76mm in diameter, and up the inside of vertical pipes less than 102mm in diameter. They can also jump 660 to 915 mm both vertically and horizontally from a flat surface, and drop 15 to 25 metres without being killed. They can also gain entrance through holes 12.7mm in diameter (for rats) or 6.4mm (for mice).

Exporters should note there are restrictions on the use of wood in EU listed premises and ICSS-listed bivalve molluscan shellfish premises. These are specific market access requirements and exporters should consult the relevant OMARs for further information.

In other premises the operator should, wherever possible, exclude unprotected wood from all processing areas.

2.4.2.4 Buildings and facilities must be designed to provide separation, by partition, location, or other effective means, between operations (including waste disposal) that may cause contamination of seafood products.

The processing areas of premises, including fishing vessels, should be separated by a physical partition from living quarters, retail shops and auction places.

In case of vessels separation should be by:
- doors or hatches made of permanent material; or
- adequate space so that contamination is minimised.

2.4.3 Floors

2.4.3.1 The floor in a processing area must be:
- impervious to the effects of cleaning chemicals, seafood products and water;
- sufficiently strong to withstand its normal use (e.g. by foot traffic, forklifts); and
- easy to clean and sanitise.

Materials considered suitable for floors include concrete, floor tiles, concrete or mortar with a monolithic surface coating (e.g. a proprietary epoxy coating) and other synthetic material; and in the case of fishing vessels, painted steel is also an option.

2.4.3.2 The floor in a processing area must be adequately graded to prevent the pooling of water.

A gradient of 1 in 50 sloped towards drainage outlets will meet the requirement.

2.4.3.3 Floor and wall angles and joints must be constructed in a manner that allows effective cleaning.

To allow effective cleaning, the floor/wall joint should be coved in areas where wet operations or wet cleaning occur. A 75 mm radius coving will usually achieve this outcome. Several options are available for providing suitable angulations between walls and floors. These include:

- standard coving using concrete or other floor materials;
- covings recessed behind the wall surface; and
- covings made from aluminium (or other suitable material) attached over existing floor and wall surfaces.

All joints should be effectively sealed to prevent the entry of water.

2.4.4 Walls

2.4.4.1 The internal walls of processing areas must be:

- smooth;
- impervious to moisture and cleaning chemicals;
- of a colour that does not disguise dirt and contaminants; and
- easily cleanable.

2.4.4.2 Where sheeting is used, all joints must be welded, or effectively sealed with a sealing compound. The same applies to rivet holes and any holes created when fixtures have been moved.

2.4.4.3 Porous surfaces such as cement or plaster must be sealed to render them impervious to moisture.

2.4.4.4 Exposed pipes and/or ducting for cables must be designed and installed so they do not become dirt traps (e.g. use of a bracket to hold ducting away from the wall).

MAF approved sealing compounds are listed in the Approved Maintenance Compounds Manual (382KB PDF).

2.4.5 Ceilings

2.4.5.1 The ceilings of processing areas must be:

- smooth;
- impervious to moisture and cleaning chemicals;
- of a colour that does not disguise dirt and contaminants; and
- easily cleanable.

2.4.5.2 Overhead fixtures attached to ceilings (e.g. pipe work, overhead cranes and hoses) must be located so that they can be easily cleaned and are not a source of contamination.

2.4.5.3 The joints between the ceiling and the wall must be constructed and sealed so that they are easily cleanable.

> Rounded joints will usually achieve this outcome. MAF approved sealing compounds are listed in the Approved Maintenance Compounds Manual (382KB PDF).

2.4.6 Doors

2.4.6.1 Door jambs and hatchway frames must be sealed to adjoining walls and floor junctions.

2.4.6.2 Doors in areas that open directly to the outside must be kept closed except when used for the movement of product, containers, personnel etc.

2.4.6.3 Doors in areas where processing and/or packing is carried out, and which open directly to the outside must be self-closing.

2.4.6.4 Doors in processing areas must be wide enough to ensure that unprotected seafood products does not come into contact with them during passage.

> Sections 2.4.6.2 to 2.4.6.4 do not apply to emergency exit doors or to hatches on fishing vessels.

2.4.7 Access ways and traffic flows

Stairs in processing areas and walkways, which pass over conveyors or tables, must be constructed so as to prevent contaminants falling on to seafood products, ingredients, additives, containers or seafood products contact surfaces.

2.4.8 Windows

2.4.8.1 Windows in processing and packing areas (other than in fishing vessels) that may be kept open during operations must be covered by screens or similar material to prevent entry of pests.

2.4.8.2 Internal windows must be constructed so as to be easily cleanable and prevent accumulation of dirt.

> Internal window sills should be sloped e.g. at an angle of 45°.

2.4.9 Drainage

2.4.9.1 The drainage system must have sufficient capacity to handle the wastewater and any particulate matter entering the system. Screens must be installed to prevent large fragments of solid material from entering the drains.

> Drains should be covered by a grating that is slightly lower than floor level and has perforations of sufficient size and number to allow rapid drainage.
>
> Operators should check with their territorial authority for any specific drainage requirements that apply.

2.4.10 Lighting

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

2.4.10.2 Lights must be of sufficient intensity to allow the required operations, checks, and inspections to be carried out effectively.

> In areas where quality control inspection is carried out, illumination of at least 540 lux at the point of inspection is recommended.
>
> In other areas (e.g. areas used for cleaning appliances or for hand washing), illumination of at least 220 lux is usually adequate.

2.4.11 Ventilation

2.4.11.1 Adequate ventilation must be provided in processing areas to minimise steam and condensation, and to prevent airborne contamination of seafood products.

> Options for ventilation in processing areas include natural ventilation using suitably screened air intakes or ventilating-type windows; or mechanical ventilation that is adequate for the size of the premises, the number of persons working there, and environmental conditions (e.g. heat gain from equipment, condensation).
>
> The direction of air flow should minimise cross contamination from earlier to later stages of seafood processing (e.g. air should flow from cooked processing areas to uncooked processing areas and not the reverse).

2.4.11.2 Fresh air intakes for processing areas, stores and amenities must be located so that incoming air is not contaminated with odours, dust, smoke and other environmental contaminants.

Effective filters should be installed, maintained, monitored and cleaned in accordance with the manufacturer's recommendations.

2.4.12 Equipment

2.4.12.1 Equipment that comes into contact with any edible seafood products must be designed, constructed, installed and operated in a manner that:

- ensures the effective performance of the intended task;
- ensures effective cleaning;
- facilitates good hygienic practices, including monitoring; and
- does not cause contamination of the product.

2.4.12.2 Equipment must be:

- durable;
- resistant to chipping, flaking, delamination, abrasion;
- able to withstand exposure to heat, water and all seafood products under normal operating conditions;
- corrosion resistant;
- inert to seafood products, cleaning materials and other substances under normal conditions of use; and
- able to be cleaned without damage to the material's surface.

2.4.12.3 The following materials must not be used in any equipment that may come into contact with exposed/unprotected seafood products:

- metals such as cadmium, lead and their alloys;
- metals whose contact with liquid or other material may create harmful chemical or electrolytic action;
- porous materials such as sponge rubber, stone slabs, linoleum, leather and fabrics (excluding strainers/filters); and
- wood (except on fishing vessels as long as it is easy to clean and does not contaminate the product).

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

Other suitable materials include:

- plastic materials and coatings that are abrasion- and heat-resistant, shatterproof and do not contain components that will adhere to seafood products when coming into contact with those materials or coatings;
- good quality galvanised iron, when used in bulk containers for transporting or holding whole headed or gutted fish; in fish scaler drums; and in thawing tanks and freezer trays used for whole and/or headed and gutted fish.

Aluminium should be used only for equipment that has short contact periods with seafood products. Aluminium sheet 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.

When purchasing new equipment for direct contact use with seafood products, the operator should obtain a letter of guarantee from the supplier certifying its suitability for food use (where appropriate), or alternatively they may make their own assessment.

2.4.12.4 Measuring equipment, such as weighing scales, thermometers (whether stand alone or forming part of a piece of equipment) must have the accuracy, precision, and conditions of use appropriate to the task performed.

2.4.12.5 Product contact surfaces

- the product contact surfaces of conveyor belts must be constructed of smooth material (e.g. intralok type belting), have undamaged edges, and be a colour that does not disguise contaminants;
- cutting boards must be smooth, shatterproof, and of a colour that does not disguise contaminants;
- welds in equipment must be smooth, complete, and without gaps, and angled so as to facilitate cleaning.

2.4.12.6 Non-product contact equipment and surfaces

- non-product contact equipment and surfaces must be constructed so they are easily cleanable.

In premises processing ready-to-eat seafood product, non-product contact surfaces that are in critical hygiene areas and that have the potential to impact on the product should be constructed to meet full sanitary design requirements.

2.4.12.7 Storage equipment

- containers used within the premises for holding seafood products, cleaning materials, wastes or other materials must be identifiable to differentiate between uses (e.g. by labels or colour coding);
- storage racks or shelving must be a sufficient height off the floor to allow cleaning underneath.

2.4.12.8 Cleaning equipment

Suitable equipment must be made available for cleaning and sanitising equipment and facilities, and must be maintained in a hygienic and good working condition.

2.4.13 Product support areas

2.4.13.1 Product support areas must be designed and constructed to:

- facilitate maintenance and cleaning;
- avoid pest access and harbourage.

2.4.14 Amenities for employees

2.4.14.1 The operator must provide sufficient space and facilities for employees to consume food, change clothes, store personal belongings and to attend to personal hygiene.

For land-based premises, the territorial authority can advise on the numbers of toilets required for staff employed on the premises, and on other amenities such as showers and hand wash basins.

For fishing vessels, the amenities may be located within the accommodation section of the vessel. See section 2.4.2.4 for more detail.

2.4.14.2 The amenities must be designed, constructed and maintained in a manner that facilitates cleanliness and tidiness.

2.4.14.3 The amenities must not open directly onto food areas.

2.4.14.4 Lockers for storing employees' clothing and personal belongings must be constructed in such a manner that they and the surrounding area can be easily cleaned.

Lockers should be off the floor (e.g. 300 mm higher) to allow for easy cleaning underneath. Alternatively lockers could be placed directly on the floor without any gaps.

2.4.15 Hand washing and sanitising facilities

2.4.15.1 Hand washing units must be not be operated by hand. The design must allow for non-hand operation (e.g. operated by knee or foot) or automatic sensor.

2.4.15.2 Hand washing facilities must be located in every toilet and/or amenities area, and in places that are accessible to all persons working in rooms where seafood products is processed. This requirement does not apply to rooms used exclusively for smoking, cooking, drying, chilling, freezing or thawing seafood products.

2.4.15.3 Hand washing facilities must be provided with warm potable water, liquid soap dispensers and single use 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).

Potable water at about 30° C should be provided for hand washing. Note that there are specific hand washing temperature requirements for ISSC listed shellfish premises in the Model Ordinance:
XI Shucking and Packing, Requirements for Dealers, .02 Sanitation, Section D. Maintenance of Hand Washing, Hand Sanitising & Toilet Facilities (external website)

2.4.15.4 Hand sanitising units (where these are used) must be provided with Ministry of Agriculture and Forestry (MAF) approved hand sanitiser (see the Approved Maintenance Compounds Manual).

2.4.15.5 Facilities for washing and, where necessary, sanitising waterproof protective clothing (e.g. boots, aprons, gloves), must be provided in or adjacent to the processing area.

2.4.16 Refrigeration facilities

2.4.16.1 Refrigeration facilities must be designed and constructed to:

- be capable of reducing all part of the seafood products to required preservation temperatures (refer to Part 2 section 33 of this COP) within the required time, and/or holding and storing the seafood products constantly at or below those temperatures;
- minimise the possibility of contamination of seafood products; and
- minimise 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.

2.4.16.2 All chillers and cold stores must be fitted with calibrated automatic temperature recorders.

Temperature sensors (probes) should be located so that they accurately monitor the temperature within the room. If only one temperature sensor is used it should be located in the return air flow to the evaporator unit as this usually has the highest temperature.

For chillers, the room temperature should be recorded at intervals of no greater than 1 hour. For cold stores the interval should be no greater than 4 hours.

2.4.17 Repairs and maintenance

2.4.17.1 The operator must document and implement a repairs and maintenance programme for the premises, facilities and equipment, to ensure they are maintained in good working condition and are not a source of contamination to seafood products.

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

The repairs and maintenance programme must include the following information:

- roles and responsibilities;
- monitoring schedule for the plant, facilities and equipment;
- corrective action to be taken when defects are identified;
- target date or time for completion of repairs or maintenance;
- records to be kept; and
- signature of responsible person once work is completed.

The action taken and the target date for completion should be based on the seriousness of the problem identified and the extent to which it may affect the seafood products fitness for purpose. Serious non-compliances should be corrected immediately.

2.4.17.2 All alterations, repairs and maintenance work on buildings, facilities and equipment must be carried out in a manner that minimises exposure of seafood products to any hazards introduced by this work.

2.4.17.3 Chemicals used during repairs and maintenance must be used in accordance with MAF's Approved Maintenance Compounds Manual.

The Approved Maintenance Compound Manual outlines the requirements for the use of approved chemicals and identifies the situations when these requirements do not apply.

2.5 MONITORING

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

The frequency and type of monitoring will depend on the nature of the operation, and on the degree of risk if hazards are uncontrolled. Monitoring options to identify repairs and maintenance problems include:

- daily checks on processing areas
- weekly checks on product support areas (e.g. chemical stores, packaging stores, dry stores)
- monthly check on the entire premises and surrounding areas.

2.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. Records must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that may be used to demonstrate compliance are:

- site plans
- equipment registers
- alteration/Maintenance plans

Refer to Part 2, section 38 of this COP for record keeping requirements.

3 Calibration of Measuring Devices

Amendment 0

July 2011

3.1 PURPOSE AND SCOPE

To ensure that measurements taken to demonstrate conformity with mandatory and other requirements are accurate and valid.

3.2 MANDATORY REQUIREMENTS

3.2.1 AP Reg 14

All specified persons must ensure that measuring equipment that is used to carry out a critical measurement is properly calibrated and functions as intended.

In this regulation, critical measurement means a parameter identified as critical in any—

- specifications or regulated control scheme; or
- risk management programme, being a parameter of the nature of the parameters referred to in section 17(3)(c) of the Act in relation to points at which hazards of significance occur.

3.2.2 HC Spec 28 (1)

Measuring equipment, such as scales, thermometers, pH meters, and flow meters (whether stand alone or forming part of a piece of equipment), that is used to provide critical measurements, must:

- have the accuracy, precision, and conditions of use appropriate to the task performed; and
- 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 risk management programme; and
- be uniquely identified to enable traceability of the calibrations and to identify calibration status.

3.2.3 HC Spec 28 (2)

Minimum frequencies of calibration must be specified in the risk management programme for each piece of measuring equipment used to provide critical measurements, or used as reference standards, taking into consideration the following (as appropriate):

- the stability of the piece of equipment; and
- the nature of the measurement; and
- the manufacturer's instructions.

3.2.4 HC Spec 28 (3)

Safeguards must be in place to prevent unauthorised adjustments to the calibration of the measuring equipment, including movement of the equipment where this may invalidate the calibration.

Critical measurements are measurements taken to confirm (directly or indirectly) the fitness for purpose of the product (e.g. equipment used for taking measurements at a Critical Control Point (CCP)). Operators are responsible for determining the critical measurements for their operations. Critical measurements may be identified in a Risk Management Programme or mandated as critical in the legislation, e.g. the critical preservation (load-out) temperatures in the Human Consumption specifications.

3.3 PROCEDURES

3.3.1 Measuring equipment (whether stand-alone or forming part of a piece of equipment) must have the accuracy, precision, and conditions of use appropriate to the task performed.

3.3.2 The operator must document a calibration programme, which should include the elements listed below.

3.3.2.1 A description of the type of equipment used to take critical measurements (e.g. its name, make, model and/or other identification characteristics).

Such equipment may include thermometers used for taking temperatures of heat-shocked product or product at load-out; moisture meters for measuring the moisture level in dried products; pH meters used for checking the pH of marinated product; scales used for measuring ingredients; and metal detectors.

3.3.2.2 A means of identifying the equipment (e.g. serial numbers, indelible tags) or other permanent means of identification. The identifying feature must be recorded on the calibration record sheet.

3.3.2.3 The frequency of calibration required for each piece of equipment.

It is important to consider the level of use of the instrument, its stability and the degree of accuracy required. Some pieces of equipment (e.g. scales), which become inaccurate if moved, may require calibration after any such movements.

3.3.2.4 Procedure for calibrating the instrument, showing how the operator will meet the requirements of Clause 28 1(b) of the Animal Products (Specifications for Human Consumption) Notice 2004.

This can be achieved by using suitable testing facilities capable of providing certification to show the required traceability, or by using reference materials (e.g. certified test weights or standard solutions).

The calibration requirements specified in HC Spec 28 apply only to equipment used to provide critical measurements. When developing their RMP, seafood operators should determine which of their processes require critical measurements to be taken, and document the result of this determination in their RMP.

3.4 MONITORING

The responsible person must carry out checks for compliance with documented procedures and to demonstrate that equipment used remains within an acceptable range.

This is especially important for equipment that monitors CCPs. Monitoring options include use of certified test weights to check scales used for critical measurements, ice point checks for thermometers and standard pH solutions to confirm the accuracy of pH meters.

Monitoring should also include regular checks to ensure calibration is up-to-date. The level of monitoring will depend on how frequently the device is calibrated; for example if annual calibration is required operators should schedule six-monthly checks.

3.5 RECORDS

3.5.1 The operator must keep relevant records demonstrating compliance with documented procedures. These include:

- calibration records
- certificates showing traceability to appropriate standard measurement; and
- monitoring and verification records.

Refer to Part 2, section 38 of this COP for record keeping requirements.

4 Water

Amendment 0

July 2011

4.1 PURPOSE AND SCOPE

To ensure that an adequate supply of potable water or clean seawater is available for hygienic operations so as to minimise contamination and maintain the fitness for intended purpose of seafood products. Water includes ice and steam.

4.2 SOURCES OF HAZARDS

Potable water

Source	Examples of hazards
Faecal material (e.g. animal droppings, sewage)	Pathogenic micro organisms – *E.coli* spp, *Campylobacter* spp, C*ryptosporidium, Giardia*, viruses
Agricultural chemicals (e.g. fertiliser, pesticides)	Nitrate
Soil	Pathogenic micro organisms – *E.coli* spp, *Campylobacter* spp, C*ryptosporidium, Giardia*, viruses Toxic chemicals, e.g. arsenic, boron
Pipes and tanks	Copper
Roof paint for roof collected water	Lead

Sea water

Source	Examples of hazards
Faecal material (e.g. animal droppings, sewage)	Pathogenic micro organisms – *E.coli* spp, *Campylobacter* spp, C*ryptosporidium, Giardia*, viruses
Agricultural chemicals (e.g. fertiliser, pesticides)	Nitrate
Pollution from vessels in area	Fuel, diesel, hydraulic fluid

4.3 MANDATORY REQUIREMENTS

4.3.1 HC Spec 8 – water coming into contact with animal material or animal product

1. Water (including ice and steam) that comes into direct contact or indirect contact with animal material or animal product must be potable water, or clean seawater, at the point of use.

2. Despite subclause (1), the operator may use an alternative water quality standard as determined by the operator provided —
   a) the water quality standard is determined by an analysis of hazards and other risk factors; and
   b) the suitability for processing of animal material or fitness for intended purpose of animal product is not adversely affected.

3. Sub clauses (1) and (2) do not apply to water used for live animals, or to water used for washing bivalve molluscan shellfish prior to depuration, or for depuration, or for wet storage.

4. The water used for activities relating to bivalve molluscan shellfish referred to in subclause (3) must comply with the requirements in the shellfish regulated control scheme.

4.3.2 HC Spec 9 – water not coming into contact with animal material or animal product

1. Water that does not come into direct contact or indirect contact with animal material or animal product must meet the requirements of clause 8, or may meet an alternative non-contact water quality standard.

2. If an alternative non-contact water quality standard is used, the appropriate standard must be determined by the operator —
   a) by an analysis of hazards and other risk factors; and
   b) taking into consideration the intended use of the water.

4.3.3 HC Spec 10 – water on fishing vessels

1. If clean seawater described in clause 8 is used on fishing vessels it must only be taken from places that are of a distance offshore sufficient to ensure that the water quality is not at risk from pollution sources.

2. All water treatment equipment, including desalination plants must be installed, maintained and operated in accordance with the manufacturer's instructions.

4.3.4 HC Spec 11 – requirement for reticulation management plan

1. The operator must implement a reticulation management plan for potable water used within a premises or place, (including its use on fishing vessels), where the water is supplied by an independent supplier, or is supplied on fishing vessels by the operator.

2. The reticulation management plan must include —
   a) systems to ensure that the water that is reticulated throughout the premises or place is not adversely affected by the reticulation system so that the intended water quality is delivered at point of use; and
   b) systems to ensure that there is no unintentional mixing of water of different standards; and
   c) an action plan with appropriate sanitation procedures to be implemented in the event of non-compliance with the reticulation management plan.

4.3.5 HC Spec 12 – requirement for water management plan

The operator must implement a water management plan for water described in clause 8, other than water used on a fishing vessel, if —

a) water is supplied by an independent supplier and is subjected to any treatment by the operator; or
b) water is supplied by the operator solely for the operator's use; or
c) an alternative water quality standard as described in clause 8(2) is used; or
d) clean seawater is used in a land based premises or place.

The water management plan must include —

a) any additional treatments —
   i. as required by the operator supplying potable water or using clean seawater in a land based premises or place; or
   ii. in the case of an alternative water quality standard, as determined through the analysis of hazards and other risk factors; and
b) the water quality standard (including criteria) as determined through an analysis of hazards and other risk factors; and
c) a water sampling and testing programme; and
d) an action plan in the event of non-compliance with the water management plan; and the requirements of the reticulation management plan described in clause 11(2).

4.3.6 HC Spec 13 – water analyses

1. Water analyses used to demonstrate compliance with clause 12 and conducted on water supplied by an independent supplier or by the operator solely for the operator's use, must be performed by or under supervision of a recognised signatory of a LAS laboratory or a ISO/IEC 17025 accredited laboratory with the required tests in the laboratory's scope of accreditation.

2. The operator must ensure that the training of water samplers is undertaken by a laboratory referred to in subclause (1).

3. Subclause (1) does not apply to chlorine, pH or turbidity measurements, which are performed by a suitably skilled person using documented test methodologies (including calibration procedures) and/or calibrated equipment.

4.3.7 HC Spec 14 – non-complying water

1. This clause applies only to water to which clause 8 applies.

2. If potable water supplied by an independent supplier is used, and the independent supplier 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 risk management programme to ensure the water is potable at the point of use, all operations involving that water must cease.

3. If water used is supplied by the operator, or is of an alternative water quality standard that has been determined under clause 8(2), or is clean seawater used in a land based premises or place, 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 risk management programme to ensure the water meets the original standard at the point of use, all operations involving that water must cease.

4.3.8 HC Specs – Schedule 1 and Schedule 2

HC Specs Schedule 1 & 2 (434 KB PDF)

4.4 PROCEDURES

4.4.1 Water supply

An adequate supply, volume, temperature (if applicable) and pressure of potable water and/or clean seawater must be available and used for:

- washing product (if necessary);
- cleaning of product contact equipment and surfaces;
- cleaning and sanitation of reusable containers and packaging;
- washing of hands of personnel involved in the handling of any edible product, packaging, and product contact equipment; and
- any other activity where water comes into direct or indirect contact with any edible product.

4.4.2 Assessment of proposed water supply

4.4.2.1 Before processing at a seafood premises can begin, the operator must carry out an assessment of the proposed water supply to determine its potability and suitability for use. Possible water supply types include:

- independent supply with no further treatment by the operator;
- operator own supply (with or without further treatment);
- water supply where an alternative water quality standard as described in clause 8(2) of the HC Specs is used; or
- clean seawater supply in a land based premises or vessel.

The scope of the assessment will depend on the type of water supply being used and the available evidence.

4.4.2.2 Assessment for the following supplies must determine whether the supply meets the standard for potable water described in Table 1:

- an independent supply with no further treatment by the operator;
- an independent supply that is treated on-site by the operator; or
- clean seawater supply.

Evidence that can be used to determine whether the supply meets the standard for potable water/clean seawater could include:

- a written statement from the independent water supply authority that the water supply to the premises will be potable in accordance with the requirements of the NZDWS; or
- a similar written statement from the harbour/port authority in the case of vessels; or
- results of analyses showing that the water meets the requirements of the NZDWS; or
- a declaration that the clean seawater will be taken from a place that is remote from estuaries, fiords, inlets, harbours and river mouths and is a sufficient distance offshore so that it is not affected by any actual or potential pollution sources; or
- results of analyses showing that the clean seawater meets the requirements of the standard.

The operator should ensure that all new water, including seawater intakes, and all alterations to existing water reticulation or treatment systems that may affect the potability of the water, are inspected and tested in accordance with the above recommendations, to verify that they have not affected the quality of water supplies to the premises.

If an independent water supplier (e.g. local council) provides evidence that the water supplied to the premises complies with the NZDWS, the operator may rely on this evidence, rather than duplicate the supplier's tests. The supplier should provide this evidence in a regular and timely manner.

4.4.2.3 Assessment of operator own supplies (with or without further treatment) must include completion of the Water Supply Assessment Checklist from Schedule 1 of the current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice, and an assessment to determine whether or not the supply meets the standard for potable water described in Table 1.

The Water Supply Assessment Checklist is used to determine whether the water source is secure or satisfactory, and what, if any, additional treatment and/or other corrective action the operator should apply. It also provides a simple way of documenting the water management plan.

For guidance on ways to keep roof water safe - see Water Collection Tanks and Safe Household Water, Ministry of Health, August 1999 (code 10148).

For guidance on protecting bore and well water - see Secure Groundwater (Bores and Wells) For Safe Household Water, Ministry of Health, March 2000 (code 1129). Both documents are available on the Ministry of Health website under the section on Information for the Public:
http://www.moh.govt.nz (external website).

For more information on water safety and tank installation, see Household Water Supplies (code 4602), available from your local public health service or local authority (council).

If you are concerned about your water supply, contact a Health Protection Officer at the local public health service or an Environmental Health Officer at the local council. They will be able to recommend a local water testing laboratory.

4.4.2.4 The water supply must be sourced, inspected, tested, and, where necessary, treated so as to provide potable water or clean sea water supply and minimise contamination.

4.4.2.5 The clean seawater intake on a fishing vessel must be situated so as to minimise contamination of the clean seawater by waste water discharges, and waste and engine coolant outlets.

4.4.2.6 Quality of potable water and clean sea water.

4.4.2.7 The criteria for potable water are given in Table 1. The criteria for clean seawater used in land-based premises are given in Table 2.

Table 1: Criteria for potable water

Measurement	Criteria
E.coli or Faecal coliforms	Must not be detectable in any 100 ml sample
Total coliforms	Must not be detectable in any 100 ml sample
Chlorine (when chlorinated)	Not less than 0.2 mg/l (ppm) free available chlorine with a minimum of 20 minutes contact time
pH (when chlorinated)	6.5 – 8.0
Turbidity	Should not routinely exceed 1 NTU, must not exceed 5 NTU

Table 2 Criteria for clean seawater in land-based premises

Measurement	Criteria
Escherichia coli	Must not be detectable in any 100 ml sample
Total coliforms (in treated water)	Must not be detectable in any 100 ml sample

4.4.3 Summary of requirements for water from different sources

Water for use in seafood premises may come from different sources. It may be sourced from the town supply (or other independent supply) or it may be the operator's own supply. Seafood premises are able to use potable water and/or clean seawater. Table 3 provides a summary of the requirements associated with each water source.

Table 3: Summary of requirements for specific water sources

Source	Requirements
Town supply or other independent supply with no additional treatment[1] by the operator (applies to land-based premises and fishing vessels)	Reticulation management - section 4.4.5 Procedures for non-complying water – section 4.4.6 Handling and disposition of contaminated materials – section 4.4.7
Potable water supplied on fishing vessels by the operator	Note: For exporters – see guidance in section 4.4.10 Water sampling and testing
Town supply or other independent supply with additional treatment[1] by the operator – land-based premises	Reticulation management - section 4.4.5 Procedures for non-complying water – section 4.4.6 Handling and disposition of contaminated materials – section - 4.4.7 Water management plan – section 4.4.8 Water sampling and testing – section 4.4.10
Operator's own supply (e.g. water sourced from, wells, bores, or artesian supply, rivers and lakes, reservoirs, or rainwater)	Assessment[2] and reassessment of water supply status, - section 4.4.2 Reticulation management - section 4.4.5 Procedures for non-complying water – section 4.4.6 Handling and disposition of contaminated materials – section - 4.4.7 Water management plan – section 4.4.8 Water sampling and testing – section 4.4.10
Clean seawater for land-based premises	Reticulation management - section 4.4.5 Procedures for non-complying water – section 4.4.6 Handling and disposition of contaminated materials – section - 4.4.7 Water management plan – section 4.4.8 Water sampling and testing – section 4.4.10
Clean seawater used on fishing vessels	Procedures for non-complying water – section 4.4.6 Handling and disposition of contaminated materials – section 4.4.7

[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.

4.4.4 Requirements for water from any source

The requirements given in Table 3 apply to:

- water from an independent supplier (e.g. council or town supply for land-based premises or wharf supply for fishing vessels);
- water supplied by the operator of a land-based premises for their own use (e.g. roof water, river water, water from a bore);
- potable water supplied on fishing vessels by the operator; and
- clean seawater supplied to land-based premises.

4.4.5 Management of reticulation system (i.e. reticulation management plan)

Operators to whom section 4.4.4 applies must document and implement a Reticulation Management Plan, which includes the elements set out in HC Spec 11.

The documented reticulation management plan should also include:

- an up-to-date plan of the reticulation system; and
- procedures for systematic checks:
- on all water reticulation pipe work and equipment, and storage facilities; and
- on integrity of all backflow prevention devices and valves connecting potable and non-potable water reticulations; and
- for evidence of leaks.

4.4.5.1 The water reticulation system must be designed, installed and operated in a manner that prevents:

- cross connections between potable water, clean seawater (if being used) and non-potable water;
- stagnant water (i.e. no dead ends or unused pipes in the system); and
- back flow that may cause contamination of the water supply;
- water pipes, storage tanks and facilities, and other parts of the reticulation system must be maintained in good condition.

4.4.5.2 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 and other material is flushed out of the system.

4.4.5.3 The water reticulation system should also meet the requirements of relevant New Zealand legislation such as the Building Act and any local council regulations. These include (but are not necessarily limited to):

- The Water Supplies Protection Regulations
- The Building Act
- The Building Regulations and The Building Code
- Building Industry Authority (BIA) Approved Document G12 Water Supplies, referenced to Australian Standard AS 3500.1:1992 National Plumbing Drainage Code, Part 1, Water Supply as a design method in the Verification Method G12/VM1.

Operators should also consider the following standards:

- the provisions of AS 3500.1 apply to any new premises, alterations and additions to existing premises;
- the provisions of AS 3500.1 apply to potable cold, warm and hot water reticulation systems (devices must be fit for the purpose intended).

A code of compliance or building consent, if available, is good evidence of meeting the requirements of the Building Act and any local council regulations.

4.4.5.4 Identification of water lines

All water lines must be identified so that potable water, clean seawater and non-potable water lines are distinguishable. Water lines conveying non-potable water must be clearly identified at:

- all outlets;
- junctions and valves;
- both sides of all wall penetrations; and
- at any other place where identification is necessary to distinguish water type.

The code used for identification of water lines may be that as described in NZS 5807:1980 Industrial Identification by Colour, Wording or Other Coding. Operators can determine their own identification system which should be documented as part of the RMP.

4.4.6 Procedures for non-complying water

4.4.6.1 All operations requiring the use of potable water and clean seawater used in land-based premises must cease if:

- 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 risk management programme to ensure the water is potable at the point of use; or
- 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 risk management programme to ensure the water meets the original standard at the point of use; or
- a ‘boil water’ notice is issued and the operator is not able to comply with it in respect of all potable water, or alternatively not able to treat the water to ensure that it is potable, or to use an alternative supply which meets the standards.

The local council may issue a 'boil water' notice when faecal coliforms or E. coli persist in the water despite successive corrective actions, including disinfection. Refer to the New Zealand Drinking Water Standards (NZDWS). This action is taken only when other forms of disinfection have not been effective. If is not practical for operators to boil water, switch to an alternative supply or adequately treat all water, ceasing operations may be the only available option.

4.4.6.2 All operations requiring the use of clean sea water in land-based premises or place must cease if 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 risk management programme to ensure the water meets the original standard at the point of use.

4.4.7 Handling and disposition of contaminated materials

If contamination with non-potable water occurs:

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

The operator must also comply with the requirements and procedures for non-complying products given in section 35 of this code.

Note that non-potable water may sometimes be used in seafood premises (e.g. for flushing toilets and urinals, washing down areas outside the fish premises like roadways and external drains, washing down truck exteriors, wash down of inedible areas), as long as the operator's risk management programme identifies any associated hazards, together with their controls.

4.4.8 Additional requirements for a water management plan for specified water supplies

4.4.8.1 In addition to satisfying the requirements of section 4.4.5 of this Code of Practice, the operator must document and implement a water management plan for:

- water from an independent supplier (e.g. town or council) that is further treated by the operator of a land-based premises solely for the operator's use; and
- clean seawater used in land-based premises; and
- water supplied by operators of land-based premises for their own use (e.g. water sourced from bore, stream, river or roof).

4.4.8.2 The documented Water Management Plan must include the elements set out in HC Spec 12 (2) and HC Spec 13.

4.4.8.3 Operators who supply their own water must assess the water supply at least once every 3 years by completing the Water Supply Assessment Checklist.

4.4.8.4 If changes to the water source or its environment occur, the operator must re-assess the water supply according to the following schedule:

- in the case of a new source of water being used (that is, the source changes or a new source is added), the checklist must be 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 must be completed within 1 month.

4.4.9 Water treatment

4.4.9.1 If water supplied to land-based premises is found to be not potable or if seawater supplied to land-based premises is found to be microbiologically contaminated, the water must be treated to ensure that, at the point-of-use, the water is potable or meets the clean seawater requirements.

4.4.9.2 The operator must document details of the treatment in the water management plan including:

- the type of water treatment; parameters; procedures for control, monitoring/testing; acceptable limits;
- a water sampling and testing programme for monitoring the effectiveness of the specific water treatment applied; and
- corrective action procedures when the water source is found to be unsatisfactory based on the results of any tests done.

Examples of water treatment that may be applied by the operator to an independent supply, their own supply or to clean seawater are: chlorination, ultraviolet treatment, heating and filtration. The operator should discuss with the supplier of the particular treatment, the types and frequency of the water testing necessary to confirm the effectiveness of the treatment and to ensure that it does not adversely affect the quality of the water.

4.4.9.3 Chlorine disinfection

When a water supply is treated with chlorine, a residual free available chlorine level of 0.2 mg/l (ppm) must be maintained throughout the reticulation system. The system must be designed so that the chlorine has a minimum contact time of 20 minutes prior to use of the water, and must be monitored on a regular basis to demonstrate that there has been adequate disinfection.

Options for monitoring include:

- fitting automatic water chlorination systems with alarm devices that indicate when the systems have ceased to function correctly; or
- manual checking of the system.

4.4.9.4 Ultra-violet (UV) light disinfection

If UV treatment is used, the disinfection unit must be adequate to disinfect the maximum flow for the system it is to serve. UV light water disinfection systems must be fitted with

monitoring and alarm systems to automatically shut down the water supply to the UV water treatment unit, in the event of:

- power failure to the treatment unit;
- lamp failure of the treatment unit; and
- excessive water turbidity.

As UV disinfection has no residual sanitising ability UV-treated water can be recontaminated immediately after treatment. To control this hazard, there should be no holding tanks or reservoirs between the disinfection unit and the point of use.

4.4.10 Water sampling and testing

Potable water must meet the criteria set out in Table 1 and clean seawater used in land-based premises must meet the criteria set out in Table 2. The minimum testing frequency required for potable water is set out in Table 4.

The operator should:

- take samples from a number of points in the reticulation system to ensure that the sampling is representative of the system as a whole;
- record the location of each sampling point so the source can be identified (this could be done by identifying the water sampling points on the reticulation plan);
- ensure that samples are collected by trained personnel and handled and transported so there is no significant change in the quantitative value of the determinands;
- ensure that samples for microbiological analysis are analysed promptly.

If the laboratory cannot analyse samples within 1 hour of collection the operator should:

- immediately chill the samples to 10°C or cooler (but do not freeze) and deliver them to the laboratory within 6 hours of collection; or
- immediately chill the samples to 2 - 5°C and deliver them to the laboratory within 24 hours of collection.

Table 4: Frequency of testing for potable water and clean seawater used in land-based premises

Daily water use	Microbiological testing	Turbidity testing	pH testing (for chlorinated water)	Chlorine testing (for chlorinated water)
Using < 100m3/day and product packaged at all times	1 per 6 months	1 per 6 months	1 per 6 months	Daily
Using 100 -1000 m3/day and product packaged at all times	1 per 3 months	1 per 3 months	1 per 3 months	Daily
< 2000 m3/day	1 every month	1 every month	1 every month	Daily
2000 – 10,000 m3/day	1 every 2 weeks	1 every 2 weeks	1 every 2 weeks	Daily
> 10,000 m3/day	1 every week	1 every week	1 every week	Daily

Operators who use an independent water supply that is not further treated on site do not have to carry out water testing. However, they should consider using simple, low cost techniques such as monitoring free available chlorine levels, taste and odour to pick up any changes in water quality.

Export premises should carry out microbiological sampling to confirm the safety of point-of-use water.

4.4.11 Microbiological non-compliance with the water management plan - corrective actions.

4.4.11.1 The supplier of an independent water supply must notify the operator whenever faecal coliforms or E. coli are identified in that supply. Once notified, the operator must start daily point-of-use sampling. No further actions are necessary unless the sampling identifies faecal coliforms or E. coli at the point of use.

4.4.11.2 If faecal coliforms or E. coli are identified at the point of use, the operator must follow the corrective action flow path outlined in Appendix 1, or in the NZDWS for responses to contamination of a drinking-water supply distribution zone.

4.4.11.3 If total coliforms are identified at the point of use, the operator must re-sample the water supply, investigate the cause of the problem and take corrective action.

The following super-chlorination options may be used to disinfect the reticulation system after microbiological contamination:

1. Flush the entire water system including, storage tanks and distribution pipes with super-chlorinated water (>40 ppm) for at least 30 minutes, followed by an overnight soaking (12 hours) of the entire system with super-chlorinated water.

   After the overnight soaking, test the water for free residual chlorine at the point of use from 5 randomly selected sampling points, and then drain the water out. If no residual chlorine is detected, repeat the super-chlorination procedure. Otherwise refill the system with potable water or clean seawater.

OR

2. Flush the entire water system with super-chlorinated water at 200 ppm and leave for 30 minutes. After the 30 minutes soaking, test the water for free residual chlorine at the point of use from 5 randomly selected sampling points and drain the water out. If no residual chlorine is detected, repeat the super-chlorination procedure. Otherwise rinse the system and refill it with potable water or clean seawater.

4.4.11.4 If chemical Maximum Acceptable Values (MAVs) are exceeded, the operator must take the following corrective actions:

- follow the requirements of the NZDWS in relation to non-compliance with a chemical MAV; or
- resample the water supply, investigate the cause of the non-compliance and take appropriate action; and
- continue weekly sampling until the levels of chemicals detected are less than the relevant MAVs.

4.4.11.5 If radiological limits are exceeded, the operator must follow the requirements of the NZDWS for non-compliance with the relevant radiological MAV.

4.4.11.6 Exemption from water monitoring during periods of closure

Operators who cease processing for a period of time (e.g. several months of "off season") may suspend routine monitoring provided:

- there is no holding, processing, packing or storage of seafood during the period when monitoring is suspended; and
- the operator develops a documented programme outlining the procedures to be followed before holding, processing, packing or storage of seafood recommences, to ensure that the water in the premises is potable or clean seawater.

4.5 RECORDS

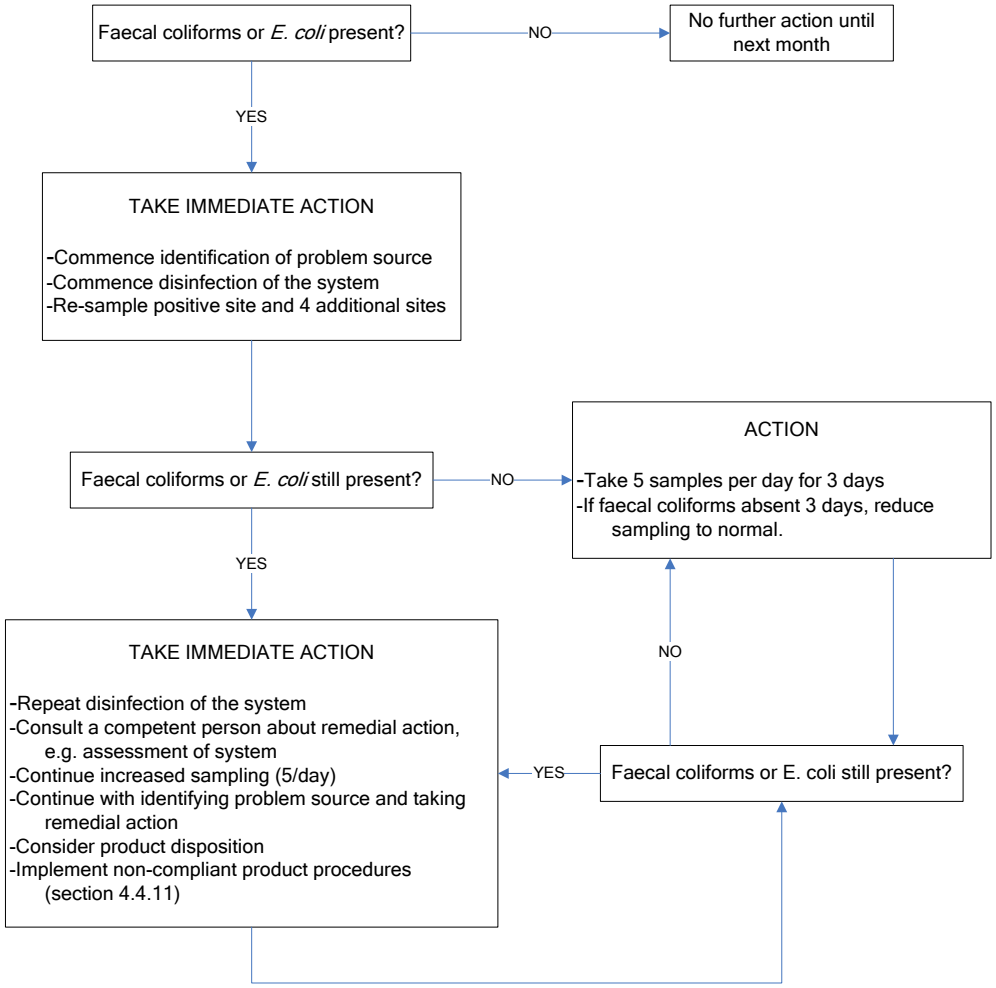
The operator must keep relevant records demonstrating compliance with documented procedures. These must include:

- monitoring carried out, problems identified and corrective action taken;
- results of any analysis undertaken.

Examples of other records that may be used to demonstrate compliance are:

- pre-operational or daily checks
- evidence from supplier
- training records.

Appendix 1 – Corrective action schedule



5 Cleaning and Sanitation

Amendment 0

July 2011

5.1 PURPOSE AND SCOPE

To ensure the effective cleaning and sanitation of the premises, facilities and equipment so as to prevent or minimise the contamination of seafood products.

5.2 SOURCES OF HAZARDS

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

5.3 MANDATORY REQUIREMENTS

5.3.1 AP Reg 11

All operators must establish and carry out effective procedures to:

a) ensure appropriate and adequate maintenance, cleaning and sanitation of processing premises, facilities, essential services, and equipment (including conveyances); and
b) manage waste; and
c) control pests.

5.3.2 HC Spec 21 (1)

Only approved maintenance compounds may be used during processing operations or in the maintenance of processing areas, facilities and equipment.

5.4 PROCEDURES

5.4.1 Cleaning programme

The operator must develop and document a cleaning and sanitation programme for processing areas, equipment, storage areas, support areas and amenities.

The programme must include the following information:

- areas/equipment to be cleaned;
- procedures and work instructions for all cleaning and sanitising operations, including any specific competencies required;
- detergents/sanitisers to be used;

- frequency of cleaning;
- recording of cleaning procedures;
- personnel responsible; and
- methods of verifying the cleaning and sanitation programme.

Verification methods may include:

- visual and other sensory assessment of equipment and the environment,
- checks of the cleaning programme in action including:
  - visual checks of the procedures taking place,
  - measurement and mixing of cleaning chemicals,
  - checks on the strength of cleaning solutions when prepared,
  - checks to ensure correct contact times are being observed;
- taking swabs and forwarding them to an approved analytical laboratory (use of gauze swabs is recommended);
- use of contact slides and hygiene test swabs which are designed for operator use, analysis and interpretation according to the manufacturers' criteria.

The manufacturers of contact slides and hygiene test swabs (or the testing laboratory) will usually supply information for interpreting results which will be specific to the type of equipment being used.

The following microbiological guidelines may be used for monitoring the efficacy of the cleaning and sanitation programme for product contact surfaces. However operators should set criteria that are appropriate for their operation, the type of plant or equipment being swabbed and the equipment's intended use.

Grade per 10 square cm for total bacteria:

- 0-540 satisfactory;
- 540-2700 fairly satisfactory;
- over 2700 unsatisfactory.

Grade per square foot for total bacteria:

- 0-5000 satisfactory;
- 5000-25,000 fairly satisfactory;
- over 25,000 unsatisfactory.

Contact slides and hygiene test swabs should be used in accordance with the manufacturer's instructions for application and, where appropriate, calibration.

For further information refer to:

Guidelines for Verification of Cleaning Programmes (55KB PDF).

5.4.2 General cleaning

5.4.2.1 Cleaning and sanitising operations must be carried out in such a manner that they do not contaminate seafood products, ingredients, additives or containers.

5.4.2.2 All product surfaces, including equipment, must be cleaned:

- at least at the end of each working day;
- whenever surfaces become contaminated or come into contact with waste;
- when changing from processing raw seafood products to processed seafood products, and when changing from seafood product types such as from shellfish or freshwater fish (e.g. eel, salmon) to other types of fish; and
- in the case of fishing vessels, at each break in processing.

5.4.2.3 Cleaning and sanitising of equipment used for ready-to-eat seafood products must be carried out:

- every half shift or every 4 hours; or
- at the end of each shift; or
- at the start of each new process operation (unless it has already been cleaned and sanitised); or
- at a frequency that has been demonstrated to achieve the same outcome.

5.4.3 Cleaning – processing area

5.4.3.1 Products, packaging material and other materials that may be contaminated during wash down must be removed from the area and stored in appropriate locations, or they must be protected by covers.

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

> Only low to medium pressure hosing should be used to remove seafood products soil. High pressure hosing is not recommended as it is likely to cause contamination by splashing, and create aerosols capable of carrying contaminants and micro-organisms for considerable distances.
>
> Other effective means of cleaning floors include sweeping, flushing and use of squeegees.

5.4.3.3 Drains in the processing area (other than on fishing vessels) must be sanitised daily to reduce contamination levels and prevent the formation of foul odours.

> Drains should be sanitised during the process of rinsing sanitiser from equipment and surrounding floor areas. Pouring large amounts of sanitiser concentrate directly into drains is not recommended.

5.4.3.4 Before sanitising, seafood products contact surfaces and equipment must be washed in cold potable water or cold clean seawater, to remove solid residues.

Sanitising should be carried out using chemical sanitisers or hot water (82°C).

5.4.3.5 Equipment (e.g. tubs) that is used for conveying material not for human consumption, must be cleaned and sanitised:

- at the end of each working day in the case of premises other than fishing vessels; and
- at each break in processing in the case of fishing vessels.

5.4.3.6 Cleaned and sanitised portable appliances (e.g. knives, trolleys) must be:

- stored so that they are protected from contamination (e.g. dust, splashes); or
- cleaned and sanitised immediately before they are taken into a processing area.

5.4.4 Cleaning of storage areas

5.4.4.1 Packed products, raw material, packaging and other materials must be stacked and stored in a tidy manner. Adequate space must be available to allow effective cleaning in the storage area.

5.4.4.2 Spills must be cleaned up immediately.

5.4.4.3 Damaged packaged products and other materials must be removed and disposed of as soon as possible.

5.4.4.4 Dry stores must be kept dry and must be cleaned regularly by sweeping or vacuuming.

5.4.4.5 Cleaning of amenities

Amenities must be cleaned regularly and maintained in a hygienic condition.

Specific attention should be given to areas where clean protective clothing (including gumboots) is stored.

5.4.5 Maintenance and storage of cleaning equipment

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

5.4.5.2 Cleaning equipment that will be reused (e.g. brushes) must be sanitised after each use.

Reusable cleaning equipment should be cleaned and sanitised, then stored so that it is allowed to dry.

5.4.5.3 Equipment (e.g. brushes, brooms, etc.) used for cleaning and sanitising in seafood products premises, including fishing vessels, must be stored in a designated area in such a manner as to prevent contamination of seafood products, ingredients, additives or containers.

5.5 MONITORING

The operator or responsible person must carry out regular checks on compliance with documented procedures and on 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.

Monitoring options include:

- before processing: daily, visual check of all processing areas to ensure they are clean and ready for processing (pre-op check).
- during processing: daily, visual check of all processing areas to ensure the cleaning programme is effective.
- weekly check of other product support areas (e.g. chemical stores, packaging stores, dry stores, cold stores) to ensure the cleaning programme is effective.

5.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- pre-operational, daily, weekly checks;
- cleaning records;
- list of approved chemicals;
- training records; and
- verification of cleaning records (e.g. reality checks, chemical strength tests, microbiological tests).

Refer to Part 2, section 38 of this COP for record keeping requirements.

6 Personal Health and Hygiene

Amendment 0

July 2011

6.1 PURPOSE AND SCOPE

To ensure that all personnel are medically fit to perform their duties, and that they comply with good hygienic practices. Personnel include all workers, contractors providing services, and visitors.

6.2 SOURCES OF HAZARDS

Source	Examples of hazards
Person	Bacterial pathogens (e.g. *Salmonella* spp., *E. coli* spp., *Staphylococcus aureus*) Hepatitis A virus
Clothing, protective equipment (e.g. earmuffs), footwear	Bacterial pathogens (e.g. *Salmonella* spp., *E. coli* spp., Clostridium spp.) Physical objects (e.g. parts of rubber gloves, pieces of plastic)
Personal items	Metal objects (e.g. jewellery, pens, hair clips)

6.3 MANDATORY REQUIREMENTS

6.3.1 AP Reg 12

The operator must ensure that all personnel whose presence or action within the premises may result in contamination of product:

- wear appropriate protective clothing, where necessary;
- follow an appropriate personal hygiene routine; and
- behave in such a manner as necessary to minimise contamination of product, other inputs, packaging and the processing environment.

6.3.2 HC Spec 23 (1)

The operator must take reasonable measures to ensure that a person (including any visitor or contractor) who is -

a) 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 animal material, product or associated things; or
b) 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 of animal material or the fitness for intended purpose of animal product.

6.3.3 HC Spec 23(2)

A product handler, or any other person who may affect the suitability for processing of animal material or fitness for intended purpose of animal product, after suffering from an illness described in subclause (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 animal material or animal product, prior to resumption of work in that role.

6.3.4 HC Spec 23(3)

A product handler, or any other person who may affect the suitability for processing of animal material or fitness for intended purpose of animal product, who suffers from a condition described in subclause (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 the animal material or animal product, or that the handler or other person is adequately protected from being a source of contamination.

6.4 PROCEDURES

6.4.1 Health of personnel

6.4.1.1 The operator must ensure that all employees understand relevant health and hygiene requirements and that visitors and contractors are made aware of these requirements.

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.

6.4.1.2 Personnel 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, Hepatitis A virus infection or other infections likely to be transmissible via food. See Section A, Part 1, of the First Schedule of the Health Act 1956 for more details.

6.4.1.3 Seafood products handlers suffering from any of the conditions identified in section 6.4.1.2 may not work in food contact areas until they have been examined by a registered medical practitioner and certified as being no longer infectious.

6.4.1.4 Seafood products handlers suffering from boils, sores or open wounds may not work in food contact areas unless they have been assessed by a suitably skilled person nominated by the operator, as unlikely to contaminate the seafood products.

The suitably skilled person should have sufficient knowledge and experience to make this determination (e.g. a supervisor or someone with first aid or nursing qualifications).

One way to ensure that the handler is unlikely to contaminate the product is to apply a waterproof dressing which can be:

- properly secured to prevent it from falling off; and
- kept clean.

6.4.1.5 Any injury, wound, or cut sustained during processing must be treated immediately and dressed with a secure waterproof dressing to prevent contamination of seafood products, 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.

To protect the dressing from moisture, workers should wear gloves (for wounds on the hands), and protective sleeves or clothing over wounds on the forearm.

6.4.2 Hygienic practices

6.4.2.1 The operator must document and implement procedures for personnel hygiene that apply to all workers in food handling, preparation and related areas, and to all contractors and visitors.

6.4.2.2 Personnel in processing areas must not wear insecure jewellery and must remove from their hands any jewellery that cannot be adequately sanitised.

Plain wedding bands (i.e. no stone) are acceptable, as long as the wedding bands cannot be easily dislodged and can be effectively cleaned in the same manner as hands.

6.4.2.3 Personal items such as sweets and cigarettes must not be taken into processing or packing areas.

6.4.2.4 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 seafood products or seafood products contact surfaces.

6.4.3 Protective clothing

6.4.3.1 All personnel who enter any processing or packing area must wear suitable, clean protective clothing and foot wear. Protective clothing (e.g. coats, overalls, aprons, waterproof armbands, hair restraints, and gloves) must be visibly clean at the start of each day's operation and be of a colour that does not disguise contamination.

Hair restraints include paper, cloth or plastic hats or hair nets. Several types of beard masks and all-over hat styles are available for personnel with full beards. Each operator should set their own policy on acceptable facial hair length.

6.4.3.2 Personnel who handle exposed product must wear protective clothing that suitably covers all street clothing, along with a water-proof front or a waterproof apron. If clothing sleeves are below the elbow, personnel must wear waterproof arm covers or waterproof sleeves.

6.4.3.3 Any protective gloves used must be non-absorbent, and may be either single use or reusable. Reusable gloves must be washed and sanitised at meal breaks, at the end of each working day, or whenever contaminated.

6.4.3.4 Personnel who work in raw seafood products areas must change their protective clothing before entering areas where ready-to-eat seafood products is produced.

6.4.3.5 Personnel assigned to work in dedicated areas (e.g. fish meal operators) where materials for animal consumption are handled must wear some form of identification to distinguish them from other seafood products processors; and before entering areas processing seafood products for human consumption, such personnel must:

- remove any contaminated outer clothing, footwear or coverings;
- thoroughly wash any exposed contaminated skin surfaces; and
- dress in clean protective clothing as described in 6.4.3.1 and 6.4.3.2 above.

This clause applies to staff working in dedicated areas for processing animal consumption products. Its purpose is to prevent contamination of human consumption products, should the staff be required to enter areas processing products for human consumption.

Material derived from normal processing (e.g. fish offal, fish heads) which is intended for bait, to be sold for further processing for animal consumption or for disposal as waste, may be held and/or packed in a processing area. The operator should consider any potential risks of contamination and implement measures to mitigate these.

6.4.3.6 All protective clothing must be kept in good condition, changed (or in the case of waterproof clothing, cleaned) at least daily, or more often if it becomes excessively contaminated, and, while not in use, stored so as to protect it from contamination.

6.4.3.7 Workers must use boot wash facilities or foot baths to clean footwear before, or on, entering processing areas and must change other protective clothing if it becomes contaminated from the external environment.

6.4.3.8 Workers handling exposed product must not wear waterproof protective clothing (e.g. aprons, plastic sleeves, gloves) or equipment (e.g. knives and steels) outside the processing area, except in the case of emergencies.

6.4.4 Hand washing and sanitising

6.4.4.1 All personnel must thoroughly wash (with hand detergent and water), and dry hands and sanitise (where appropriate):

- when entering any processing or packing areas;
- before handling any seafood products or exposed packaging;
- after using the toilet;
- after handling or coming into contact with waste and contaminated surfaces or material;
- if working in a raw product area, before entering a cooked or ready-to-eat product area; and
- any other time when hands may become contaminated (e.g. after coughing, sneezing or blowing the nose).

Hand sanitisers must be used in areas where cooked or ready-to-eat seafood products is processed or packed. Any chemical used must be MAF approved and used in accordance with the manufacturers' instructions. For further information see:
Approved Maintenance Compounds Manual (382KB PDF)

6.4.4.2 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).

6.4.5 Visitors and contractors

6.4.5.1 Visitors and contractors who wish to enter a seafood products processing or packing area must comply with the operator's documented health requirements and follow all hygienic practices and procedures required for food handlers.

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

6.5 MONITORING

The responsible person must regularly check compliance with documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options could include the following daily checks: • before processing: checks to confirm all staff are following correct procedures for wearing protective clothing, and for entering the processing areas. • during processing: checks to confirm that all staff are complying with requirements for personal hygiene and hygienic work practices.

6.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include:

- monitoring carried out, problems identified and corrective action taken
- details of medical certificates or assessments of staff.

Examples of other records that could be used to demonstrate compliance are:

- pre-operational or daily checks
- designated area checks.

Refer to Part 2, section 38 of this COP for record keeping requirements.

7 Control of Chemicals

Amendment 0

July 2011

7.1 PURPOSE AND SCOPE

To ensure the proper use and storage of chemicals so as to prevent or minimise the contamination of seafood products, packaging, equipment, and the processing and storage environment. Chemicals include maintenance compounds used for cleaning, sanitation, fumigation, pest control and for repairs and maintenance of equipment.

For approvals and exemptions, including exempt areas see:
Approved Maintenance Compounds Manual (382KB PDF)

7.2 SOURCES OF HAZARDS

Source	Examples of hazards
Maintenance compounds (e.g. cleaning agents, pesticides, lubricants)	Chemical residues
Chemical containers	Chemical residues

7.3 MANDATORY REQUIREMENTS

7.3.1 HC Spec 21(1)

Only approved maintenance compounds (see the Approved Maintenance Compounds Manual (382 KB PDF)) may be used during processing operations or in the maintenance of processing areas, facilities and equipment.

7.3.2 HC Spec 21 (2)

All containers of chemicals held and used within the premises must be labelled with the name of the chemical as they appear in the list of approved maintenance compounds contained in specifications.

7.3.3 AP Reg 11(3)

Chemicals must be stored, handled, and used in a manner that minimises contamination of seafood products, other inputs, packaging, equipment, and the processing environment.

7.4 PROCEDURES

7.4.1 The operator must maintain a list of all approved chemicals used and held in the premises.

7.4.2 When not in use, chemicals must be stored in a designated area (e.g. shelf, cupboard, room) and kept separate from seafood products, ingredients, and packaging.

7.4.3 All chemicals must be used according to the manufacturer's directions and the conditions of MAF approval. Directions for use must be readily available to the user (e.g. given in the label, posted on the wall or in product information data sheets).

7.4.4 Chemicals must be handled and used, by or under the supervision of, suitably trained personnel.

7.4.5 When specified in the conditions of use set out in Approved Maintenance Compounds Manual, products and exposed packaging must be removed from the area or kept protected (e.g. covered) prior to the use of chemicals which may result in their contamination.

7.4.6 When specified in the conditions of use set out in Approved Maintenance Compounds Manual, equipment and other product contact surfaces must be cleaned by thorough washing after exposure to any chemical (e.g. after spraying with insecticide).

7.4.7 Disposal of empty chemical containers must be in accordance with manufacturer's instructions. Re-use of empty chemical containers may be permitted provided that these containers are not be used in a way that could contaminate food.

7.4.8 When chemical contamination occurs:

- affected products must be considered unfit for human consumption and an assessment must be made to determine its suitability for animal consumption;
- affected product 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 seafood products.

7.5 MONITORING

The responsible person must regularly check compliance to documented procedures.

Monitoring options include:

- daily and weekly checks to confirm chemicals are being handled and used correctly.
- annual (or when new chemicals are purchased) checks to confirm that all chemicals are approved and identified on the company register.

7.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include:

- list of approved chemicals used and held in the premises;
- monitoring carried out, problems identified and corrective action taken.

> Examples of other records that could be used to demonstrate compliance are training records of workers trained on chemical handling and use.

Refer to Part 2, section 38 of this COP for record keeping requirements.

8 Pest Control

Amendment 0

July 2011

8.1 PURPOSE AND SCOPE

To ensure the effective control of pests so as to prevent or minimise the contamination of seafood products, packaging, ingredients, equipment, and the processing and storage environment. Pests include rodents, birds, insects, dogs and cats.

8.2 SOURCES OF HAZARDS

Source	Examples of hazards
Insects, rodents, birds, cats and dogs	Bacterial pathogen, e.g. *Salmonella*, *Campylobacter* spp., *E.coli* spp., *Listeria monocytogenes* Physical, e.g. dead insects or parts of insects
Pesticides	Chemical residues

8.3 MANDATORY REQUIREMENTS

8.3.1 AP Reg 10

Premises, facilities, equipment and essential services must be designed, constructed, located and operated to minimise the exposure of animal product to hazards and other risk factors from pests.

8.3.2 AP Reg 11 (1) & (2)

Effective procedures must be established and carried out to minimise the exposure of seafood products, packaging, other inputs, equipment, and the processing environment to hazards associated with pests.

8.3.3 AP Reg 11(3)

Chemicals must be stored, handled, and used in a manner that minimises contamination of animal product, other inputs, packaging, equipment, and the processing environment.

8.4 PROCEDURES

8.4.1 Pest control programme

The operator must document a pest control programme which includes the following information:

- the person or agency responsible for undertaking pest control activities;
- pest control procedures;

- monitoring and corrective action procedures;
- site plan indicating location of baits and other pest control devices;
- monitoring procedures and frequency; and
- corrective action procedures.

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 person or agency employed is competent to perform the task.

Operators using a contracted pest control agency should also document procedures for addressing pest control problems that arise between scheduled agency visits.

8.4.2 Prevention of infestation and access of pests

8.4.2.1 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.

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

To prevent the entry of insects, birds and other pests, mesh screens should be used on windows, doors, ventilators and any other openings in processing areas that may be kept open during operations.

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

8.4.2.4 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 sources and breeding sites (e.g. bird's nests, long grass).

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

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

8.4.3 Use of pesticides

Pest control chemicals (rodenticides and insecticides) must be handled, used and stored according to the control procedures given in Part 2, Section 7: Control of Chemicals.

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

Seafood products and exposed packaging should be removed from the area or kept protected (e.g. covered) prior to the use of chemicals that may contaminate them. Equipment and other product contact surfaces should be cleaned by thorough washing after exposure to any chemical (i.e. after spraying with insecticide is completed).

8.4.4 Use of pest traps

8.4.4.1 Pest traps (including rodent boxes, bait stations and electric insect traps) must be positioned so as to minimise contamination of seafood products, additives, ingredients or containers.

Bait stations should not be located inside any processing or product storage area. The location of pest traps should be identified on a site or building plan, or other suitable record.

8.4.4.2 Rodenticides must be used only in enclosed bait boxes.

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

- be constructed so they catch and secure insects in a suitable drawer, tray or adhesive mat that facilitates the capture and removal of insects;
- not cause any air-borne contamination; and
- be sited so there is no contamination from insects falling on to exposed seafood products, packaging, or product contact surfaces.

Adhesive traps may be suitable for processing areas. Operators should take care when using electric insect traps to ensure that they do not cause contamination of seafood products or product contact surfaces.

8.4.5 Handling and disposition of contaminated materials

When there is evidence of contamination from pests:

- the affected product must be considered unfit for human consumption and an assessment must be made to determine its suitability for animal consumption;
- the affected product contact surfaces must be cleaned and sanitised prior to reuse; and
- affected packaging materials that cannot be effectively cleaned and sanitised must not be used for packing any animal product.

8.5 MONITORING

The responsible person must regularly check ongoing compliance to documented procedures and the effectiveness of the pest control programme.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring could include:

- daily visual checks of processing and product areas for any signs of vermin activity, and for evidence that rubbish and food waste is properly managed.
- monthly checks on integrity of vermin proofing (e.g. screens, seals).
- monthly checks on bait stations to:
  - ensure their location complies with the documented plan or record, and that bait is present (the box should be cleaned and re-baited with an approved rodent bait, as necessary);
  - detect evidence of pest activity (e.g. nibbled bait, bait missing, droppings); and
  - ensure boxes are in good working condition.

When determining monitoring frequency for bait stations and pest traps, operators should consider the type of traps used and the level of pest activity. If the level of pest activity increases, they should increase monitoring frequency and take appropriate corrective actions.

8.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Refer to Part 2, section 38 of this COP for record keeping requirements.

9 Training and Competency of Personnel

Amendment 0

July 2011

9.1 PURPOSE AND SCOPE

To ensure that all staff involved in the handling of seafood products are competent to perform their duties, and are aware of and comply with good hygiene practices and with operating procedures.

9.2 MANDATORY REQUIREMENTS

9.2.1 RMP Spec 15 (1)

A risk management programme must specify the identity (either by position, designation or name) of—

a) the day-to-day manager of the risk management programme; and
b) those persons authorising all or part of the risk management programme on behalf of the operator in accordance with clause 19(1)(c); and
c) those persons performing key tasks under the risk management programme including monitoring, corrective action, and operator verification activities.

9.2.2 RMP Spec 15 (2)

A risk management programme must specify the competencies needed by the persons identified under subclause (1) to enable the effective operation of the risk management programme.

9.2.3 RMP Spec 15(3)

A risk management programme must provide for the keeping of records, in an easily accessible form, demonstrating that the competencies documented under subclause (2) have been achieved and maintained.

9.2.4 HC Spec 25(1):

An operator's risk management programme must make provision, where appropriate, for the following:

a) Not applicable
b) persons responsible for the supervision of thermal processing operations for the thermal processing of low-acid canned products must meet the competency specification set out in Schedule 3 for supervisors of thermal processing of low-acid canned products;
c) premises processing fish must have on-site during processing at least 1 person or persons who jointly or individually meet the competency specifications set out in Schedule 3 for persons involved with fish handling, and hygiene activities.

9.2.5 HC Spec 25(2)

Thermal processes for low-acid canned products must be developed under the supervision of a person who meets the competency specification set out in Schedule 3 for a qualified cannery person (thermal processing). The final process schedule must also be checked and signed off by a qualified cannery person who is independent of the development process.

9.2.6 HC Spec 25 (3)

Processes involving the depuration of bivalve molluscan shellfish must be under the direct supervision of a person who has been assessed as competent in shellfish depuration as part of the attendance at a training course approved by the Director-General.

9.2.7 HC Spec 26 (1)

The operator must ensure that the skills of those persons involved in key tasks that could have a significant impact on the suitability for processing of animal material or the fitness for intended purpose of animal product, or who are required to carry out the activities listed in clause 25, are maintained on an ongoing basis.

9.2.8 HC Spec 26 (2)

The operator must keep records demonstrating that skills identification, achievement and maintenance is being carried out effectively.

9.2.9 HC Spec Schedule 3, 2 (1)

The NZQA qualifications for persons involved with fish handling or hygiene activities are:

a) either:
   i. 5331: Handle seafood products; or
   ii. 15344: Handle bivalve shellfish products; and
b) 5332: Maintain personal hygiene and use hygienic work practices working with seafood products; and
c) 6212: Clean and sanitise plant and equipment in a seafood products processing plant.

9.2.10 HC Spec Schedule 3, 2 (2)

A person may also meet the requirements of subclause 1 if the risk management programme provides for equivalent competency to the qualifications specified in that subclause.

9.3 PROCEDURES

9.3.1 Competencies

9.3.1.1 The day-to-day manager or person authorising all or part of the RMP must be familiar with the documented risk management programme and have the following competencies:

- knowledge of those food safety matters relevant to seafood products included in the RMP, and of hygienic procedures and practices documented in this COP;
- knowledge of regulatory requirements, including responsibilities, related to the risk management programme;

- ability to liaise and communicate effectively with personnel and the regulator.

9.3.1.2 Personnel performing key tasks including monitoring, corrective action and operator verification must have:

- the knowledge and skill to carry out the relevant tasks; and
- knowledge of hygienic practices and procedures and the ability to consistently comply with these requirements.

Ideally, personnel performing key tasks should be employed in a supervisory or higher operational role within a premises for 6 months or longer.

Equivalent competencies to the fish handling and hygiene qualifications listed in HC Spec Schedule 3 in sections 9.2.8 and 9.2.9 above, include on the job or in-house training in food safety, wholesomeness, control of risks to food safety (e.g. by applying HACCP principles) and to wholesomeness.

Hazard Identification and Analysis
Persons responsible for the development or review of a hazard identification and analysis should hold the following competencies (or other training or competency equivalent):

- unit standard 17996 'Develop and review a hazard identification and analysis for a seafood products product' or higher level HACCP unit standard (such as one of those described below for development or review of a HACCP plan)

HACCP Plans
Persons responsible for the review of HACCP plan records should hold the following competencies (or other training or competency equivalent):

- unit standard 12315 'Supervise a seafood processing operation under a HACCP system or a higher level HACCP unit standard' (such as one of those described below)

Persons responsible for the development or review of a HACCP Plan should hold the following competency (or other training or competency equivalent):

- unit standard 12316 'Coordinate development, and discuss implementation and verification of a HACCP plan for a seafood processing operation' or
- unit standard 19514 'Explain the application of HACCP principles'; or
- unit standard 12626 'Coordinate the development and/or verification of a HACCP plan or application for a meat processing operation'

Note:
Premises processing product for export should consult with the individual country's OMAR to confirm if there are any specific HACCP competency requirements.

For further information on training available for the seafood industry see:
Seafood Industry Training Organisation (SITO) (external website)

9.3.2 Training programmes

9.3.2.1 The operator must document a training programme for seafood products handlers and associated staff that includes skills required for key tasks, skills maintenance, monitoring, corrective action and records.

9.3.2.2 The operator must provide regular training for all seafood product handlers in safe food handling, personal hygiene and sanitary practices to ensure they maintain the competencies required for their tasks.

Induction programmes should be provided for all staff involved in or associated with the handling of seafood product, informing them of health requirements, personal hygiene and hygienic work practices and other requirements associated with the tasks they are to perform.

On-going training may take the form of regular staff meetings, in-house on-job training or external training courses. Staff should be involved in some form of on-going training every 3-4 months.

Where appropriate, clear instructions on hygienic practices (e.g. hand washing, use of protective clothing) and on operational tasks should be posted in the premises to re-enforce the procedures.

9.4 MONITORING

The responsible person must regularly check compliance with documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include:

- using personal hygiene checks to confirm that personal hygiene training is effective.
- checks to confirm that staff 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.

9.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- training records for individual employees including the type of training undertaken, dates when training occurred
- records of group training, staff meetings
- copies of certificates held.

Refer to Part 2, section 38 of this COP for record keeping requirements.

10 Reception of Fish and Shellfish

Amendment 0

July 2011

10.1 PURPOSE AND SCOPE

To ensure that all edible seafood products received for processing is fit for its intended purpose and meets the requirements of the current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice.

10.2 RECEPTION OF WILD FISH

10.2.1 Mandatory requirements

10.2.1.1 HC Spec 62

Suppliers of fish, other than live fish must ensure it is -

a) subjected to chilling or freezing from the time of catching or harvesting to the time of arrival at the processing premises; and
b) handled in a manner such that contamination and deterioration is minimised.
c) Fish, other than bivalve molluscan shellfish that is temporarily held prior to transfer to the primary processor, must be held on the vessel by the producer or the harvester of that fish or in an animal material depot that is listed for that purpose by MAF.

10.2.1.2 HC Spec 102(1)

The operator must carry out an assessment to confirm that, from the time of catching to the time of arrival at the premises, -

a) the fish has been subjected to chilling or freezing (unless it is live fish); and
b) the fish has been handled, held, and transported so as to minimise deterioration and has been protected from contamination.

10.2.1.3 HC Spec 102 (2)

If the fish has passed through an animal material depot, the operator must confirm that the depot is listed for that purpose with the Director-General.

10.2.1.4 1HC Spec 102 (5)

Despite clause 62 and clause 102(1) an operator may process fish that has been seized by the Ministry of Fisheries subject to the operator –

a) obtaining written approval from the Director-General prior to the processing of the fish; and
b) complying with any conditions specified by the Director-General in the approval for the processing or labelling of the fish.

10.2.1.5 TD 99/125 Crab, Paua and Kina

Paua that are harvested from a growing area which is closed to the harvesting of shellfish, shall be shucked or degutted and washed before packing.

Some paua products (eg paua fritters) contain a mixture of paua flesh and gut. Those products which are processed from paua taken from an area which is closed to the harvesting of shellfish are not to be exported or sold on the domestic market.

Crab meat only may be exported from a growing area which is closed to the harvesting of shellfish.

Kina shall not be exported from a growing area which is closed to the harvesting of shellfish.

The full requirements of Technical Directive 99/125 can be found at:
http://www.foodsafety.govt.nz/industry/general/animal-products/omar-notifications/99-125.htm

10.2.2 Procedures

10.2.2.1 The operator must document procedures for the reception of wild fish into the premises. The procedures must include checks to determine if the fish is fit for its intended purpose, and specify corrective actions to be taken when requirements are not met.

10.2.2.2 Fish caught and processed on the fishing vessels must be checked when the fish arrives on the fishing vessel or at the start of processing, for:

- contamination with foreign matter that cannot be completely removed during processing;
- contamination with chemicals (e.g. fuel oil, cleaning compounds, filth);
- the presence of strong odours or other indications of microbiological spoilage; and
- in the case of fish that must be alive before processing (e.g. rocklobsters), for signs that the fish is alive on arrival at the fishing vessel.

10.2.2.3 Fish received at all other premises (and seafood products transferred from one fishing vessel to another) must comply with the requirements of 10.2.2.2 above and, in addition, be checked for:

- evidence that the fish has been handled and transported in an appropriate manner (e.g. the presence of ice, temperature of the fish); and
- compliance of labelling or identification with current version of the Animal Products (Specification for Products Intended for Human Consumption) Notice.

10.3 RECEPTION OF FARMED FISH

10.3.1 Mandatory requirements

10.3.1.1 HC Spec 62 – see 10.2.1.1 for text.

10.3.1.2 HC Spec 102(3)

In the case of farmed fish (other than bivalve molluscan shellfish), the operator must not accept the fish for processing (except for initial storage) if –

a) the required supplier statement is absent or incomplete, unless -
   i. the operator has a supplier guarantee programme and the supplier is a specified supplier within that programme; and
   ii. the supplier has provided to the operator information in accordance with the supplier guarantee programme at least on a 6 monthly basis; and
   iii. the animal material is of the type that is described in the supplier guarantee programme; or
b) the operator is aware of or has received information that would give reasonable grounds to suspect that the information in the supplier statement cannot be relied on.

10.3.1.3 HC Spec 102 (4)

For farmed fish (other than bivalve molluscan shellfish) the operator –

a) must inform the recognised verifier within 24 hours if a situation described in subclause (3)(b) occurs; and
b) may, despite subclause (3)(a) and (3)(b), hold the fish and give the supplier an opportunity to produce a completed or a replacement supplier statement that clarifies the status of the fish as suitable for processing to the satisfaction of the operator; and
c) must keep a copy of every supplier statement for a minimum of 2 years.

> See (other than bivalve molluscan shellfish):
> Supplier Statement for the Supply of Farmed Fish for Human Consumption (23KB PDF)

10.3.1.4 TD 99/125 see 10.2.1.5 for text.

10.3.2 Procedures

The operator must document procedures for the reception of farmed fish into the premises. The procedures must include checks to determine if the fish is fit for its intended purpose and specify corrective actions to be taken when requirements are not met.

10.4 RECEPTION OF BIVALVE MOLLUSCAN SHELLFISH

10.4.1 Mandatory requirements

10.4.1.1 HC Spec 120 (1)

The operator must only accept shellstock if the operator has confirmed the shellstock complies with the specifications or requirements of the shellfish regulated control scheme, and, in particular, must ensure that –

a) the shellfish harvesting statement details are correct and complete (subject to subclause (2)); and
b) the containers are labelled correctly in accordance with the shellfish regulated control scheme; and
c) the containers are of an appropriate hygienic status; and
d) the shellstock is alive, and not damaged, and the shells are reasonably free of mud, marine flora, bottom sediments and detritus, and not contaminated by material potentially hazardous to human health; and
e) temperature control requirements have been complied with.

10.4.1.2 HC Spec 120 (2)

If the statement (referred to in subclause (1) (a)) or labelling (referred to in subclause (1) (b)) is incomplete or missing, the shellstock may only be accepted into the premises if –

a) the shellstock is kept separate from other shellstock; and
b) a regional shellfish specialist is notified of the non-compliance within 24 hours of the arrival of the shellstock; and
c) the shellstock is detained under refrigerated storage until the regional shellfish specialist has determined the disposition of the shellstock.

10.4.1.3 HC Spec 120 (3)

If shellstock has not been grown, harvested, handled, and transported according to the requirements of the shellfish regulated control scheme, and the operator prohibits the shellstock from entering the premises, the operator must advise the regional shellfish specialist of that within 24 hours after imposing the prohibition.

For detailed information on requirements for harvest declarations, refer to Clause 61 BMS identification and harvest declaration in the following:
Animal Products (Specifications for Bivalve Molluscan Shellfish) Notice 2006 (330KB PDF)

10.4.2 Procedures

The operator must document procedures for the reception of bivalve molluscan shellfish to determine that the bivalve molluscan shellfish / shellstock meets regulatory requirements. The procedures must include checks to determine if the bivalve molluscan shellfish is fit for its intended purpose, and specify corrective actions to be taken when requirements are not met.

10.5 RECEPTION OF IMPORTED SEAFOOD PRODUCTS

Before receiving any imported seafood products into the processing premises, the operator must obtain sufficient information from the overseas supplier to ensure the seafood products is fit for purpose.

This information should include the following:

- species and form (e.g. frozen, chilled, canned) of the fish;
- details of any processing undertaken, including information (specifying amounts) on any additives or ingredients used;
- the country from which the seafood products will be imported;
- information regarding the health certification that will accompany the seafood products at the time of import (including an example if possible); and
- in the case of bivalve molluscan shellfish, information on the growing and harvesting areas and whether these areas are NSSP classified.

Further information regarding imported food can be found on:
http://www.foodsafety.govt.nz/industry/importing/

The Biosecurity New Zealand website provides information on Import Health Standards for animal products, including information on products not permitted entry into New Zealand:
http://www.biosecurity.govt.nz/

The Biosecurity New Zealand website also has information regarding the requirements for sea containers, e.g. facilities unpacking import sea containers must be MAF biosecurity approved.

10.6 MONITORING

The responsible person must regularly check compliance with documented procedures.

Every product consignment should be checked on arrival at reception. The nature and extent of the monitoring will depend on the type(s) of product received.

10.7 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- landing dockets
- harvest declarations & tags
- reception / load-in check sheets
- list of bivalve molluscan shellfish depots
- list of bivalve molluscan shellfish sorting sheds
- list of approved transporters
- transport checks for incoming goods

Refer to Part 2, section 38 of this COP for record keeping requirements.

11 Ingredients and Additives

Amendment 0

July 2011

11.1 PURPOSE AND SCOPE

To ensure that additives, ingredients and other process inputs meet relevant regulatory requirements, and are received, handled and stored in a manner that minimises contamination and deterioration.

11.2 MANDATORY REQUIREMENTS

11.2.1 HC Spec 17

The identity and purity of additives, processing aids, vitamins, minerals, and other added nutrients must comply with the current Australia New Zealand Food Standards Code, part 1.3 "Substances added to Food", Standard 1.3.4 "Identity and Purity".

11.2.2 HC Spec 115

All process inputs, including ingredients, additives, processing aids, and packaging must be stored, handled, and transported so as to minimise any potential contamination or deterioration.

11.2.3 Australia New Zealand Food Standards Code, Part 1.3, Standard 1.3.1

This Standard regulates the use of food additives in the production and processing of food. A food additive may only be added to food where expressly permitted in this standard. Additives can only be added to food in order to achieve an identified technological function according to Good Operating Practice.

11.3 PROCEDURES

11.3.1 Receiving

11.3.1.1 The operator must check all additives and other ingredients on receipt to ensure they comply with agreed specifications.

The operator should obtain a letter from the supplier guaranteeing that additives and other ingredients meet regulatory and company requirements.

11.3.1.2 All additives and other ingredients must be checked for the presence of visible contaminants, damage; and for other relevant characteristics (e.g. temperature).

11.3.1.3 Additives and other ingredients must be moved in a way that minimises any contamination or damage (e.g. forklift damage).

11.3.1.4 Additives and other ingredients with damaged packaging must be handled in a manner that will minimise:

- the exposure or spillage of the additives or other ingredients (e.g. they can be wrapped and sealed); and
- contamination or deterioration of the additives or other ingredients.

11.3.2 Storage

11.3.2.1 Additives and other ingredients must be:

- stored separately in an appropriate area (e.g. shelf, cupboard, or room); or
- adequately protected from chemicals or other products that may cause taint.

11.3.2.2 The method of storage must comply with instructions indicated on the label or provided by the supplier (e.g. some items may require clean, dry storage, others may require refrigeration).

11.3.2.3 Additives and other ingredients must be kept in closed containers when not in use.

11.3.2.4 All containers of additives and other ingredients must be clearly identified and labelled so that inventory control and traceability can be maintained.

11.3.2.5 Storage areas must be kept clean and tidy.

11.3.3 Use

11.3.3.1 All additives and other ingredients must be checked before use to ensure they are within their recommended shelf life requirements (where relevant).

11.3.3.2 Ideally, outer pallet wrapping should be removed before these products enter the processing area. However, if this is not practical wrapping can be removed in the processing area provided effective controls are in place to minimise any risk of contamination to surrounding seafood products or product contact materials.

11.3.3.3 All additives and ingredients must be used in accordance with manufacturers' instructions, and at levels to comply with any established limits (e.g. in the Food Standards Code).

Exporters should check Overseas Market Access Requirements for specific country regulations for additives and ingredients.

11.4 MONITORING

The operator must regularly check compliance with documented procedures.

Monitoring options include:
- Checks of all additives and ingredients on arrival to confirm they have been transported in an acceptable manner and have no visual signs of contamination.
- Checks during processing to ensure that additives and ingredients are used correctly.
- Weekly checks to confirm that additives are clearly identified and stored correctly.

11.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:
- register of additives and other ingredients
- register of suppliers
- supplier statements/guarantees
- daily & weekly check sheets

Refer to Part 2, section 38 of this COP for record keeping requirements.

12 Specification, Handling and Storage of Packaging and Containers

Amendment 0

July 2011

12.1 PURPOSE AND SCOPE

To ensure that product contact packaging materials, including fish bins and containers, plastic bags / liners, etc, used for containing edible seafood products are fit for their intended purpose. This programme does not apply to packaging applied to bivalve molluscan shellfish while subject to the shellfish regulated control scheme.

12.2 SOURCES OF HAZARDS

Source	Examples of hazards
Product contact packaging (plastic bags, wraps, liners, and may include cardboard cartons)	Chemical residues Physical hazards such as foreign material (e.g. cardboard slivers, pieces of plastic, etc)
Reusable product containers (e.g. plastic bins, tubs)	Bacterial pathogens Chemical residues (e.g. cleaning chemicals) Physical hazards such as foreign material (e.g. pieces of plastic from damaged containers, etc)

12.3 MANDATORY REQUIREMENTS

12.3.1 HC Spec 30 (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; or
b) comply with the requirements specified in the current "Australian Standard for Plastics 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 and other risk factors from the packaging.

12.3.2 HC Spec 30 (2)

If compliance with this specification is achieved through meeting the requirements of subclause (1) (a) or (b), the risk management programme must state the full reference to the regulation, part, section or standard with which the packaging complies.

12.3.3 HC Spec 30(3)

If the packaging is damaged such that suitability for processing of seafood products or fitness for intended purpose of seafood products product may be affected, the product must be appropriately disposed of or handled in a manner that minimises contamination until the damage to the packaging is rectified.

> The Australia New Zealand Food Standards Code does not specify details of materials permitted to be added to or used to produce food packaging materials. However, the effect of the New Zealand Food Act 1981 Section 9 (4) (c) is that packaging must not cause food to be unsafe or tainted.
>
> For further information and guidance on dealing with damaged packaging refer to the Damaged Packaging: Prevention and Management, A Resource for Seafood Processors.

12.3.4 HC Spec 30 (4)

Reused and recycled packaging must not be a source of contamination to the animal material or product.

12.4 PROCEDURES

12.4.1 Receiving and storage

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

> Note that under Section 30 Clause 2 of the current version of the Animal Products (Products Intended for Human Consumption) Notice the risk management programme must document in full the regulation, part, section or standard with which the packaging complies.

12.4.1.2 All packaging and product contact containers must be checked on receipt to ensure they are received in a condition that is fit for purpose.

12.4.1.3 Once accepted into the premises, all packaging and product contact containers must be handled in a manner that minimises contamination and deterioration.

12.4.1.4 Containers and packaging held in a warehouse-type store must be securely wrapped and stored off the floor (e.g. on pallets) to minimise contamination from dust and vermin.

12.4.2 Use

12.4.2.1 Containers and packaging must be unwrapped only in a support area or processing area. After unwrapping, containers and packaging may be stored, handled or transported only in a support area or processing area. Refer to Part 2, section 2 of this COP for information on the design of such areas.

Ideally, outer pallet wrapping should be removed before entering the processing area. However, if this is not practical wrapping can be removed in the processing area provided effective controls are in place to minimise any risk of contamination to surrounding seafood products or product contact materials.

Unused containers and packaging may be returned to a warehouse-type store providing the packaging is re-wrapped to minimise contamination from dust and vermin.

12.4.2.2 Operators must ensure that opened cartons are re-closed and covered during storage to prevent dust contamination. Any wet plastic packaging must be disposed of rather than stored.

12.4.2.3 Only containers or packaging required for immediate use may be held in any area where seafood products is processed or packaged.

12.4.2.4 New packaging and containers must be clean and undamaged at the time of use.

12.4.2.5 All packaging materials must be removed from the processing area or adequately protected before any cleaning and sanitising operations are carried out.

Made-up cartons may be:
- left in the processing room during sanitation and cleaning as long as they are adequately protected; or
- brought into the processing room once cleaning and sanitation is complete, ready for the next processing shift.

Made up cartons may be protected from dust by covering the top layer of cartons or inverting the topmost carton.

12.4.2.6 Re-usable containers used for transporting or storing product must be
- clean before use; and,
- cleaned and sanitised at a frequency specified in the cleaning and sanitation programme.

The frequency of cleaning and sanitation must take into account the areas in which the containers are used and whether or not product comes into direct contact with the container.

12.4.2.7 Re-usable containers that have been cleaned must be protected from contamination.

12.5 MONITORING

The responsible person must regularly check compliance with documented procedures.

Monitoring options for packaging and containers include:
- checks on arrival to confirm they have not been damaged in transit, and show no visual signs of contamination.
- checks before use to confirm they are clean and suitable for use.
- weekly checks to confirm proper storage.

12.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:
- register of packaging and/or suppliers
- supplier statements/guarantees for product contact packaging and containers
- daily & weekly check sheets

Refer to Part 2, section 38 of this COP for record keeping requirements.

13 Construction and Operational Requirements for the Swimming of Live Fish

Amendment 0

July 2011

13.1 PURPOSE AND SCOPE

To ensure that premises and equipment used for the swimming and / or holding of live fish (including crustaceans and abalone) are suitable for their intended purpose and to minimise contamination of the live animals.

This programme does not cover marine farming operations nor the storage and/or depuration of molluscan bivalve shellfish. It does not cover areas of the premises where fish processing occurs.

13.2 SOURCES OF HAZARDS

Source	Examples of hazards
Swimming water	Chemical residues
Water	Chemical residues
Holding tank	Chemical residues

13.3 PROCEDURES

13.3.1 Construction

13.3.1.1 Live fish swimming areas must be designed, constructed and maintained in such a manner so as to:

- minimise contamination of the live fish; and
- facilitate cleaning and maintenance.

Live fish swimming areas do not have to comply with construction requirements for seafood products processing premises – for example smooth impervious walls are not mandatory.

Construction materials in such areas may include exposed wood and roofing iron provided they are not detrimental to the health of the live fish and do not contaminate the swimming water. In some instances materials such as wood or porous concrete may form part of the biofilter system used for maintaining water quality.

13.3.1.2 The area for the swimming and holding of live fish must be separated from any place used for the processing, packing or storage of fish, or from any living quarters by:

- doors made of permanent material; or
- other forms of physical separation that minimise contamination of live fish.

13.3.1.3 Toilet areas must not open directly on to any live swimming area.

13.3.1.4 Service lines such as cables and pipes must be located and installed in such a manner that they do not contaminate the live swimming area.

13.3.2 Water supply

The quality of water used for the purpose of swimming live fish must be sufficient to maintain the fish in their live state.

> Water containing treatment chemicals (e.g. chlorine) is unsuitable for swimming live fish as the chemicals will have an adverse effect on their health and welfare. Live crustaceans are sensitive to water quality and, hence, are good indicators of water quality.
>
> Compounds (e.g. bacterial cultures, pH modifiers and salt) may be used to modify the water conditions to ensure survival of the fish.

13.3.3 Lighting

Refer to Part 2, section 2 of this COP for relevant requirements.

13.3.4 Cleaning and sanitising facilities

13.3.4.1 Facilities for hand washing and for the cleaning of waterproof clothing must be available in or near the live swimming area. Refer to Part 2, section 6 in this COP for further information.

13.3.4.2 Cleaning materials and cleaning equipment must be stored in such a manner as to prevent contamination of live seafood products, ice, water and containers.

13.3.5 Equipment

All equipment used in contact with live fish must be made of material that will not contaminate the live fish or the water.

13.3.6 Maintenance compounds

Maintenance compounds that are used in a live swimming or holding area must meet the requirements of Approved Maintenance Compounds Manual and Part 2, section 7 of this COP.

13.3.7 Compressed air

Where compressed air is used it must be used in accordance with the requirements of Part 2, section 3 of this COP.

13.3.8 Containers

Containers used in a live fish swimming and holding plant must meet the requirements of Part 2, section 12 of this COP. Containers must be stored in such a way as to minimise contamination of the live fish and live swimming area.

13.3.9 Cleaning and sanitation programme

The operator must document a cleaning programme for all live swimming and holding areas to ensure that these areas are kept in a clean and tidy condition.

Chemicals for cleaning and sanitising should not be used in live swimming or holding areas because they may contaminate the swimming/holding water. Chemical exposure may have detrimental effects on the fish and could result in death.

13.3.9.1 Disposition of unsuitable material

13.3.9.2 Material that is unsuitable for further processing for human consumption (e.g. diseased or dead fish) must be transferred to a temporary holding area and physically separated from healthy live fish, until it is sent for further processing to products for animal consumption, or for disposal.

13.3.9.3 All live fish found to be unfit for human consumption must be handled and disposed of in a manner to minimise contamination and to prevent such fish entering the human food chain.

13.4 MONITORING

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

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include: • weekly or monthly checks to confirm that the cleaning requirements have been met. • monthly checks on repairs and maintenance.

13.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- Supplier statement for swimming water
- Cleaning & maintenance records
- Inventory records

Refer to Part 2, section 38 of this COP for record keeping requirements.

14 Fish Processing

Amendment 0

July 2011

14.1 PURPOSE AND SCOPE

To ensure that fish and fish product is processed in a manner that minimises its contamination and deterioration, and maintains its fitness for intended purpose.

This section covers only primary processing of fish. Further processing and manufacturing of fish (e.g. smoking, drying) is included in the Further Processing Code of Practice (399KB PDF).

This section applies to operators of land-based premises processing fish (including farmed fish) and to fishing vessels that process fish at sea and require risk management programmes.

For the purposes of this section, **fish** means all finfish, crustaceans, echinoderms, and molluscs (squid, paua) with the exception of bivalve molluscan shellfish.

14.2 MANDATORY REQUIREMENTS

14.2.1 AP Reg 9

All specified persons must ensure that animal material and animal product in their charge is processed in a manner that minimises the contamination or deterioration of the animal material or product.

14.2.2 HC Spec 26 (1)

The operator must ensure that the skills of those persons involved in key tasks that could have a significant impact on the suitability for processing of animal material or the fitness for intended purpose of animal product, or who are required to carry out the activities listed in clause 25 [which is related to canning], are maintained on an ongoing basis.

14.2.3 HC Spec 26 (2)

The operator must keep records demonstrating that skills identification, achievement and maintenance is being carried out effectively.

14.2.4 HC Spec 103 (1)

Handling and processing procedures must be carried out without unnecessary delay, and in a manner that minimises contamination and deterioration of the fish.

14.2.5 HC Spec 103 (2)

The level of histamine in fish or fish product must not exceed 200 mg/kg.

14.2.6 HC Spec 104 (1)

Any chilling or freezing must be conducted without unnecessary delay and in a manner that minimises any potential microbial proliferation, and contamination of the fish.

14.2.7 HC Spec 116

If pre-programmed process control parameters are used to operate and control a process that is critical to product safety, unauthorised access to the programmed parameters must be prevented.

14.3 PROCEDURES

14.3.1 Packing live fish (other than bivalve molluscan shellfish)

14.3.1.1 Fish (e.g. lobsters) must be alive at the time of packing and in a condition such, that under normal circumstances, they will remain alive during transport to their final destination.

14.3.1.2 The outer surfaces of live fish, in particular paua and whelks, must be free from dirt, weed and marine organisms.

14.3.1.3 Live fish must be packed at a temperature sufficient to maintain the species in a live state during transport.

If appropriate, cooling media should be added to the container to maintain the required conditions during transit.

14.3.1.4 Ice used in direct or indirect contact with fish must be:

- manufactured from potable water or clean sea water; and
- manufactured, stored, handled and transported so as to prevent contamination and to retain potable water or clean sea water quality at point of use; and
- when delivered from another premises, inspected on arrival at the processing premises, and rejected if delivered in a manner that may have permitted contamination (e.g. from dust, chemicals, foreign matter) or if contamination is evident.

14.3.2 Heading, gutting and filleting

14.3.2.1 Where relevant, the operator must establish temperature and/or time parameters to ensure that fish and fish product are processed without unnecessary delay.

14.3.2.2 Wet fish must be stored chilled or frozen unless they are to be processed immediately.

14.3.2.3 Operations such as gutting, skinning and filleting must be carried out in a manner that minimises contamination of the fish or fish product. When fish are washed after gutting, potable water or clean seawater must be used.

14.3.3 Thawing

14.3.3.1 To minimise deterioration and contamination of the fish or fish product, the operator must establish and comply with process criteria for thawing fish, (including air and water thawing), such as air temperature or water temperature, time of thawing and temperature of the fish at the completion of thawing.

> Practical factors such as number of staff, the speed at which a species can be processed, and equipment failure should also be considered when establishing thawing process criteria.

14.3.3.2 Fish that have been thawed must be processed without unnecessary delay or must be held under chilled conditions.

14.3.4 Shucking shellfish (other than molluscan bivalve shellfish)

14.3.4.1 Shellfish to be shucked must be:

- alive and undamaged;
- held in cool conditions; and
- protected from the sun and wind prior to shucking.

14.3.4.2 The shucking process must be separated from other processes (e.g. packing) by time, adequate space, or physical barriers.

14.3.4.3 Shucked shellfish must be stored, chilled or frozen unless they are to be further processed immediately.

14.3.4.4 Paua, in addition to complying with the requirements in sections 14.3.4.1 to 14.3.4.3, must be washed in potable water or clean seawater immediately after shucking, and then drained, unless the paua is being sent as "unwashed paua for canning in New Zealand only".

> When the paua is to be canned in a fish processing premises, the washing may be carried out in those processing premises.

14.4 MONITORING

The responsible person must regularly check ongoing compliance to documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include daily checks during processing to confirm that operations are carried out according to documented procedures.

14.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- processing records
- daily checks
- CCP records
- thawing records

Refer to Part 2, section 38 of this COP for record keeping requirements.

15 Bivalve Molluscan Shellfish Processing

Amendment 0

July 2011

15.1 PURPOSE AND SCOPE

To ensure that bivalve molluscan shellfish are processed in a manner that minimises contamination and deterioration, and maintains their fitness for intended purpose.

This section covers only primary processing of bivalve molluscan shellfish. Further processing and manufacturing of bivalve molluscan shellfish (e.g. smoking, acidification) are covered in supplementary documents yet to be finalised.

The mandatory requirements for primary processing of bivalve molluscan are extensive and detailed and, for this reason, are referenced in this section rather than quoted in full as occurs in other COP sections. In addition, since the detailed mandatory requirements cover most aspects of primary processing of bivalve molluscan shellfish, few documented procedures are needed in this section of the COP.

Operators must therefore ensure that they study all relevant clauses (listed below) from the current version of the notice and comply with their requirements:
Animal Products (Specifications for Products Intended for Human Consumption) Notice 2004 (434KB PDF)

15.2 WET STORAGE

15.2.1 Mandatory requirements

HC Spec 123 – General requirements
HC Spec 124 – Wet storage process water supply
HC Spec 125 – Treatment of water for wet storage
HC Spec 126 – Continuous flow through wet storage system
HC Spec 127 – Recirculating water wet storage system
HC Spec 135 – Minimum requirements of depuration/wet storage operation
HC Spec 135A – Alternative means

15.3 DEPURATION

15.3.1 Mandatory requirements

HC Spec 25 (3) – Competency of depuration supervisor
HC Spec 128 – Depuration
HC Spec 129 – Depuration process water: seawater supply
HC Spec 130 – Depuration process water: water standards
HC Spec 131 – Shellfish storage
HC Spec 132 – Depuration unit: Loading and unloading

HC Spec 133 – Cleaning and sanitising plan and equipment
HC Spec 134 – Depuration process operator verification
HC Spec 135 – Minimum requirements of depuration/wet storage operation
HC Spec 135A – Alternative means

15.4 SHUCKING, PROCESSING AND PACKING

15.4.1 Mandatory requirements

HC Spec 116 – Process control
HC Spec 121 – Raw harvested bivalve molluscan shellfish
HC Spec 122 – Processing bivalve molluscan shellfish
HC Spec136 – Shucking, processing and packing

15.4.2 Procedures

15.4.2.1 During packing, processing and shucking, shellfish must be handled in such a manner that they are not subject to contamination, or unacceptable increases in temperature and/or bacterial levels.

15.4.2.2 When shellfish are processed in a room or area where other fish processing operations are performed, the operator must take adequate measures to minimise contamination of the shellfish by the other operations (e.g. by splash, personnel, dual use of appliances) or from any other source.

15.4.2.3 Shellfish storage areas must be off the floor and protected from contamination from floor water, splash water or foot traffic.

15.4.2.4 Shucking and packing operations must be carried out in separate rooms or in areas that are physically separated to ensure effective control of any potential contamination from either operation to the other.

15.4.2.5 Precautions must be taken to prevent food-contact surfaces of shucked shellfish containers from coming into contact with product handlers or their clothing, or with splash liquid.

15.4.2.6 Shucked shellfish containers must be completely emptied in the packing area and must be cleaned before they are returned to the shucking area.

15.4.2.7 Shucked shellfish must be packed in clean containers made from safe materials. Returnable containers may only be used for interplant shipment of shucked shellfish and must be sealed during such transport. On receipt of shellfish in returnable containers the operator must repack the shellfish into single-use containers.

15.4.2.8 Containers of shucked shellfish must be closed promptly after filling.

15.4.2.9 Skimmer tables and other packing equipment must be located so that they are not contaminated by drainage from the delivery window or from shucking room equipment and utensils.

15.4.2.10 Shucked shellfish must only be packed into containers labelled in accordance with Part 2, section 32 of this COP.

Ice used in direct or indirect contact with shellstock or shucked shellfish must be:

- manufactured in a premises operating under a registered RMP, an approved Food Safety Programme or registered under the Food Hygiene Regulations 1974;
- of potable water quality;
- manufactured, stored, handled and transported so as to prevent contamination; and
- when delivered from another premises, inspected on arrival at the processing premises, and rejected if delivered in a manner that may have permitted contamination (e.g. from dust, chemicals, foreign matter) or if contamination is evident.

15.4.2.11 Workers and other persons who move from areas of a lower hygienic status to a higher hygienic status must take adequate measures to minimise contamination of product.

Hygiene routines for staff and other persons moving between areas of different hygiene status will depend on the degree of risk of contamination. Operators should consider the need for:

- hand washing
- changing or cleaning/sanitising of outer protective clothing (aprons)
- cleaning/sanitising of footwear

15.5 HEAT SHOCKING

15.5.1 Mandatory requirements

HC Spec 137 – Heat shocking

15.5.2 Procedures

15.5.2.1 Operators who heat shock shellfish must develop a heat shock process schedule based on a comprehensive study of the process.

15.5.2.2 The heat shock process must not result in an increase in microbiological levels in the shellfish.

15.6 REPACKING

15.6.1 Mandatory requirements

HC Spec 138 – Repacking
HC Spec 139 – Bivalve molluscan shellfish labelling
For further information on shellfish labelling requirements see Part 2, Section 32 of this COP.

15.7 MONITORING

The responsible person must regularly check ongoing compliance to documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include daily checks during processing to confirm that operations are carried out according to documented procedures.

15.8 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- information necessary to trace shellfish back to their growing area source
- harvest, landing and processing records
- daily checks
- CCP records

Refer to Part 2, section 38 of this COP for record keeping requirements.

16 Control of Contamination of Seafood Products

Amendment 0

July 2011

16.1 PURPOSE AND SCOPE

To ensure that contamination of seafood products is minimised and that seafood products is fit for its intended purpose.

16.2 MANDATORY REQUIREMENTS

16.2.1 AP Regs 3

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.

16.2.2 AP Regs 9

All specified persons must ensure that animal material and animal product in their charge is processed in a manner that minimises the contamination or deterioration of the animal material or animal product.

16.2.3 AP Reg 11

All operators must establish and carry out effective procedures to:

a) ensure appropriate and adequate maintenance, cleaning and sanitation of processing premises, facilities, essential services, and equipment (including conveyances); and
b) manage waste; and
c) control pests.

16.2.4 HC Spec 20 (2)

Equipment, and storage areas, used to store or contain waste must —

a) be clearly identified; and if equipment is permanently installed in an identified storage area then either the equipment or the storage area may be identified; and
b) not be a source of contamination to other animal material or animal product.

16.2.5 HC Spec 20 (3)

Waste must be kept under controlled conditions until adequately identified in a manner that will ensure that it will not be mistakenly or fraudulently released as suitable for processing or fit for human consumption.

16.2.6 HC Spec 20 (4)

Waste must be disposed of by a method that ensures that it will not become a source of contamination to other animal material or animal product.

16.3 PROCEDURES

16.3.1 Design and layout

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

- facilitate separation between seafood products for human consumption and seafood products for animal consumption, and between raw and ready-to-eat (RTE) products and processes;
- facilitate the control of movement of personnel, raw materials and products, and equipment;
- facilitate effective cleaning and sanitation between handling seafood products for human consumption and seafood products for animal consumption, and between handling of raw and RTE products; and
- minimise cross contamination between seafood products for human consumption and seafood products for animal consumption, and between raw and RTE products.

16.3.2 Water contamination

16.3.2.1 The operator must implement procedures for controlling contamination from water, including product wash water, thawing tank water, defrost water and condensate from refrigeration units.

16.3.2.2 During operation, processing areas must be maintained and operated so that water from unclean sources is controlled and contained so that it does not drip or splash onto seafood products, seafood products contact surfaces or onto any other areas where seafood products could become contaminated; or does not flow across areas people walk. This includes:

- water from condensation;
- water used to clean floors, walls, or appliances;
- excess water used during processing (e.g. product wash water, thawing-tank water, defrost water); and
- non-potable water.

16.3.2.3 All seafood products processing areas must, as far as practicable, be kept free from steam and surplus water.

16.3.3 Equipment

16.3.3.1 The operator must document procedures for controlling the movement of equipment from areas processing seafood products for human consumption to areas processing seafood products for animal consumption within the premises. The procedures must cover the following:

- construction, maintenance and cleanliness of the equipment;
- designation of specific areas within the premises in which particular categories of equipment can be used; and
- conditions for use of equipment in the premises so as to minimise contamination of equipment and products.

16.3.3.2 Equipment (e.g. slicers, conveyors, packing machines, containers and trolleys), maintenance tools and utensils that are used in areas for processing seafood products for animal consumption must not be used for processing seafood products for human consumption. Similarly equipment that is used for processing raw products must not be used for processing RTE products. If this is not possible, the equipment, tools, and utensils must be thoroughly cleaned and sanitised before being used in human consumption and/or RTE areas or for processing human consumption and RTE products.

Colour coding may be used to identify portable equipment and utensils (e.g. containers, knives, cutting boards, slicers) for exclusive human/animal consumption seafood products or raw/RTE seafood products.

Particular consideration should be given to the type of processing operation in an area when appliances are moved from areas processing seafood products for human consumption to areas processing seafood products for animal consumption. Use of floor markings to define areas for particular types of equipment movement may be helpful.

16.3.3.3 All hand-held equipment designated for use in processing areas, must be stored in a manner that protects it from contamination, when not in use.

16.3.3.4 Seafood products containers that can be stacked and/or have drain holes must be placed above the floor (e.g. on metal gratings, or on metal or plastic surfaces raised off the floor) so as to minimise contamination.

Operators should identify “bottom bins” i.e. bins that are placed at the bottom of a stack on the floor, but that are not used to contain seafood products.

16.3.4 Material

16.3.4.1 The operator must document procedures for controlling the movement of material from areas processing seafood products for human consumption to areas processing seafood products for animal consumption and for dealing with seafood products that is unfit for human consumption (e.g. dropped product procedures).

16.3.4.2 Any unpackaged seafood products for human consumption that are moved into or through any non-processing area must at all times be contained and covered, to minimise contamination.

16.3.4.3 Waste or seafood products for animal consumption that are moved through any processing area must be handled in a manner that minimises contamination of seafood products for human consumption.

16.3.4.4 Material derived from normal processing (e.g. fish offal, fish heads) and intended for bait, for further processing for animal consumption or for disposal as waste, can be:

- held in a processing area until removal for such purposes; or
- packed in a processing area, providing the operator has considered any potential contamination hazards and implemented measures to mitigate these.

See Section 31 for information on processing products for animal consumption.

16.3.4.5 Seafood products intended for use as bait or for the manufacture of pet food may be stored in the same room as packaged seafood products intended for human consumption ONLY if they are enclosed in containers and if the risk of contamination is minimised.

16.3.4.6 All other non product waste (e.g. damaged packaging, disposable gloves, hats, etc) must be regularly removed from the processing area or placed in appropriate rubbish receptacles so that it does not create a risk of contamination.

16.3.4.7 Outside waste bins must have lids or covers.

Trucks used for the storage of waste should be kept covered as much as practicable, (e.g. by netting or other appropriate material), particularly if they are located in a semi-permanent position on the premises.

16.3.5 Movement of personnel

16.3.5.1 Product handlers and other persons who move from areas of a lower hygienic status to a higher hygienic status must take adequate measures to minimise contamination to product.

Hygiene routines for staff and other persons moving between areas of different hygiene status will depend on the degree of risk of contamination. Operators should consider the need for:

- hand washing
- changing or cleaning/sanitising of outer protective clothing (aprons)
- cleaning/sanitising of footwear

"Other persons" includes non-product handlers, other staff, visitors, contractors etc. The operator should ensure that these persons are aware of the hygiene routines required for movement between different areas of the premises.

16.3.5.2 Personnel who work in raw seafood products areas must change their protective clothing before entering areas where ready-to-eat seafood products is produced.

16.3.5.3 Personnel (e.g. fish meal operators) assigned to work in dedicated areas where materials for animal consumption are handled must wear some form of identification to distinguish them from other seafood products processors; and before entering areas processing seafood products for human consumption, such personnel must:

- remove any contaminated outer clothing, footwear or protective coverings;
- thoroughly wash any exposed contaminated skin surfaces; and
- dress in clean protective clothing as described above.

16.3.6 Designated areas

The purpose of designated areas is to allow workers to go outside the premises during breaks without having to change out of all protective clothing, as long as precautions are in place to minimise contamination.

Businesses producing high risk products (e.g. ready-to-eat seafood products) should consider the potential for contamination of these products and of the processing environment before allowing workers outside in protective clothing.

16.3.6.1 The operator must document procedures for the use of designated areas that include the following:

- the name of the person responsible for the procedures;
- a description (or diagram) of the areas where protective clothing may be worn;
- the cleaning programme for the designated areas;
- instructions for staff on the use of designated areas and conduct in those areas so that contamination of protective clothing is minimised;
- the checks to be carried out to ensure that personnel comply with the procedures; and
- the records to be kept to demonstrate compliance with these requirements.

16.4 MONITORING

The responsible person must regularly check compliance to documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include daily checks to confirm that procedures such as water containment, waste management, and movement of appliances, materials, equipment and personnel are carried out correctly.

16.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are daily/weekly checks.

Refer to Part 2, section 38 of this COP for record keeping requirements.

17 *Listeria Monocytogenes* Programme Scope

Amendment 0

July 2011

17.1 SUBJECT MATTER

This chapter sets out the criteria for the monitoring of *Listeria monocytogenes (L. monocytogenes*) referred to in the Animal Products (Specifications for Products Intended for Human Consumption) Notice 2004, Part 14, Clauses 140-142 or the latest version thereof.

For products included in the scope of this chapter of the Seafood Code of Practice, operators must comply with the procedures in this chapter. Any alternative procedures must be documented within the operator's Risk Management Programme (RMP). Approval for the alternative would be given through registration of the RMP, or a significant amendment to the RMP, containing those alternative procedures (which must be provided to MAF at the time of registration). The alternative procedures may be based on the operator's history; i.e. type of product, size of operation, distribution and the resolution of past *L. monocytogenes* events.

17.2 SCOPE

These requirements apply to operators processing ready-to-eat (RTE) seafood products. These may be short or long shelf-life RTE seafood products, some examples of these products are:

- short shelf-life RTE seafood products have a shelf-life of between 8 and 60 days[3] such as:
  - RTE chilled seafood product e.g. hot or cold smoked fin-fish, shellfish, eels, crabs or rock lobster
  - frozen RTE seafood products that have a short shelf of between 8 and 60[3] days once thawed by the distributor and are intended for sale as chilled product to the final consumer
  - heat-shocked RTE shellfish distributed as chilled product
  - vacuum-packaged RTE seafood products
- long shelf-life RTE seafood products have a shelf-life greater than 60 days such as:
  - vacuum-packaged RTE seafood products
  - manufactured RTE seafood products
  - frozen heat-shocked mussels (and other bivalve molluscs)
  - RTE seafood products that are intended to be sold frozen.

The following seafood products are excluded:

- raw fish, (includes, finfish, crustaceans, echinoderms, cephalopods and non-bivalve molluscan shellfish)
- raw shellfish (includes all species of bivalve molluscan shellfish)
- canned fish or fish products

[3] RTE-seafood products that have a very short shelf-life, seven days or less, are excluded from complying with the requirements for product sampling, i.e. those operators must comply with the requirements for environmental monitoring sampling provided for short shelf-life RTE seafood products only.

- dried shelf stable fish products with an water activity (a_w) of less than 0.9 (operators must have records that demonstrate a_w is below 0.9)
- seafood products that have a pH below 4.4 (operators must have records that demonstrate pH is below 4.4)
- seafood products that receive a *Listeria* monocytogenes control step in the final pack or pouch e.g. heating, high pressure processing where validated.

It may be appropriate for some seafood products that are ready to re-heat or ready to cook to be considered as ready to eat seafood product for the purposes of this *Listeria* monitoring programme. This may be where the seafood product appears to be RTE.

18 *L. monocytogenes* Monitoring Programme for Ready-to-Eat Seafood

Amendment 0

July 2011

18.1 REGULATORY REQUIREMENTS

18.1.1 HC Spec 141

1. The operator manufacturing or processing seafood that this chapter applies to must have a programme documented in the risk management programme for the monitoring of *L. monocytogenes*.

2. The programme must include all of the following elements —
   a) the name and/or designation of personnel responsible for that programme, and for carrying out the sampling
   b) a description of zones, sample sites, and their identification and sampling frequency
   c) a description of the products covered and identification of the *L. monocytogenes* control steps
   d) records showing each site sampled, details of the samples, and record of the results
   e) a laboratory notification procedure
   f) competency of samplers
   g) an action plan which contains the following aspects and the name and/or designation of the person responsible —
      i. action taken if *L. monocytogenes* is found
      ii. action taken when there is non-compliance with the documented programme.

18.1.2 HC Spec 142

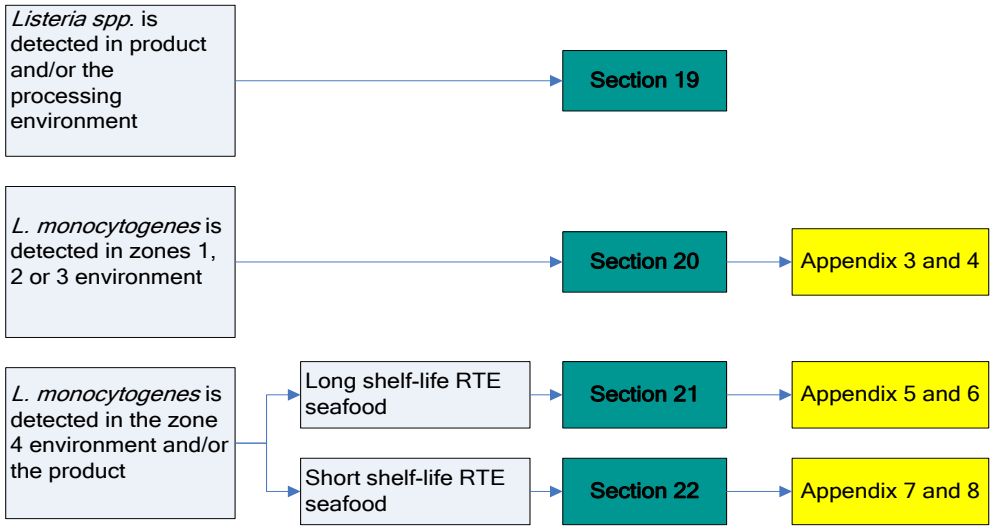
All laboratories performing analyses for *L. monocytogenes* must have International Accreditation New Zealand (IANZ) accreditation for the analysis of *L. monocytogenes* in food in accordance with one of the test methods identified in a laboratory scheme established by the Director-General.

18.2 *LISTERIA* MONITORING PROGRAMME

Each operator processing RTE seafood product must have a written *Listeria* monitoring programme. The programme must include all the elements as required by the specifications. This must incorporate an operator's HACCP including risk assessment, identified control procedures and a *Listeria* monitoring programme which must include sampling sites in various zones selected with the aim of finding *L. monocytogenes*. The following sections of this chapter (sections 18.3-22.9) detail the procedures to be followed to meet the requirements in the specifications.

The table below indicates the section of this document to refer to for corrective actions when *Listeria spp*. and/or *L. monocytogenes* is detected in the product or processing environment.

Table 18.1: Sections on corrective actions when *Listeria* is detected



18.3 SAMPLING REQUIREMENTS

For minimum sampling requirements refer to section 18.5 Sampling Plans.

Follow up actions in the event of the detection of *L. monocytogenes* in product and/or the environment are provided in:

- section 20 for the detection of *L. monocytogenes* during the environmental monitoring of the zone 1, 2 and 3 environment
- section 21 for the detection of *L. monocytogenes* in long shelf-life seafood product and during the monitoring of the zone 4 environment
- section 22 for the detection of *L. monocytogenes* in the short shelf-life RTE seafood products and during the monitoring of the zone 4 environment.

18.4 COMPOSITE SAMPLES

The compositing of samples for analysis may be a more cost effective option (check with your approved laboratory) compared with the analysis of individual swabs and product samples. This is because when demonstrating compliance with the microbiological standard (absence of *L. monocytogenes* / 25g where n=5, c=0) instead of the laboratory testing five product samples of 25g, one combined sample of 125g is required.

> The microbiological limit for *L. monocytogenes* is specified for a particular weight of product sample, usually 25g. However this does not always correlate to the size of the sample analysed. Therefore it is important to check with your laboratory to determine the amount of product required for analysis to avoid sending insufficient product samples.

Environmental swabs taken from the same zone at the same time can be composited during routine monitoring. However, in the case of the detection of *L. monocytogenes* in a composite

environmental sample it generally takes longer to identify the source of contamination as individual swabs would need to be tested to identify the root cause.

The compositing of environmental samples from different sites in the same zone is not appropriate during investigative or exploratory sampling when *L. monocytogenes* has been detected.

Compositing of product samples

- Individual samples may form a composite sample for the purposes of laboratory analysis. For example:
  - Five individual samples of 25g may form one composite sample of 125g (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample);or
  - Ten individual samples of 25g may form two composite samples, e.g. 2 x 125g (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample); or
  - Twenty individual samples of 25g may form four composite samples, e.g. 4 x 125g (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample); or
  - Thirty individual samples of 25g may form six composite samples, e.g. 6 x 125g (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample), or
  - Sixty individual samples of 25g may form 12 composite samples, e.g. 12 x 125g (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample).
- There are two options when the composite sampling of product is required when large sample numbers are being analysed. For example, sample size n=60.
  - The unopened packages of product may be submitted to the laboratory where they will be aseptically opened and a 25g sample taken from each. These will form the composite sample which will be tested; the composite sample must not be more than five 25g samples (125g).
  - The unopened packages (including large cartons) of seafood product are aseptically opened by the operator and a 25 g sample taken from each. Precautions must be taken to prevent the contamination of the sample. These individual samples will form a composite sample which will be tested; the composite must not be more than five 25g samples (125g).

18.5 SAMPLING PLANS

The sampling plans are the minimum sampling frequencies expected to be undertaken by the operator.

Operators must undertake a sampling plan appropriate to their RTE seafood product to demonstrate compliance:

1. Operators processing long shelf-life RTE seafood product with the exception of intermittent operators must comply with the sampling plan in Table 18.2.

2. Operators intermittently processing long shelf-life RTE seafood product must comply with the sampling plan in Table 18.3.

3. Operators processing short shelf-life RTE seafood product with the exception of very short shelf-life RTE seafood must comply with the sampling plan in Table 18.4.

4. Operators intermittently processing short shelf-life RTE seafood must document an alternative sampling plan within their RMP. Alternative sampling plans must be set within the context of the risk based procedures based on HACCP, the nature of the product and processing environment. Approval for this would be given through registration of the RMP or through a significant amendment to a RMP.

5. Operators processing very short shelf-life RTE seafood product (less than seven days or less) must comply with the sampling plans specified for the environment (zones 1, 2, 3, and 4) in Table 18.4. However product sampling is not required except as verification of the operator's HACCP plan or as confirmation of the operator's defined limits. Operators must follow the corrective actions detailed in section 20 if *L. monocytogenes* is detected in the zone 1, 2 and 3 environment or section 22 if *L. monocytogenes* is detected in the zone 4 environment (corrective actions will apply to the zone 4 environment and for RTE short-shelf-life product processed after laboratory notification).

6. Operators must document any alternative sampling plans within their RMP. Alternative sampling plans must be set within the context of the risk based procedures based on HACCP, the nature of the product and processing environment. Approval for this would be given through registration of the RMP or through a significant amendment to a RMP.

Table 18.2: Environmental and product sampling plan for long shelf-life RTE seafood products

Zone	Definition	Requirement	Minimum Frequency	Test
1	Sample sites in the non-processing environment (outside)	Voluntary sampling	At discretion of Operator	Composite or individual[4]
2	Sample sites in the standard hygiene environment	Mandatory sampling	Five sites per fortnight	Composite or individual[4]
3	Sample sites on non-product contact surfaces in the critical hygiene environment	Mandatory sampling	Five sites per fortnight	Composite or individual[4]
4	Sample sites on product contact surfaces and surfaces from which product can be contaminated (including ingredients) in the critical hygiene environment	Mandatory sampling	Five sites per week	Composite or Individual[4]
Product	Each product in it's final form	Mandatory sampling	Five samples per fortnight[5]	Composite or individual

[4] A number of swabs may be taken from the same site or zone and can be analysed as a single composite from one site.
[5] Fortnightly testing of product must be carried out on the same batch being processed while the zone 4 environment samples are taken to ensure that reliable information is obtained.

Table 18.3: Environmental and product sampling plan for the intermittent processing of long shelf-life RTE seafood products

Zone	Definition	Requirement	Minimum Frequency	Test
1	Sample sites in the non-processing environment (outside)	Voluntary sampling	At discretion of Operator	Composite or individual[4]
2	Sample sites in the standard hygiene environment	Mandatory sampling	Five sites per month	Composite or individual[4]
3	Sample sites on non-product contact surfaces in the critical hygiene environment	Mandatory sampling	Five sites per fortnight	Composite or individual[4]
4	Sample sites on product contact surfaces and surfaces from which product can be contaminated (including ingredients) in the critical hygiene environment	Mandatory sampling	Five sites per fortnight	Composite or Individual[4]
Product	Each product in it's final form	Mandatory sampling	Five samples per fortnight[5]	Composite or individual

18.5.1 Long shelf-life ready-to-eat seafood products

All long shelf life RTE seafood product processed between the scheduled sampling of the zone 4 environment must be held under control of the operator until the results of the sampling is received (see definition of on hold). Product is only released if *L. monocytogenes* is not detected from zone 4 sample sites.

Table 18.4: Environmental and product sampling plan for short shelf-life ready-to-eat seafood products

Zone	Definition	Requirement	Minimum Frequency	Test
1	Sample sites in the non-processing environment (outside)	Voluntary sampling	At the discretion of the operator	Composite or individual[6]
2	Sample sites in the standard hygiene environment accessed by processing staff in personal protective clothing and equipment	Mandatory sampling	Five sites per fortnight[7]	Composite or individual[6]
3	Sample sites on non-product contact surfaces in the critical hygiene zone	Mandatory sampling	Five sites per fortnight[7]	Composite or individual[6]
4	Sample sites on product contact surfaces and surfaces from which product can be contaminated (including ingredients) in the critical hygiene zone	Mandatory sampling	Five sites per fortnight[7]	Composite or Individual[6]
Product	Each product in it's final form	Mandatory sampling	Five samples per fortnight[7]	Composite or individual

[6] A number of swabs may be taken from the same site or zone and can be analysed as a single composite from one site.
[7] All samples taken from the zone 2, 3, 4 environment and product from the same batch being processed when the samples were taken.

18.5.2 Short shelf-life RTE seafood product

All short shelf-life RTE seafood product processed at the same time as the zone 4 environment sampling must be held under control of the operator until the results of the microbiological analysis is received (see definition of on hold). If *L. monocytogenes* is detected in any product samples or from the zone 4 environment sites, the product must be subject to the actions specified in section 22 and section 18.10 product disposition.

18.6 GENERAL SAMPLING

All samples must be taken aseptically.

Sampling must be planned and conducted in a manner that potential contamination is not transferred by the person performing the sampling or by the introduction of another contaminant.

Where the operator processes a number of RTE seafood products covered by the scope of this chapter on the same process line, these can be considered to be part of the same batch, if they are processed between major clean downs and subject to the same conditions, i.e. hot smoked eel and hot smoked salmon, and heat shocked half-shell mussels and mussel meat where they are processed on the same line. However, hot smoked salmon is different to cold smoked salmon due to the different times and temperatures during smoking and an individual sampling programme must run for each.

The requirement for five environmental swabs from zone 4 cannot be divided between different product lines where these are distinct and separate. The requirements for five product samples can not be split between different product types if these are processed on different and distinct process lines.

Where there are multiple process lines operating in the same zone, then each process line should be subject to environmental monitoring on the designated sample day if in operation. However, all products processed in the zone on the day of sampling will be subject to corrective action where *L. monocytogenes* is detected on any particular line unless it can be demonstrated that each line is separate and distinct.

Where there are multiple seafood products processed on any one process line, only one product type needs to be sampled, however all products processed on this line on the day of sampling will be subject to corrective action if *L. monocytogenes* is detected in the product.

Where the operator operates on a shift basis, the operator or personnel responsible must ensure that all shifts are covered by the *Listeria* Monitoring Programme, at the frequencies described above, i.e. must have the opportunity to take samples from each shift.

For example:
If the operator processes seafood on a shift basis and performs a major clean down between each, then each shift is considered to be distinct and the seafood product processed is a different batch. Therefore each shift, e.g. day and evening, must each be subject to the requirements for sampling. Considering each shift on an individual basis may have advantages for the operator in terms of reduced commercial risk in the case of the detection of *L. monocytogenes*.

Whereas if there is a single major clean down per working day, then all seafood product processed over the shifts on the same working day are considered to be part of the same batch and corrective actions in the event of the detection of *L. monocytogenes* will apply to product from both shifts.

18.6.1 The sampler

Each person who takes samples must have received training from a person competent in the following areas:

- identifying and selecting suitable environmental sample sites and sources of possible contamination
- the correct techniques for taking samples
- the correct method for completing the sample submission form
- the correct method for the storage and dispatch of samples to the laboratory
- the significance of following correct procedures
- understanding how and when to composite samples.

The operator must retain a record (e.g. a statement from the training provider) for all the people who have received training (including the date and provider for the training) for taking samples. A sufficient number of people must be trained in taking samples to cover for all times the premises is operating (e.g. shifts and annual leave).

18.6.2 Environmental sampling

Samples must be taken during the normal processing of products. Surfaces must not be cleaned or sanitised immediately prior to sampling.

Where there are designated sample sites, all of the sample sites selected must be sampled on a regular rotational basis with the flexibility to sample additional sites depending on the circumstances, e.g. past results, maintenance, construction, or when new or modified equipment is installed.

The selection of sampling sites should be reviewed regularly based on the trend analysis of past results, process conditions, or as part of investigative sampling.

Environmental samples should be taken after 2-3 hours of operation and must not occur during a work break.

A suitable aseptic sampling technique for taking environmental swabs is the use of large gauze swabs and metal forceps. This ensures that sufficient pressure can be applied to remove contaminants that may adhere very tightly to surfaces in the processing environment. The use of gauze swabs with metal forceps is particularly useful for providing access to cracks and crevices that may harbour *L. monocytogenes*. An alternative aseptic sampling method is to use a large gauze swab and a gloved hand to provide consistent and sufficient pressure to remove contaminants.

Detailed information on how to take environmental swabs, how to avoid cross-contamination and how to composite environmental samples is provided in the Guidelines for Pathogen Management in Seafood Operations (to be drafted).

Any sampling to check the effectiveness of the cleaning and sanitation programme is in addition to this *L. monocytogenes* monitoring programme.

18.6.3 Product sampling

All products must be subject to the sampling plan specified in the relevant table. Five 25g samples of each type of product must be randomly selected from a batch just prior to packing or in its final packaging depending on the process and product.

Product which is processed on the same line in essentially the same process in the same shift would be considered the same type (unless a major clean down had occurred between shifts) e.g. mussel meat and half shell mussel would be considered the same type; hot smoked salmon is a different type to cold smoked salmon.

The sampler must ensure that the samples are taken aseptically and that the sample and batch are not subject to contamination as a result of the sampling.

18.6.4 Transportation

Samples must be transported under refrigeration or in transport medium that maintains the preservation state and integrity of seafood product, that is, properly packed in a cool box with ice packs. Frozen seafood must remain frozen whilst chilled seafood must remain chilled. Environmental swabs must be transported to the laboratory using a method that ensures that the samples remain chilled.

All samples (product samples and environmental swabs) must be sent to the laboratory as soon is practical.

For example, samples of RTE seafood product may be sent to the laboratory:
- in an intact food grade plastic bag, such as those used for routine packaging, or
- in another suitable container, or
- as individual consumer packs, and
- in a way that maintains the cool chain.

It is preferable that environmental swabs are analysed by the laboratory as soon as possible therefore they should be tested promptly upon receipt by the laboratory. This is because swabs provide a snapshot of what was happening at a particular time. It is important that any bacteria that may be present including *L. monocytogenes* are not altered due to transportation.

Where possible, samples should arrive at the laboratory within 48 hours following collection.

18.7 TREND ANALYSIS

The operator must review and analyse laboratory results and routine monitoring data at least on a six weekly basis to identify trends and corrective action as appropriate.

A way to facilitate trend analysis is by setting up a table that records sampling sites, date of sampling and laboratory results for *Listeria spp*. and *L. monocytogenes*. Another way to identify trends, problems and sources of contamination is to record *Listeria spp*. and *L. monocytogenes* results on a schematic diagram (flowchart) of the seafood operation, as this builds up a picture of where problems exist.

18.8 RECORDS

As part of the *L. monocytogenes* monitoring programme the operator must maintain sufficient records, so that compliance with this chapter can be demonstrated. Records must be:
- retained for at least four years
- retrievable within two working days
- readily available to the verifier or Director-General.

The records must include the following:
- details of the sample (e.g. date and time of sampling, sample type and means of identification, identity of the sampler)

One way to record the individual environmental sampling sites is to place these on a schematic diagram (flowchart) of the seafood operation. The plan may show each sample site, the frequency of sampling, etc.

- the analytical results (including copies of reports from the laboratory)
- details of corrective actions in the event of a detection of *L. monocytogenes* in environment or product samples (date, action taken, etc). Refer to sections 20 or 21 and 22 for details of the corrective actions that must be taken during a *L. monocytogenes* event.

18.9 NOTIFICATION AND REPORTS

18.9.1 Laboratory notification

The operator must have a written agreement with the laboratory to receive email or telephone notification of the detection of any presumptive and confirmed *L. monocytogenes* as soon as the analytical results is known, (i.e. within the laboratory notification procedure) and for receipt of the laboratory report of the results.

> It is recommended that the operator has a written agreement with the laboratory to receive notification of any presumptive (i.e. unconfirmed) detection of *L. monocytogenes* (i.e. *Listeria spp*.) and confirmed detection of *L. monocytogenes* by telephone or email communication as soon as the result is known.
>
> If the operator requires the analysis of composite samples, they should ask the laboratory to confirm that the analytical method used is appropriate and that the sensitivity is not compromised.

18.9.2 Operator notification

If the *L. monocytogenes* is confirmed in the zone 4 environment or in product, the operator must notify the verifier within one working day of receiving the results, and follow this up in writing as soon as practicable.

The requirement to report *L. monocytogenes* results as outlined above applies not only to the testing required by this chapter, but also to any results from additional environmental monitoring of zone 4 environment or testing of product covered by the scope of this chapter that the operator has undertaken on their own behalf.

18.10 DISPOSITION OF PRODUCT

If *L. monocytogenes* is detected in the product, the method of product disposition must be specified in the RMP. Product must be disposed using one of the following methods:

1. Reprocessed to reduce *L. monocytogenes* to acceptable levels using a validated process as described in the RMP with documented evidence. Where product is to be reprocessed under another operator's RMP, the transfer document accompanying the product must be endorsed with the following statement:
   "This product must be reprocessed in New Zealand in accordance with a *L. monocytogenes* control step".
   a) If the reprocessing of affected product is intended to take place on the same process line where *L. monocytogenes* was detected then where possible this should not occur until the relevant number of non-detections of *L. monocytogenes* from the zone 4 environment and product batches has occurred on subsequent monitoring occasions.

> If the source of *L. monocytogenes* contamination in the zone 4 environment has not been identified and corrective action taken then it is likely that the product maybe contaminated.

The reprocessed product must be sampled and tested to confirm that the reprocessing has been effective at:
n=5 product samples (i.e. n=5, c=0 and m=0)
Samples may be composited at L. monocytogenes/125g, where n=5, c=0, m=0 (5 x 25g sub-samples = 125g tested).

b) Where it is intended that affected product will be reprocessed on the same processing line where *L. monocytogenes* was detected but the relevant number of non-detections of *L. monocytogenes* from the zone 4 environment and product batches has not occurred on subsequent monitoring occasions the reprocessed product must be sampled and tested to confirm that the reprocessing has been effective at:
n=60 product samples (i.e. n=60, c=0 and m=0)
Samples may be composited at L. monocytogenes/125g, where n=5, c=0, m=0 (12 x 125g sub-samples); or

2. Destroyed; or

3. If the product is RTE processed finish enumerate the number of *L. monocytogenes* present to meet the following criteria:

- for RTE processed finfish, other than fully retorted finfish, *L. monocytogenes*/ g where n=5, c=1, m=0 and M=102 cfu/g.

If the level of *L. monocytogenes* is less than 100 cfu/g using the sampling plan from the Food Standards Code 1.6.1 then in consultation with MAF the RTE processed finfish may be sold to the final consumer as frozen RTE processed finfish, i.e. the consumer will thaw the product before consumption. The product must be labelled as "For immediate consumption following thawing".
The seafood operator must submit new samples from the same batch of RTE processed finfish and the remaining RTE processed finfish must be frozen immediately.

If the RTE processed finfish operator's RMP does not include freezing, the RTE processed finfish can be transferred to another operator's RMP that does include freezing.

The transfer document accompanying the RTE processed finfish must be endorsed with the following statement;

"This product must be frozen immediately on receipt."

> The Australia New Zealand Food Standards Code standard 1.6.1 permits up to 100 cfu/g of *L. monocytogenes* to be present at the end of shelf life of the RTE processed finfish. RTE processed finfish sold to the consumer as chilled product may allow the growth of *L. monocytogenes* whereas growth will not occur in frozen product.

4. Alternative disposition plans must be documented in the operator's RMP.

18.11 FURTHER ASSISTANCE

If environmental monitoring indicates that there is a persistent contamination problem with *L. monocytogenes* in zones 3 or 4, the operator must seek further assistance to review the monitoring programme and to get advice on what action(s) must be taken.

MAF reserves the right to call in the Task Group when the operator is managing corrective actions following the detection of *L. monocytogenes* to provide further technical expertise and to advise on remedial action.

Where further assistance is required to review the *L. monocytogenes* management programme in a seafood operation, the operator must implement the remedial actions and procedures within the timeframe specified by the expert.

Further assistance can be obtained from:

- the Task Group
- laboratory personnel
- industry
- other technical experts, etc.

For information about further assistance contact the Seafood Standards Council: cathy.webb@seafood.co.nz

A persistent contamination problem may be considered to be one where three consecutive *L. monocytogenes* non-detection has not been achieved after nine separate monitoring occasions from product batches and/or environmental samples from the critical hygiene environment following an event.

Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

19 Detection of *Listeria spp.* in the short and long shelf-life RTE Seafood Product and Environment

Amendment 0

July 2011

19.1 SUMMARY

The following corrective actions must be taken when *Listeria spp*. is detected in the RTE seafood product and/or in the processing environment. That is, *Listeria spp*. has been identified but it will take another 24-48 hours before a confirmed result of the detection or non-detection of *L. monocytogenes* is available.

The laboratory analysis for *L. monocytogenes* identifies *Listeria spp*. first, and then confirms whether the species is *L. monocytogenes*. It is recommended that your contractual agreement with the approved laboratory requires the notification as soon as *Listeria spp*. is detected in product or in the environment. The identification of *Listeria spp*. will occur one or two days before any confirmation of *L. monocytogenes* and will allow you to take immediate action whilst waiting for identification of the *Listeria* species.

The detection of *Listeria spp*. may provide an early indication of a breakdown of controls and for suitable conditions that allow the survival and growth of *L. monocytogenes*. The presence of *Listeria spp*. (and *L. monocytogenes*) may place seafood at risk from the *L. monocytogenes* contamination. Finding any species of *Listeria* indicates that environmental conditions may be suitable for the harbourage, survival and/or growth of other *Listeria* species including *L. monocytogenes*.

19.2 *LISTERIA SPP.* IS DETECTED BUT THE IDENTIFICATION OF THE SPECIES IS NOT CONFIRMED

Within one working day of receiving the laboratory notification of the detection of *Listeria spp*. (i.e. a presumptive positive) in the standard hygiene environment, the critical hygiene environment, and/or the product, the operator must:

- conduct an initial investigation to determine the source of *Listeria spp*. include samples from the same sample sites and from the surrounding area, i.e. spatial sampling to determine the source of contamination.

Some careful compositing of swabs from the areas within a site, e.g. specific items of equipment or from specific areas may be useful in the first instance to isolate potential sites for further investigation.

Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

- consider increasing the monitoring frequency of the environment (e.g. all zones) and product for *L. monocytogenes*;
- review process records to identify whether anything has changed and ensure that process controls for *L. monocytogenes* are operating correctly;
- review the potential for the contamination of product and the critical hygiene environment, e.g. personnel movement and access from the standard hygiene environment;
- review cleaning and sanitation records;
- review the trend analysis to determine patterns or contamination and potential sources;
- take relevant corrective actions to prevent potential future contamination from *L. monocytogenes* where necessary e.g. staff training; and

Operators need to be able to justify any of the decisions made.

- if the detection of *Listeria spp*. is in zone 4 or the product then the seafood operator must determine the range of seafood product batches that were processed at the time of sampling, and their current location.

20 Detection of *L. monocytogenes* in the Zone 1, 2 and 3 Environment

Amendment 0

July 2011

This section covers the actions that operators processing long and short shelf-life RTE seafood product (including intermittent processing) must take if *L. monocytogenes* is detected during the monitoring of the environment in zones 1, 2 and/or 3. Refer to the sampling plans specified in Tables 18.2, 18.3 and 18.4.

20.1 CORRECTIVE ACTIONS FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 1 ENVIRONMENT

Within two working days of receiving the laboratory notification of *Listeria spp*. and or *L. monocytogenes* in the zone 1 environment, the following actions should be considered:

- if a composite sample was analysed, take individual samples for analysis to determine the source of *Listeria spp*. and/or *L. monocytogenes*
- review the access and entrances to the standard hygiene environment from zone 1
- taking additional environmental samples from zones 2 and 3 to ensure that *L. monocytogenes* has not entered the premises
- review the state of environmental cleanliness outside the building, e.g. take measures to improve pest management, remove rubbish, ensure that there is a hard surface outside of entrance ways to minimise the carriage of contamination
- remove the source of contamination (if possible)
- review the trend analysis to determine patterns or contamination and potential sources.

Operators need to be able to justify any of the decisions made.

20.2 CORRECTIVE ACTIONS FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN ZONE 2 ENVIRONMENT

See Appendix 3 for a descriptive diagram of the actions to be taken in the event of detecting *L. monocytogenes* in the zone 2 environment.

1. Within one working day of receiving the laboratory notification of *L. monocytogenes* detection the operator must:
   - commence investigative sampling of the same zone 2 environment sites and surrounding areas, i.e. spatial sampling to determine the source of contamination. The compositing of environmental swabs during investigative sampling to determine the source of contamination is not permitted
   - take any relevant zone 3 samples even if these zones were not routinely sampled at the same time as the zone 2 site(s)

- review the cross-contamination potential between zone 2 and zone 3 and consider any potential sources of contamination from zone 1. Review cleaning & sanitation, personnel movement and access routes, and other contamination control procedures
- take appropriate corrective action including repairs and maintenance of the building and equipment. See Appendix 1 for an example of zones and control measures that should be considered when investigating the source of *L. monocytogenes* contamination.

2. Confirm that there is no cross-contamination between zones and re-sample the zone 2 site(s) where *L. monocytogenes* was detected to identify if corrective action has been effective.

3. If *L. monocytogenes* is detected in zone 3 sites – see section 20.3 for dealing with zone 3. Commence re-sampling of the environment in zones 2 and 3 sites to investigate the source of contamination within one working day of receiving the laboratory results.

   If *L. monocytogenes* is not detected during the investigative sampling of zone 2, continue to monitor the environment in zones 2 on consecutive and different monitoring occasions when product is processed until *L. monocytogenes* has not been detected over three consecutive monitoring occasions (i.e. per batch of product processed) in any zone and then return to the routine sampling frequency (Table 18.2, 18.3, or 18.4).

4. If corrective actions have not completely removed the source of zone 2 *L. monocytogenes* contamination and *L. monocytogenes* continues to be detected, the operator must demonstrate that they are taking all reasonable steps to control the *L. monocytogenes* contamination and prevent contamination of the critical hygiene environment.

If *L. monocytogenes* continues to be detected in zone 2 but *L. monocytogenes* remains undetected in zones 3, this is suggestive of persistent contamination which will require increased vigilance by the operator, e.g. if there have not been three consecutive monitoring occasions where *L. monocytogenes* has not been detected over a limited period of time (i.e. per batch of product processed), or where the six weekly review of records suggests that there is recurring contamination.

Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

20.3 CORRECTIVE ACTIONS FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 3 ENVIRONMENT

See Appendix 4 for a descriptive diagram of the actions to be taken in the event of detecting *L. monocytogenes* in the zone 3 environment.

1. Within one working day of receiving the laboratory notification of *L. monocytogenes* detection the operator must:
   - commence investigative sampling using the same zone 3 sites and additional samples from the surrounding zones, i.e. spatial sampling to determine the source of contamination. The compositing of environmental swabs from different sites during investigative sampling to determine the source of contamination is not permitted

- take samples from zones 2 and 4 even if these zones were routinely sampled at the same time as the zone 3 site(s). Any RTE seafood product processed when the investigative sample of the zone 4 environment is taken must be placed on hold until the laboratory notification is received.

Taking additional samples will help identify the source of contamination, whether *L. monocytogenes* contamination has spread and if the product may be at risk from *L. monocytogenes*.

- review cross-contamination potential between zone 3 and 4 and between the standard hygiene and critical hygiene environments. Review cleaning & sanitation, personnel movement and access, and other contamination control procedures
- take relevant corrective action(s). See Appendix 1 for an example of control measures that should be considered when investigating the source of *L. monocytogenes* contamination.

2. Re-sample the zone 3 site(s) to determine if the corrective action(s) has been effective.

Taking environmental samples after cleaning and sanitising will help to pinpoint the source of contamination.

3. If *L. monocytogenes* is detected in either the zone 2 or 4 sites – see section 20.2 for dealing with zone 2 and the relevant sections for dealing with zone 4 and RTE seafood product.

4. If *L. monocytogenes* is not detected during the investigative sampling of the zone 3 continue monitoring the environment in zone 3 site per batch (or on consecutive monitoring occasions when product covered by scope of this standard is processed) until *L. monocytogenes* is not detected for three consecutive monitoring occasions in zone 3 and then return to the routine sampling frequency in Tables 18.2, 18.3 and 18.4.

The continued sampling of the environment in zone 3 as well as zones 2 and 4 will provide an early warning of whether the product is at risk from *L. monocytogenes* contamination.

5. If *L. monocytogenes* continues to be detected after nine monitoring occasions in the zone 3 environment, the operator must continue to monitor and take corrective action, and must seek further assistance to review the *L. monocytogenes* monitoring programme and to seek advice on action(s) that must be taken (see section 18.1.1).

Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

21 Detection of *L. monocytogenes* in the Zone 4 Environment and long shelf-life RTE Seafood Product

Amendment 0

July 2011

The corrective actions in this section apply to the zone 4 environment and to product when *L. monocytogenes* is detected in the zone 4 environment or in long shelf-life RTE seafood product.

See Appendix 5 for a descriptive diagram of the actions to be taken in the event of detecting *L. monocytogenes* in long shelf-life seafood product or the zone 4 environment.

21.1 CORRECTIVE ACTIONS DUE TO THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 4 ENVIRONMENT

1. If *L. monocytogenes* is detected during the routine monitoring of zone 4 environment action must be taken within one working day to deal with:
   i. the environmental contamination (see section 21.1.1), and
   ii. the product that was processed when the zone 4 environment was monitored (see section 21.1.2), and
   iii. the product that was processed since the last non-detection in the zone 4 environment (see section 21.1.3), and
   iv. the product that has been processed since the zone 4 environment samples were taken (see section 21.1.4).

2. Action must include notifying the MAF VAFP within one working day of receiving confirmation of *L. monocytogenes* detection.

> *L. monocytogenes* contamination of the zone 4 environment, the product contact surfaces in the critical hygiene environment may result in the cross-contamination of any exposed product processed.
>
> Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

21.1.1 Corrective actions for the zone 4 environment

1. Within one working day of receiving the laboratory notification of *L. monocytogenes* detection the operator must:
   - commence investigative sampling of the same zone 4 environment sampling sites. The compositing of samples from different items of equipment during investigative sampling is not permitted

Investigative sampling should include the original sample sites and those from surrounding zones (i.e. spatial sampling), to determine the source of contamination.

- review cleaning and sanitation, personnel movement and access, and other contamination control procedures
- review *L. monocytogenes* monitoring results for zones 2, 3 and 4 to determine possible sources of *L. monocytogenes* and the potential for contamination between zones 3 and 4
- sample any relevant zone 3 environmental sites within one working day of receiving the results even if this zone was routinely sampled on the same day as the zone 4 environment site(s) to determine the contamination source

2. take appropriate corrective action, which must include the cleaning and sanitation of the critical hygiene environment(s). See Appendix 1 for an example of zones and control measures that should be considered when investigating the source of *L. monocytogenes* contamination

Taking environmental samples after cleaning and sanitising will help to pinpoint the source of contamination.

3. If *L. monocytogenes* is detected in any of the zone 3 environment sites – see section 20.3 for dealing with *L. monocytogenes* detection in the zone 3 environment.

4. Continue monitoring of zones 3 and 4 environment sites per batch of product processed (or on consecutive monitoring occasions when product is processed) until there have been three consecutive monitoring occasions of *L. monocytogenes* non-detection from zone 4 environment sites and product samples.

21.1.2 Corrective actions for product processed when the zone 4 environment was monitored

1. If the operator does not have all seafood product processed at the same time as the zone 4 environment was monitored on hold, the operator must recall all product processed (covered by the scope of this chapter) on the implicated processing line where *L. monocytogenes* was detected.

2. The product that was processed on the day that *L. monocytogenes* was detected in the zone 4 environment sites must be disposed according to the procedures documented in the Operator's RMP. Requirements for disposition of long shelf-life product include reprocessing, destruction or the systematic sampling and testing. The systematic sampling and testing is not permitted if *L. monocytogenes* is detected in the product sampled at the same time as the zone 4 environment sample. The retesting of the batch is not permitted. For further information on the reprocessing and destruction of product refer to section 18.10 and for systematic sampling and testing refer to 21.1.3 clause 3 and Appendix 2.

21.1.3 Corrective actions for product processed since the last *L. monocytogenes* non-detection in the zone 4 environment until laboratory notification

1. The operator must recall all affected seafood product which is not on hold under the control of the operator. Affected seafood product is batches of product processed from the implicated processing line since the last non-detection of *L. monocytogenes* in the zone 4

environment until laboratory notification of the result.

2. The operator must take action for each individual batch processed (see section 18.10 for requirements for product disposition) to reprocess, destroy, or systematically sample and test each product line batch.

3. Systematic sampling and testing – Backdating.

The purpose of systematically testing each batch processed also called 'backdating' is to determine if and when the seafood product was contaminated with *L. monocytogenes*. Due to the sporadic nature of *L. monocytogenes* contamination events it is feasible that the critical hygiene environment, especially zone 4, may have been a source of *L. monocytogenes* contamination before it was detected.

a) The product must not be released if *L. monocytogenes* is detected during systematic sampling. There are two options for the systematic sampling and testing of seafood product:
   i. Work systematically backwards from the day before the notification of *L. monocytogenes* detection in the zone 4 environment. Randomly sample product from each batch (e.g. a working day) until there has been three consecutive monitoring occasions of the non-detection of *L. monocytogenes*.
   ii. Work systematically forward from the last non-detection of *L. monocytogenes* in the zone 4 environment, up until the day that the laboratory notification that *L. monocytogenes* was detected to sample product from each batch processed on the processing line. Product must be randomly sampled from each batch.

In option 3 (a)(i) if L. monocytogenes is detected in one batch processed then all product from that point until the day that zone 4 environmental samples were taken is deemed to be contaminated with L. monocytogenes and must be either reprocessed according to a validated method in the RMP, or destroyed.

b) Product must be sampled at:
   n=30 product samples per batch (i.e. n=30, c=0, m=0) to determine absence of L. monocytogenes in 25g.
   L. monocytogenes must not be detected in the product in order for it to be released.

Operators may decide to use a n=60 sampling plan when (not an exclusive list):
- trend analysis shows that there has been *L. monocytogenes* detected on a number of occasions in the critical hygiene environment
- analysing a larger sample of seafood product, n=60 may provide the operator with a greater level of certainty whether *L. monocytogenes* is present. This will provide 95% confidence of detecting at least one case where the incidence level in the batch is 5%
- depending on the market that the seafood product is intended.

− See Appendix 2 for information on how to select samples using a random sampling system.

- If *L. monocytogenes* is detected in any sample, all cartons comprising the batch must be rejected. Retesting of the batch must not be permitted. When *L. monocytogenes* is not detected the operator may release the product.
- If reprocessed, product must be retested to confirm it has been effective, it must be tested at n=5 product samples per batch (i.e. n=5, c=0, m=0) to determine absence of *L. monocytogenes* /125g.

Examples of how to respond to analytical results during the investigative sampling of different batches of RTE seafood product are provided in section 28.1 (Appendix 6).

If there are multiple occurrences of the detection of *L. monocytogenes* from different seafood product batches processed during the systematic sampling then this provides an indication that the process and any *L. monocytogenes* control steps are not under the operator's control. Further investigative sampling and reviews may be undertaken.

Information on where to obtain further assistance is provided in section 18.11.

Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

21.1.4 Corrective actions for zone 4 environment and product processed after laboratory notification of *L. monocytogenes* in zone 4 environment

1. The operator must sample and test the product and the zone 4 environment when seafood product covered by the scope of this chapter is processed following the laboratory notification of *L. monocytogenes* detection.
   Product must be sampled at:
   n=30 product samples per batch (i.e. n=30, c=0, m=0) to determine absence of *L. monocytogenes* in 25g.

2. Refer to Appendix 2 for guidance on the compositing of samples.

3. *L. monocytogenes* must not be detected in any samples representing a batch of seafood product in order for it to be released.

Operators may decide to use an n=60 sampling plan when (not an exclusive list):

- trend analysis shows that there has been *L. monocytogenes* detected on a number of occasions in the critical hygiene environment
- analysing a larger sample of seafood product, n=60 may provide the operator and MAF with a greater level of certainty whether *L. monocytogenes* is present. This will provide 95% confidence of detecting at least one case where the incidence level in the batch is 5%
- depending on the market that the seafood product is intended and any specific assurances.

4. The increased sampling of the product and from the zone 4 environment must continue for each batch processed until there has been three consecutive monitoring occasions of *L. monocytogenes* non-detection in the zone 4 environment sites and product samples. The operator may return to the routine sampling frequency in Tables 18.2 or 18.3.

5. If *L. monocytogenes* is detected in the zone 4 environment and/or product on any of the consecutive monitoring occasions, then the product must be disposed. See section 18.10 for the requirements for the disposition of product.

6. If *L. monocytogenes* continues to be detected in the zone 4 environment and product after four consecutive monitoring occasions, the operator must continue sampling and taking corrective action, and must obtain further assistance (see section 18.11 to review the monitoring programme and to seek advice on action(s) that must be taken).

21.2 DETECTION OF *L. MONOCYTOGENES* IN LONG SHELF-LIFE RTE SEAFOOD PRODUCT

1. Any long shelf-life RTE seafood product where *L. monocytogenes* is detected must be reprocessed using a validated *L. monocytogenes* control step detailed in the RMP, or destroyed. Refer to section 18.10 for the requirements for the disposition of seafood product. The sampling and testing of product where *L. monocytogenes* has already been detected is not permitted.

2. If *L. monocytogenes* is detected in product sampled during the routine fortnightly sampling, the same actions described in section 21.1 must be taken for:
   - the zone 4 environment
   - product processed after the last non-detection of *L. monocytogenes* in zone 4 environment
   - product processed since the laboratory notification of the *L. monocytogenes* result.

3. Action must include notifying the MAF VAFP within one working day of receiving confirmation of the detection of *L. monocytogenes*.

21.2.1 Corrective actions in the processing environment

Refer to section 21.1.1 for actions that must be taken.

21.2.2 Actions for product processed since the last *L. monocytogenes* non-detection in the zone 4 environment until laboratory notification

Refer to section 21.1.3 for actions that must be taken.

21.2.3 Actions for zone 4 environment and product processed after laboratory notification of *L. monocytogenes* in zone 4 environment

Refer to section 21.1.4 for actions that must be taken.

22 Detection of *L. monocytogenes* in the Zone 4 Environment and short shelf-life RTE Seafood Product

Amendment 0

July 2011

This section covers the corrective actions that operators processing short and very short shelf-life RTE seafood product must take if *L. monocytogenes* is detected during the monitoring of the zone 4 environment and/or the product. Refer to the sampling plans specified in Table 18.4.

22.1 CORRECTIVE ACTIONS WHEN *L. MONOCYTOGENES* IS DETECTED IN THE ZONE 4 ENVIRONMENT

1. If *L. monocytogenes* is detected during the routine monitoring of the zone 4 environment, actions must be commenced within one working day to deal with:
   - the environmental contamination; and
   - the product processed at the same time as the zone 4 environment was monitored; and
   - for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in the zone 4 environment.

2. Action must include notifying the MAF VAFP within one working day of receiving confirmation of *L. monocytogenes* detection.

> *L. monocytogenes* contamination of the zone 4 environment, the product contact surfaces in the critical hygiene environment may result in the cross-contamination of any exposed product processed between major clean downs.
>
> Refer to the Guidelines for Pathogen Management in Seafood Operations (to be drafted) for further information and assistance.

22.2 FIRST DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 4 ENVIRONMENT

The corrective actions in this section apply when *L. monocytogenes* is detected in the zone 4 environment at the start of an event rather than as part of a recurring problem identified through the trend analysis of the microbiological results.

22.2.1 Corrective actions for the zone 4 environment

1. Within one working day of receiving the laboratory notification of *L. monocytogenes* detection the operator must:
   - commence investigative sampling of the same zone 4 environmental sites. The compositing of samples from different items of equipment during investigative sampling is not permitted. See Appendix 1 for an example of the corrective actions that can be taken when investigating the source of *L. monocytogenes* contamination.

Investigative sampling should sample the original sample sites and those from surrounding zones, i.e. spatial sampling, to determine the source of contamination.

- review cleaning & sanitation, personnel movement and access, and other contamination control procedures
- review *L. monocytogenes* monitoring results for zones 2, 3 and 4 to determine potential sources of *L. monocytogenes* and opportunities for cross-contamination
- sample any relevant zone 3 environment sites within one working day of receiving the results even if this zone was routinely sampled at the same time as the zone 4 environment site(s) to determine the contamination source
- take appropriate corrective action, which must include conducting a rigorous cleaning and sanitation regime of the critical hygiene environment(s). See Appendix 1 for an example of the control measures to consider when investigating the source of *L. monocytogenes* contamination.

Taking environmental samples after cleaning and sanitising will help to pinpoint the source of contamination.

2. If *L. monocytogenes* is detected from any of the zone 3 environment sites – see section 20.3.

22.2.2 Corrective actions for product processed when the zone 4 environment was monitored

1. Review the laboratory results for the product samples taken at same time as the zone 4 environment samples.

2. If *L. monocytogenes* is detected in the product, the product must be disposed according to the requirements in section 18.10 Disposition. For RTE processed finfish disposition may also include the possible sale as frozen product following the enumeration of the levels of *L. monocytogenes* present.

3. If *L. monocytogenes* is not detected in the product sampled at the same time as the zone 4 environment then it may be systematically sampled and tested using the sampling plan n=20 (absence of *L. monocytogenes* /25g, n=5, c=0 and m=0).

   Further information on how to conduct systematic sampling and testing is provided in Appendix 2.

4. If *L. monocytogenes* is detected during the systematic sampling and testing, all cartons comprising the batch must be rejected and the product must be disposed according to the requirements in section 18.10 Disposition. For RTE processed finfish disposition may also include the possible sale as frozen product following the enumeration of the levels of *L. monocytogenes* present.

5. If *L. monocytogenes* is not detected during systematic sampling and testing, then the 'on hold' seafood product may be released.

22.2.3 Corrective actions for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in the zone 4 environment

1. The operator must sample and test the seafood product and monitor the zone 4 environment on the days that the seafood product covered by the scope of this chapter is processed following laboratory notification of *L. monocytogenes* detection:
   a) seafood product must be sampled using the 'increased' sampling plan: n=20 product samples (i.e. n=20, c=0 and m=0) per batch of product processed. Samples may be composited at *L. monocytogenes*. Refer to Appendix 2 for guidance on the compositing of samples.

      Hold all the further batches of seafood product processed until the laboratory notification of the analytical results from any subsequent sampling are received.
   b) monitor the zone 4 environment when product is processed.

2. *L. monocytogenes* must not be detected in any samples representing a batch of seafood product in order for it to be released.

3. If *L. monocytogenes* is detected in the zone 4 environment and/or the product on any of the consecutive monitoring occasions, then the product must be disposed according to the requirements in section 18.10. Continue to monitor the zone 4 environment and seafood product batches processed (or on consecutive monitoring occasions when product is processed) until there have been three consecutive monitoring occasions of the non-detection of *L. monocytogenes* from the zone 4 environment and product samples.

4. If *L. monocytogenes* has not been detected after three consecutive monitoring occasions the sampling frequency may be reduced to the routine sampling requirements for the zone 4 environment and product as specified in Table 18.4.

22.3 A SECOND DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 4 ENVIRONMENT DURING THE CONTINUED MONITORING

If during the continued increased monitoring of the zone 4 environment and the product or within the six week review period of laboratory results and routine monitoring results there is a second detection of *L. monocytogenes*, the following actions must be taken for the environment and the product within one working day of receiving the laboratory notification of *L. monocytogenes* detection.

> An event is the single detection of *L. monocytogenes* in either the zone 4 environment or the product. A trend, i.e. at least 2 detections of *L. monocytogenes* in the zone 4 environment and/or the product within the 6-weekly review of the laboratory results (see section 18.7). Multiple detections of *L. monocytogenes* may indicate that there may have been a breakdown of *Listeria* controls.

Action must include notifying the MAF VAFP within one working day of receiving confirmation of *L. monocytogenes* detection.

22.3.1 Corrective actions for the zone 4 environment

1. Within one working day of receiving the laboratory notification of *L. monocytogenes* detection the operator must:
   - commence investigative sampling of the same zone 4 environment sites. The compositing of samples from different sites during investigative sampling is not permitted. See Appendix 1 for an example of the corrective actions that can be taken when investigating the source of *L. monocytogenes* contamination.

Investigative sampling should sample the original sample sites and those from surrounding zones, i.e. spatial sampling, to determine the source of contamination. Take environmental samples from different items of equipment after cleaning and sanitising is conducted to pinpoint the source of contamination.

   - review cleaning and sanitation, equipment and maintenance records, personnel movement and access, and other procedures to prevent contamination
   - review *L. monocytogenes* monitoring results for zones 2, 3 and 4 to determine potential sources of *L. monocytogenes* and opportunities for cross-contamination
   - sample any relevant zone 3 environment sites even if this zone was routinely sampled at the same time as the zone 4 environment site(s) to determine the contamination source
   - review cross-contamination pathways between zones 3 and 4, e.g. movement of staff and equipment between the critical hygiene (zones 3 and 4) and standard hygiene (zone 2) environment:
   - take appropriate corrective action(s), which must include conducting a rigorous cleaning and sanitation regime of the critical hygiene environment (zones 3 and 4). See Appendix 1 for a description of the corrective actions that can be taken when investigating the source of *L. monocytogenes* contamination.

2. If *L. monocytogenes* is detected in any of the zone 3 environment sites sampled – see section 20.3 for dealing with *L. monocytogenes* detection in the zone 3 environment.

22.3.2 Corrective actions for product processed when the zone 4 environment was monitored

1. Review the laboratory results for the product samples taken at the same time that the zone 4 environment was sampled within one working day of receiving the laboratory notification of *L. monocytogenes* detection.

2. If *L. monocytogenes* is detected in the product, the product must be disposed according to the requirements in section 18.10 Disposition. For RTE processed finfish disposition may also include the possible sale as frozen product following the enumeration of the levels of *L. monocytogenes* present.

3. If *L. monocytogenes* is not detected in the product sampled at the same time as the zone 4 environment then it may be systematically sampled and tested using the sampling plan n=30 (absence of *L. monocytogenes* / 25g, n=5, c=0, m=0). The seafood product must be kept 'on hold'.

   Further information on how to conduct systematic sampling and testing is provided in Appendix 2. The compositing of samples is permitted.

4. If *L. monocytogenes* is detected during systematic sampling and testing, all cartons comprising the batch must be rejected and the product disposed according to the

requirements in section 18.10 Disposition. For RTE processed finfish this may also include the possible sale as frozen product following the enumeration of the levels of *L. monocytogenes* present.

5. If *L. monocytogenes* is not detected during systematic sampling and testing, then the product may be released for sale.

22.3.3 Corrective actions for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in the zone 4 environment

1. The operator must sample and test the seafood product and monitor the zone 4 environment when seafood product covered by the scope of this chapter is processed following the laboratory notification of *L. monocytogenes* detection:
   a) seafood product processed must be sampled using the 'intensive' sampling plan, where n=30 (absence of *L. monocytogenes* /25g where n=30, c=0 and m=0) product samples for each day of processing. Samples may be composited. Refer to Appendix 2 for guidance on the compositing of samples.

      Hold all the further batches of seafood product processed until the laboratory notification of the analytical results from any subsequent sampling are received.
   b) monitor the zone 4 environment when product is processed.

Operators may decide to use an n=60 sampling plan when (not an exclusive list):
- trend analysis shows that there has been *L. monocytogenes* detected on a number of occasions in the critical hygiene environment
- analysing a larger sample of seafood product, n=60 may provide the operator and MAF with a greater level of certainty whether *L. monocytogenes* is present, e.g. the use of an n=60 sampling plan will provide 95% confidence of detecting at least one case where the incidence level in the batch is 5%
- depending on the market that the seafood product is intended and any specific assurances required following the detection of *L. monocytogenes*.

2. *L. monocytogenes* must be not detected in any samples representing a batch of seafood product in order for it to be released.

3. If *L. monocytogenes* is detected in the zone 4 environment and/or the product on any of the consecutive monitoring occasions, then the product must be disposed according to the requirements in section 18.10.

4. Continue to monitor the zone 4 environment and seafood product batches using the intensive sampling plan (n=30) until *L. monocytogenes* has not been detected over three consecutive monitoring occasions (or on consecutive monitoring occasions when batches of product are processed). All seafood product processed must remain on hold under the control of the operator until the laboratory notification of the analytical results from any subsequent sampling are received.

5. If *L. monocytogenes* is not detected in the product over three consecutive monitoring occasions using the 'intensive' sampling plan (n=30), the operator can reduce the sampling rate to n=10, the 'increased verification' sampling plan, per batch of product processed.

Product samples may form composite samples. Refer to Appendix 2 for guidance on the compositing of samples.

L. monocytogenes must not be detected in the product in order for it to be released.

6. When there has been three consecutive monitoring occasions of *L. monocytogenes* non-detection in the seafood product batches using the 'increased verification' sampling plan, n=10, the operator may return to the routine sampling frequency specified in Table 18.4. Any further detection of *L. monocytogenes* in the zone 4 environment or product must result in additional corrective action.

7. If *L. monocytogenes* continues to be detected in the zone 4 environment and product after three consecutive monitoring occasions, the operator must continue sampling and taking corrective action, and must seek further assistance to review the monitoring programme and to obtain advice on action(s) that must be taken. See section 18.11 for information on where further assistance can be obtained.

22.4 A THIRD DETECTION OF *L. MONOCYTOGENES* DURING THE CONTINUED MONITORING

1. The operator must seek further assistance. See section 18.11 for information on where further assistance can be obtained.

2. Action must include notifying the MAF VAFP within one working day of receiving confirmation of *L. monocytogenes* detection.

3. Consider temporarily ceasing the processing of seafood product whilst a thorough and intensive cleaning and sanitising programme is conducted.

The continued detection of *L. monocytogenes* in the zone 4 environment and/or product indicates that there has been a serious breach of the hygienic controls in the critical hygiene environment.

22.4.1 Corrective actions for the zone 4 environment

1. Review the corrective actions taken previously during the event and take action as appropriate within one working day of receiving the laboratory notification of *L. monocytogenes* detection.

2. Review personal hygiene and movement of staff and equipment between the critical hygiene (zones 3 and 4) and standard hygiene (zone 2) environment.

3. Take appropriate corrective action(s). See Appendix 1 for an example of the corrective actions that can be taken when investigating the source of *L. monocytogenes* contamination.

22.4.2 Corrective actions for product processed when the zone 4 environment was monitored

1. Within one working day of receiving the laboratory notification of *L. monocytogenes* detection:

- Review the laboratory results for the product samples taken at the same times as the zone 4 environment samples
- Review the corrective actions taken previously during the event and take action as appropriate.

2. If *L. monocytogenes* is detected in the product, the product must be disposed according to the requirements in section 18.10 Disposition. For RTE processed finfish disposition may also include the possible sale of as frozen product following the enumeration of the levels of *L. monocytogenes* present.

22.4.3 Corrective actions for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in the zone 4 environment

1. The operator must sample and test the seafood product batch and monitor the zone 4 environment on the days when seafood product covered by the scope of this chapter is processed following laboratory notification of *L. monocytogenes* detection.

2. When processing restarts, the monitoring of the zone 4 environment must continue for every batch processed until there have been three consecutive monitoring occasions of the non-detection of *L. monocytogenes*. The operator may return to the routine scheduled zone 4 *L. monocytogenes* sampling programme in Table 18.4.

3. Product must be sampled at:
   - The 'intensive' sampling plan, n=30 product samples per batch, (i.e. n=30, c=0, m=0) to determine absence of *L. monocytogenes* in 25g.

The operator has an option to analyse product using an n=60 sampling plan.

   - Product samples may form composite samples. Refer to Appendix 2 for guidance on the compositing of samples.
   - All seafood product processed must remain 'on hold' under the control of the operator until the notification is received from the laboratory.
   - *L. monocytogenes* must not be detected in any samples representing a batch of seafood product in order for it to be released.

Operators may decide to use an n=60 sampling plan when (not an exclusive list): • trend analysis shows that there has been *L. monocytogenes* detected on a number of occasions in the critical hygiene environment • analysing a larger sample of seafood product, n=60 may provide the operator and MAF with a greater level of certainty whether *L. monocytogenes* is present, e.g. the use of an n=60 sampling plan will provide 95% confidence of detecting at least one case where the incidence level in the batch is 5% • depending on the market that the seafood product is intended and any specific assurances required following the detection of *L. monocytogenes*.

4. The increased sampling of the seafood product and the zone 4 environment must continue for each batch processed until there have been three consecutive monitoring occasions of *L. monocytogenes* non-detection in the zone 4 environment and seafood product samples.

5. If *L. monocytogenes* is detected in the zone 4 environment and/or in the seafood product batch on any of the monitoring occasions, then the product must be disposed according to the requirements in section 18.10. For RTE processed finfish disposition may also include the possible sale as frozen product following the enumeration of the levels of *L. monocytogenes* present.

6. If *L. monocytogenes* is not detected for three consecutive monitoring days in product using the 'intensive' sampling plan (n=30), the operator can reduce the sampling rate to n=10, the 'increased verification' sampling plan, per batch of product processed. Samples may form composite samples.

7. When there has been three consecutive monitoring occasions of *L. monocytogenes* non-detection in the seafood product batches using the 'increased verification' sampling plan, n=10, the operator may return to the routine sampling frequency specified in Table 18.4. Any further detection of *L. monocytogenes* in the zone 4 environment or product must result in additional corrective action.

8. If *L. monocytogenes* continues to be detected in the zone 4 environment and product after four monitoring occasions, the operator must continue sampling and taking corrective action, and must seek further assistance to review the monitoring programme and to obtain advice on action(s) that must be taken. See section 18.11 for information on where further assistance can be obtained.

22.5 *L. MONOCYTOGENES* SAMPLING FREQUENCIES FOR SHORT SHELF-LIFE RTE SEAFOOD PRODUCT

Table 22.1: Product sampling frequency

Sampling plan	Definition	Minimum frequency	Sample size[8]
Routine	Sample of product processed at the same time as the zone 4 environment is sampled	Fortnightly[9]	5 samples[10]
Increased	After the 1st detection of *L. monocytogenes*	per batch of product processed after notification	20 samples[10]
Intensive	After the 2nd detection of *L. monocytogenes* After the 3rd detection of *L. monocytogenes*	per batch of product processed after notification	30 samples[10]
Increased Verification	After three consecutive monitoring occasions of the non-detection of *L. monocytogenes* at the intensive sampling plan	per batch of product processed after notification	10 samples[10]

[8] Product must meet the following standard:
Absence of *L. monocytogenes*/25 g where n=5, c=0, m=0.

[9] All sampling (zones 2, 3, 4 and product) must be taken on the same day, within essentially the same time frame.

[10] The samples may be individual or composited.
Typically 5 x 25g samples are tested, which may form a single 125g composite sample to meet this microbiological requirement, i.e. absence of *L. monocytogenes* in 125g.

22.6 ACTIONS TO BE TAKEN FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN SHORT SHELF-LIFE RTE SEAFOOD PRODUCT

Refer to Appendix 8 for a diagrammatic explanation of the corrective actions that must be taken following the detection of *L. monocytogenes* in short shelf-life RTE seafood product.

22.7 FIRST DETECTION OF *L. MONOCYTOGENES* IN SEAFOOD PRODUCT

The corrective actions in this section apply when *L. monocytogenes* is detected in seafood product at the start of an event rather than as part of a recurring problem identified through the trend analysis of microbiological results.

See Appendix 8 for a descriptive diagram of the actions to be taken in the event of detecting *L. monocytogenes* in short shelf-life seafood product.

Action must include notifying the MAF VAFP within one working day of receiving confirmation of *L. monocytogenes* detection.

22.7.1 Corrective actions for the product processed

1. The operator must commence action within one working day to deal with the product.

2. If *L. monocytogenes* is detected in the product, the product must be disposed according to the requirements in section 18.10. For RTE processed finfish disposition may also include the possible sale as frozen product following the enumeration of the levels of *L. monocytogenes* present.

22.7.2 Corrective actions for the zone 4 environment

1. Review the laboratory results for the zone 4 environment taken at the same time as the product samples within one working day of receiving the laboratory notification of *L. monocytogenes* detection.

2. The operator must take the actions specified in section 22.2.1 to determine and remove the source of contamination.

> If the source of *L. monocytogenes* contamination in the zone 4 environment has not been identified and corrective action taken, then it is likely that the product maybe contaminated.

22.7.3 Corrective actions for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in product

1. The operator must sample and test the seafood product and monitor the zone 4 environment on the days that the seafood product covered by the scope of this chapter is processed following laboratory notification of *L. monocytogenes* detection:
   a) seafood product must be sampled using the 'increased' sampling plan: n=20 product samples (i.e. n=20, c=0 and m=0) per batch of product processed.

Product samples may form composite samples. Refer to Appendix 2 for guidance on the compositing of samples.

Hold all the further batches of seafood product processed until the laboratory notification of the analytical results from any subsequent sampling are received.

b) zone 4 environment (n=5 swabs).

2. *L. monocytogenes* must not be detected in any samples representing a batch of seafood product in order for it to be released.

3. If *L. monocytogenes* is detected in the zone 4 environment and/or the product on any of the consecutive monitoring occasions, then the product must be disposed according to the requirements in section 18.10.

4. Continue to monitor the zone 4 environment and seafood product batches processed (or on consecutive monitoring occasions when product is processed) until there have been three consecutive monitoring occasions of the non-detection of *L. monocytogenes* from the zone 4 environment and product samples.

5. If *L. monocytogenes* has not been detected after three consecutive monitoring occasions the sampling frequency may be reduced to the routine sampling requirements for the zone 4 environment and product as specified in Table 18.4.

22.8 SECOND DETECTION OF *L. MONOCYTOGENES* IN THE SEAFOOD PRODUCT

22.8.1 Corrective action for the product

Refer to section 22.3.2 for the corrective action that must be taken for the batch of product.

22.8.2 Corrective action for the zone 4 environment

Refer to section 22.3.1 for the corrective actions that must be taken for the zone 4 environment.

22.8.3 Corrective actions for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in product

Refer to section 22.3.3 for the corrective actions that must be taken for the product and the zone 4 environment after the second laboratory notification of *L. monocytogenes* in product.

22.9 THIRD DETECTION OF *L. MONOCYTOGENES* IN THE PRODUCT

22.9.1 Corrective action for the product

Refer to section 22.3.2 for the corrective action that must be taken for the batch of product.

22.9.2 Corrective action for the zone 4 environment

Refer to section 22.4 for the corrective actions that must be taken for the zone 4 environment.

22.9.3 Corrective actions for the zone 4 environment and the product processed after laboratory notification of *L. monocytogenes* in product

Refer to section 22.4.3 for the corrective actions that must be taken for the product and the zone 4 environment after the third laboratory notification of *L. monocytogenes* in product.

23 Appendix 1

Amendment 0

July 2011

23.1 WHAT ZONES SHOULD I CONSIDER WHEN INVESTIGATING THE POSSIBLE SOURCE OF *L. MONOCYTOGENES* CONTAMINATION?

Zones and issues to consider when investigating the source of *L. monocytogenes* contamination include:

- dismantling and stripping down of equipment. Take swabs from internal surfaces and analyse after cleaning to confirm any sources of contamination have been removed. Taking environmental samples after cleaning and sanitising will pinpoint the source of contamination
- check for cracks, chips or other possible sources of *L. monocytogenes* in surrounding zones such as the floors, walls and/or equipment
- review cleaning and sanitation procedures, including the use of mid-shift hose-downs. Check correct detergent, correct sanitizer, chemical strength, contact time, use of manual scrubbing, hard to clean zones, impossible to clean zones (metal-to-metal sandwiches, nylon-to-nylon sandwiches or nylon-to-metal sandwiches), care of cleaning equipment, etc
- ensuring separation between the standard and critical hygiene environment, e.g. dedicated personnel, clothing and equipment, separate changing rooms with boot exchanges or boot washes
- ensure that access routes between the standard and critical hygiene environment are controlled
- the use of positive air pressure in the critical hygiene environment
- review procedures for incoming materials to minimise the risk of introducing *L. monocytogenes*
- pipe water on floors away to drains to prevent the creation of wet conditions in which *L. monocytogenes* can grow. Ensure that there are no opportunities for condensation to drip onto product contact surfaces from overhead structures, such as overhead wiring, metal work, pipes, air conditioning units or vents.

24 Appendix 2

Amendment 0

July 2011

24.1 SYSTEMATIC SAMPLING OF PRODUCT AND COMPOSITE SAMPLES

24.1.1 Systematic sampling

The purpose of systematically testing the day's production is to determine if and when the product was contaminated with *L. monocytogenes*. Due to the sporadic nature of *L. monocytogenes* contamination events it is feasible that the critical hygiene environment, especially zone 4, may have been a source of *L. monocytogenes* contamination before it was detected.

L. monocytogenes/25g, n=5, c=0, m=0 (20 x 25g sub samples per batch = 250g tested as 4 x 125g composites, each reported as *L. monocytogenes*/125g). *L. monocytogenes* must not be detected in the product in order for it to be released.

1. All samples must be selected using a random sampling system, e.g. the total number of cartons in the batch must be known prior to computing the sampling plan. Each carton in the batch must be issued with a sequential number and the required numbered cartons selected using random number tables.

2. Any carton which fits the parameters of the batch but which was not included in the batch at the time of sampling must not, under any circumstances, be considered to be part of that batch (i.e. as a late entry) for the purposes of release/certification.

3. No carton must be removed from the batch between the allocation of sequential numbers and the taking of samples. Cartons must only be removed after the samples have been taken from the batch.

4. If *L. monocytogenes* is detected in any sample, all cartons comprising the batch must be disposed according the requirements in section 18.10 Disposition. When *L. monocytogenes* is not detected the operator may release the product.

Example:
The batch is:

- all seafood product covered by the scope of this chapter processed and packaged between major clean downs
- determine where this product is held and document the total number of cartons of seafood product and their location
- assign each carton in the batch a sequential number
- using random number tables, generate X random numbers (e.g. 30) from cartons
- a sample must be taken from each of the X cartons (e.g. 30) corresponding to the random numbers. These samples must be stored separately to the batch.

24.1.2 The compositing of samples

How to composite samples – following the detection of *L. monocytogenes* in the zone 4 environment or the product:

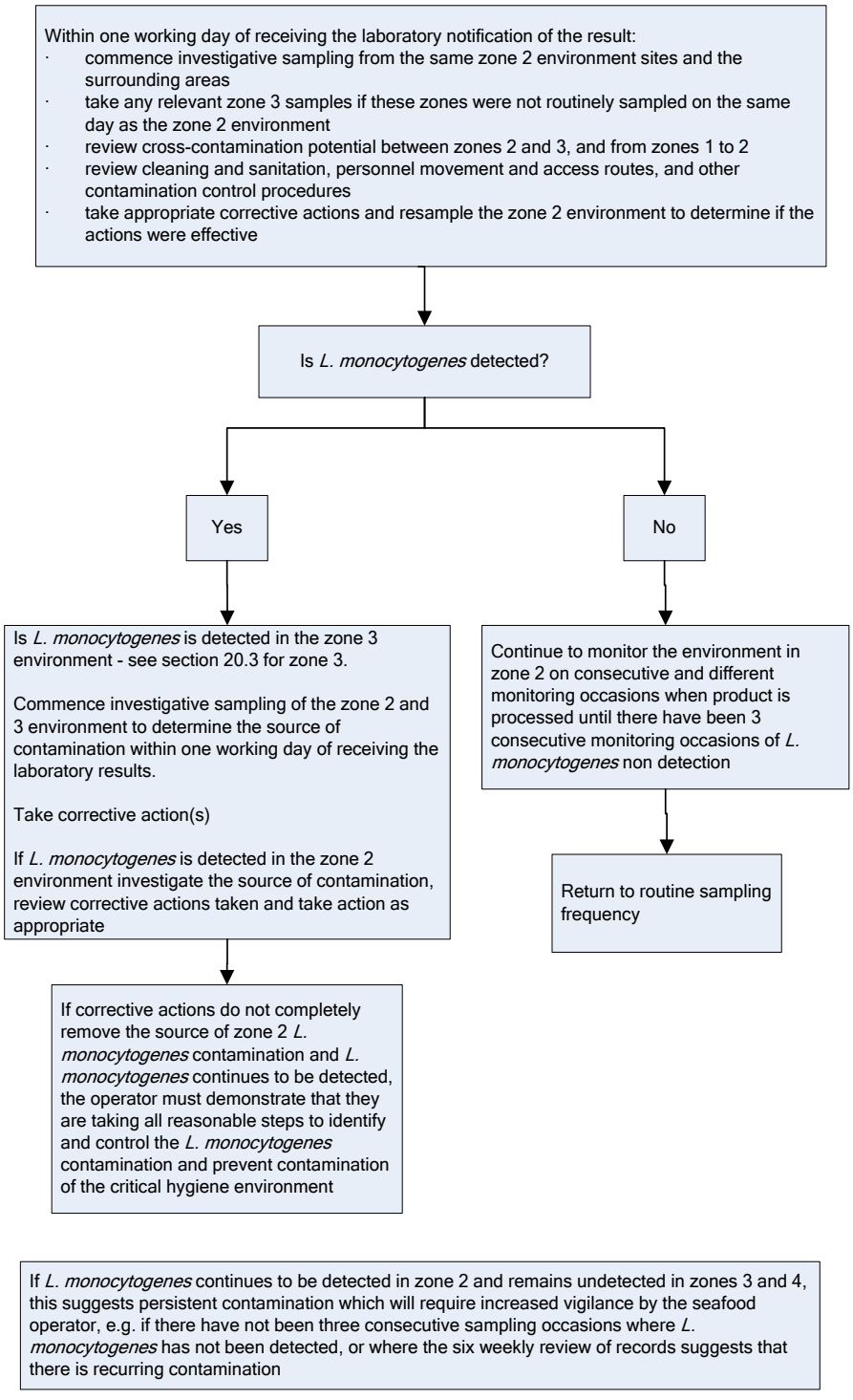
- the 30 samples may form six composite samples comprising of five individual samples for the purposes of laboratory analysis (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample)
- when the composite sampling of recalled product is required, the unopened packages of frozen product may be submitted to the laboratory. The laboratory will aseptically open the packages and take 25 g samples from each. These will form the composite sample which will be tested; the composite sample must not be more than five 25g samples (125g)
- alternatively where there are large cartons of product the samples should be taken aseptically by the operator at the premises. Care should be taken to ensure that the equipment and packaging material used will not contaminate the RTE seafood
  - *L. monocytogenes*/125g, n=5, c=0, m=0 (30 x 25g sub-samples per batch = 750g tested as 6 x 125g composites, each reported as *L. monocytogenes*/125g). *L. monocytogenes* must not be detected in the product in order for it to be released
  - when using an n=60 sampling plan, the 60 samples may form 12 composite samples comprising of five individual samples for the purposes of laboratory analysis (laboratory analytical results should report presence or absence of *L. monocytogenes* in a 125g sample)
  - *L. monocytogenes*/125g, n=5, c=0, m=0 (60 x 25g sub-samples per batch = 1500g tested as 12 x 125g composites, each reported as *L. monocytogenes*/125g). *L monocytogenes* must not be detected in the product in order for it to be released.

25 Appendix 3

Amendment 0

July 2011

25.1 CORRECTIVE ACTIONS FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 2 ENVIRONMENT

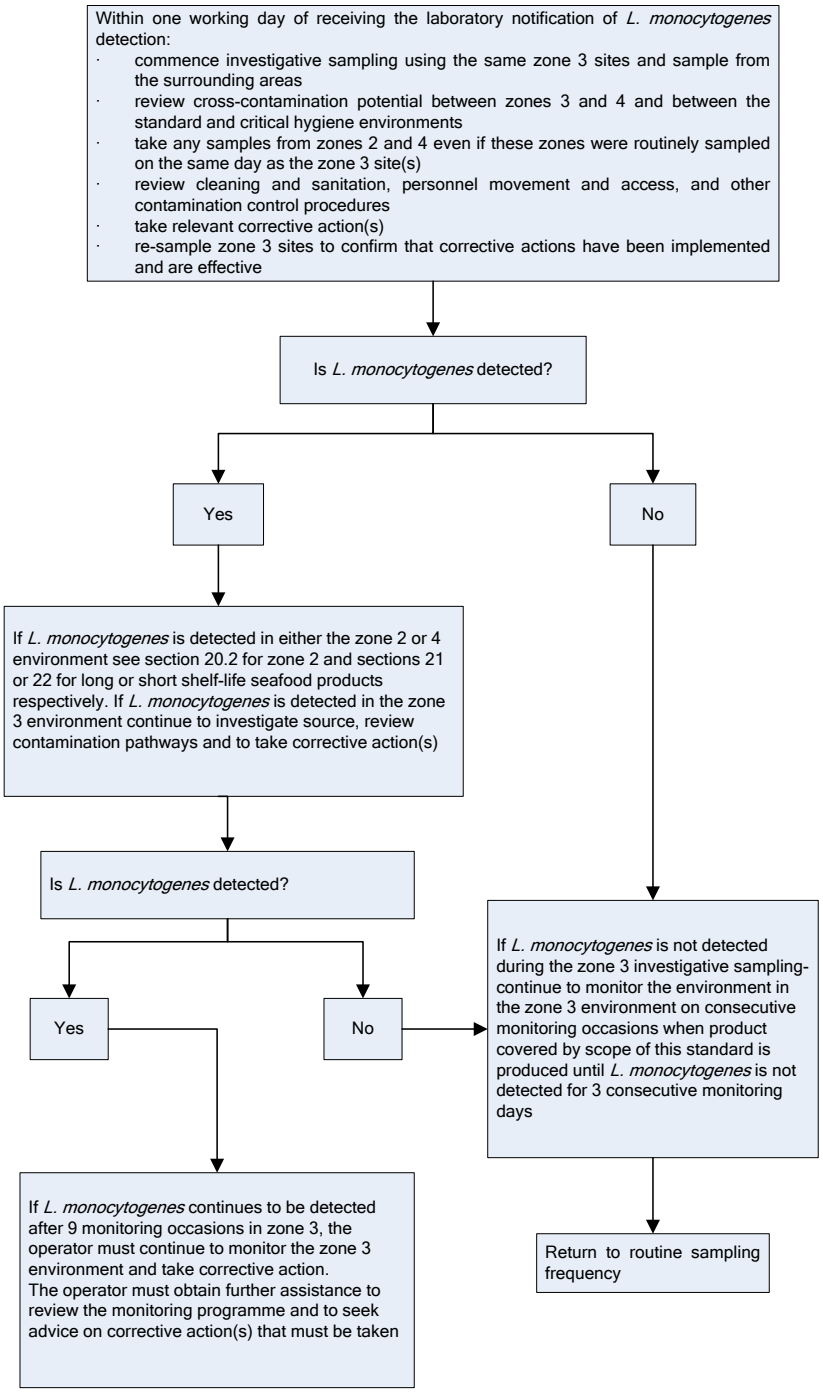


26 Appendix 4

Amendment 0

July 2011

26.1 CORRECTIVE ACTIONS FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 3 ENVIRONMENT

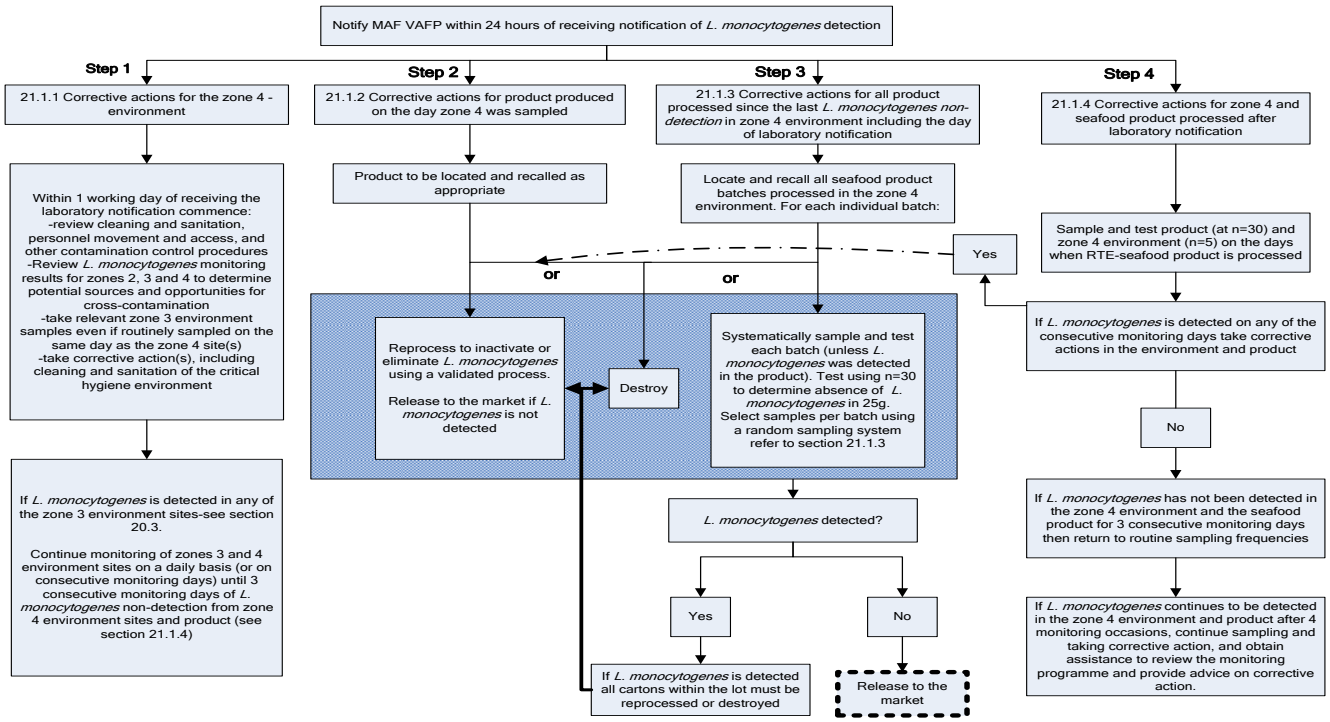


27 Appendix 5

Amendment 0

July 2011

27.1 LONG SHELF-LIFE SEAFOOD PRODUCTS - CORRECTIVE ACTIONS FOLLOWING THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 4 ENVIRONMENT



28 Appendix 6

Amendment 0

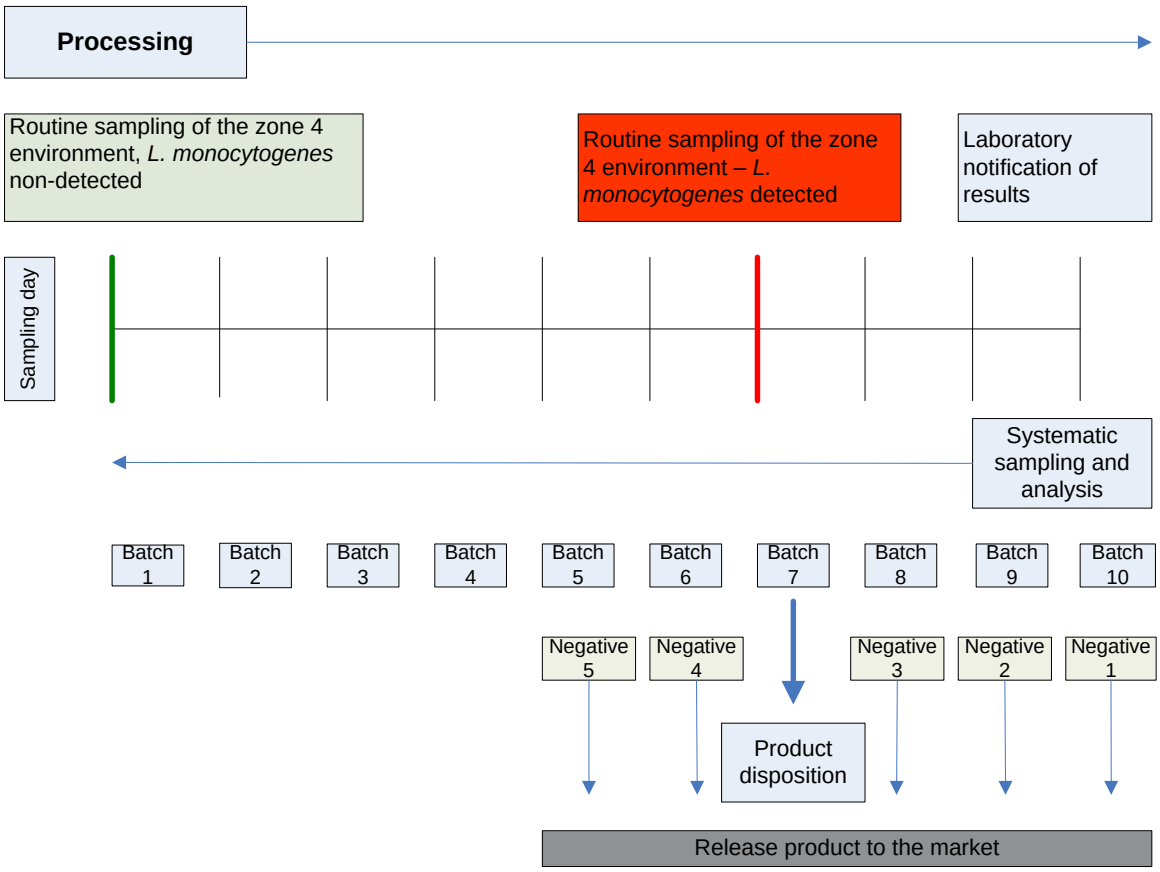
July 2011

28.1 LONG SHELF-LIFE SEAFOOD PRODUCTS - EXAMPLES OF HOW TO RESPOND TO ANALYTICAL RESULTS DURING THE INVESTIGATIVE SAMPLING OF DIFFERENT BATCHES OF RTE SEAFOOD PRODUCT

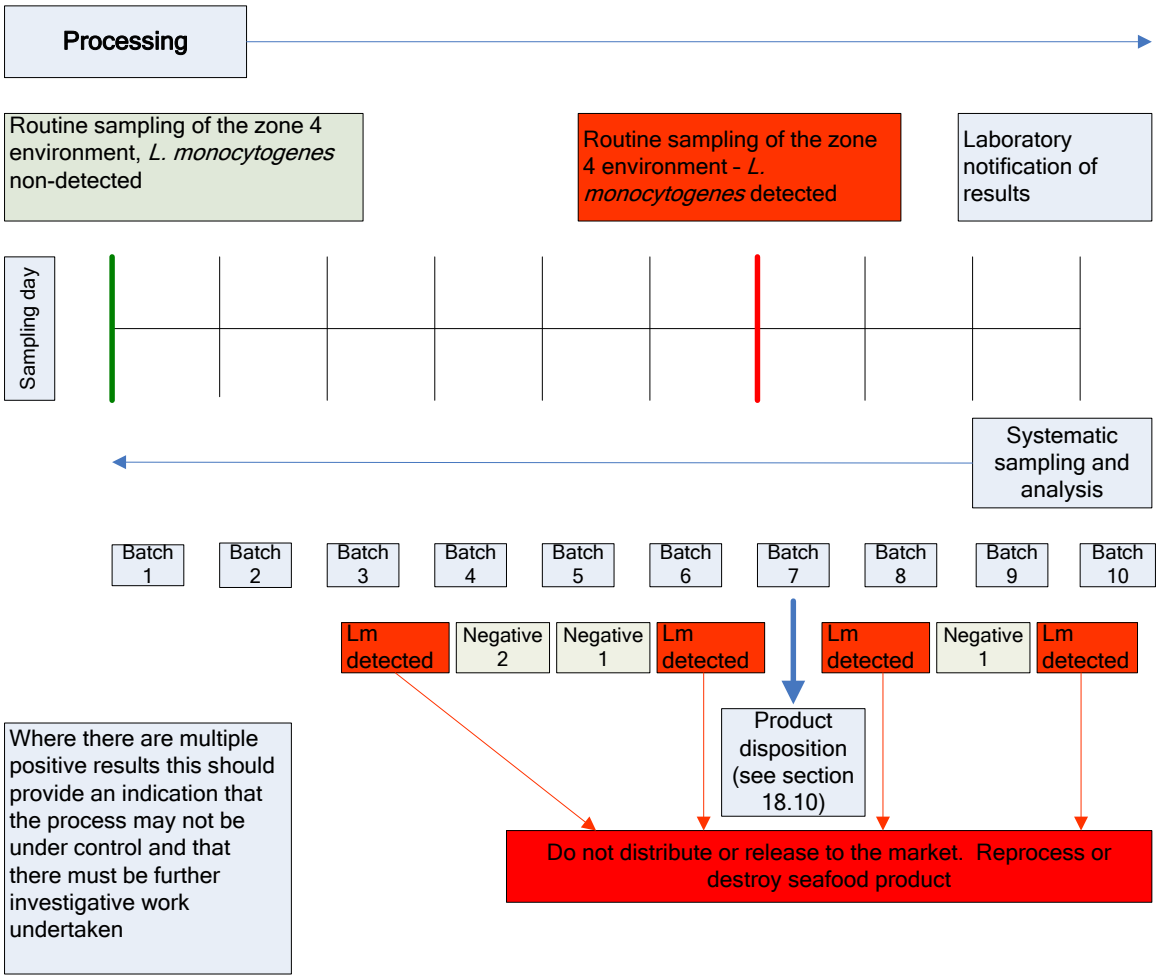
Backdating means the systematic sampling and testing of each batch of seafood product following the detection of *L. monocytogenes* in the zone 4 environment and/or product.

Example 1: Three consecutive monitoring days of *L. monocytogenes* non detection

Refer to section 21.1.3 Corrective actions for product processed since the last *L. monocytogenes* non-detection in the zone 4 environment until laboratory notification and section 21.1.2. Corrective actions for product processed when the zone 4 environment was monitored (or routine sampling of product).



Example 2: Multiple detection of *L. monocytogenes* in product during systematic sampling and testing

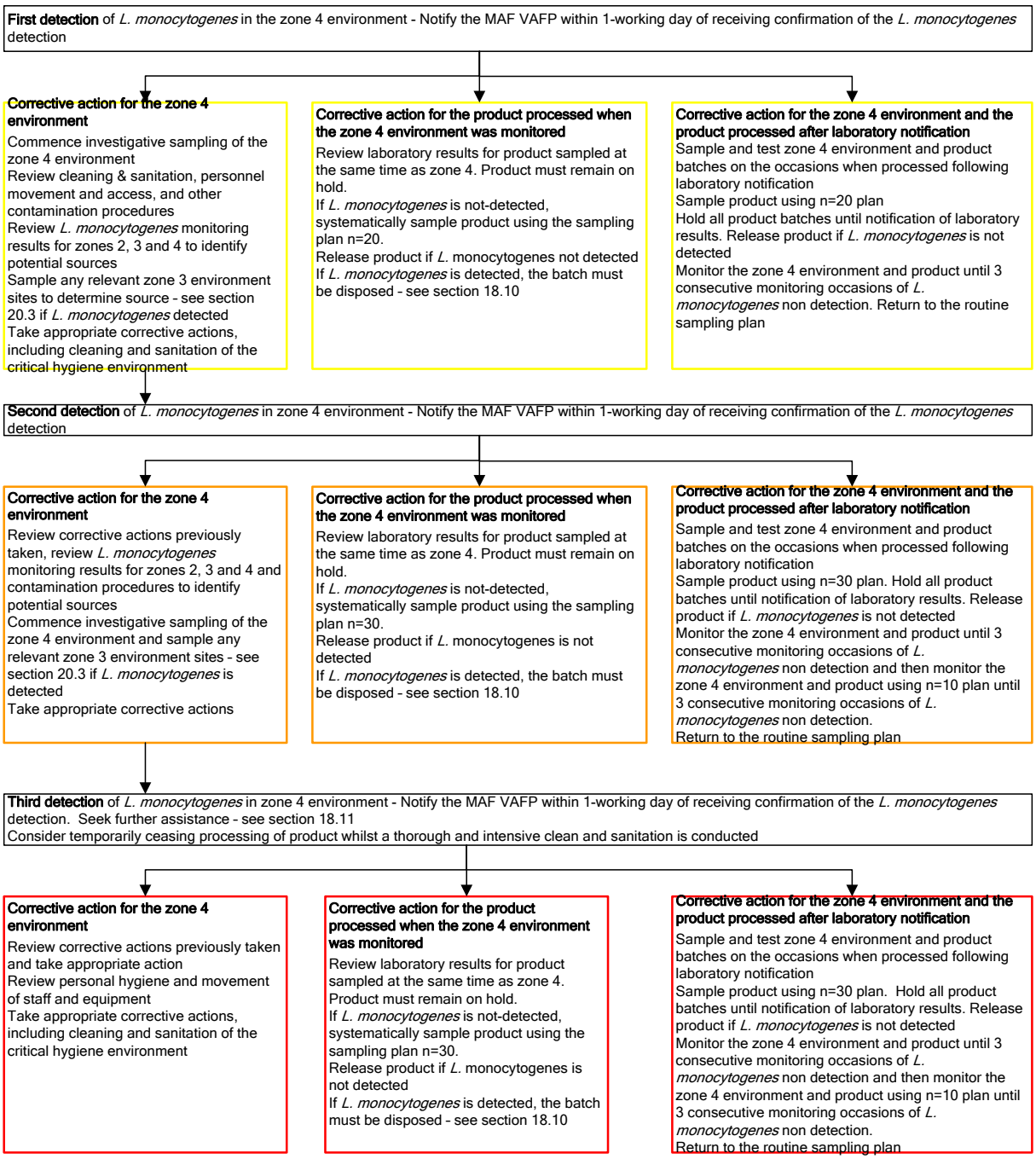


29 Appendix 7

Amendment 0

July 2011

29.1 SHORT SHELF-LIFE SEAFOOD PRODUCTS: CORRECTIVE ACTIONS IN RESPONSE TO THE DETECTION OF *L. MONOCYTOGENES* IN THE ZONE 4 ENVIRONMENT

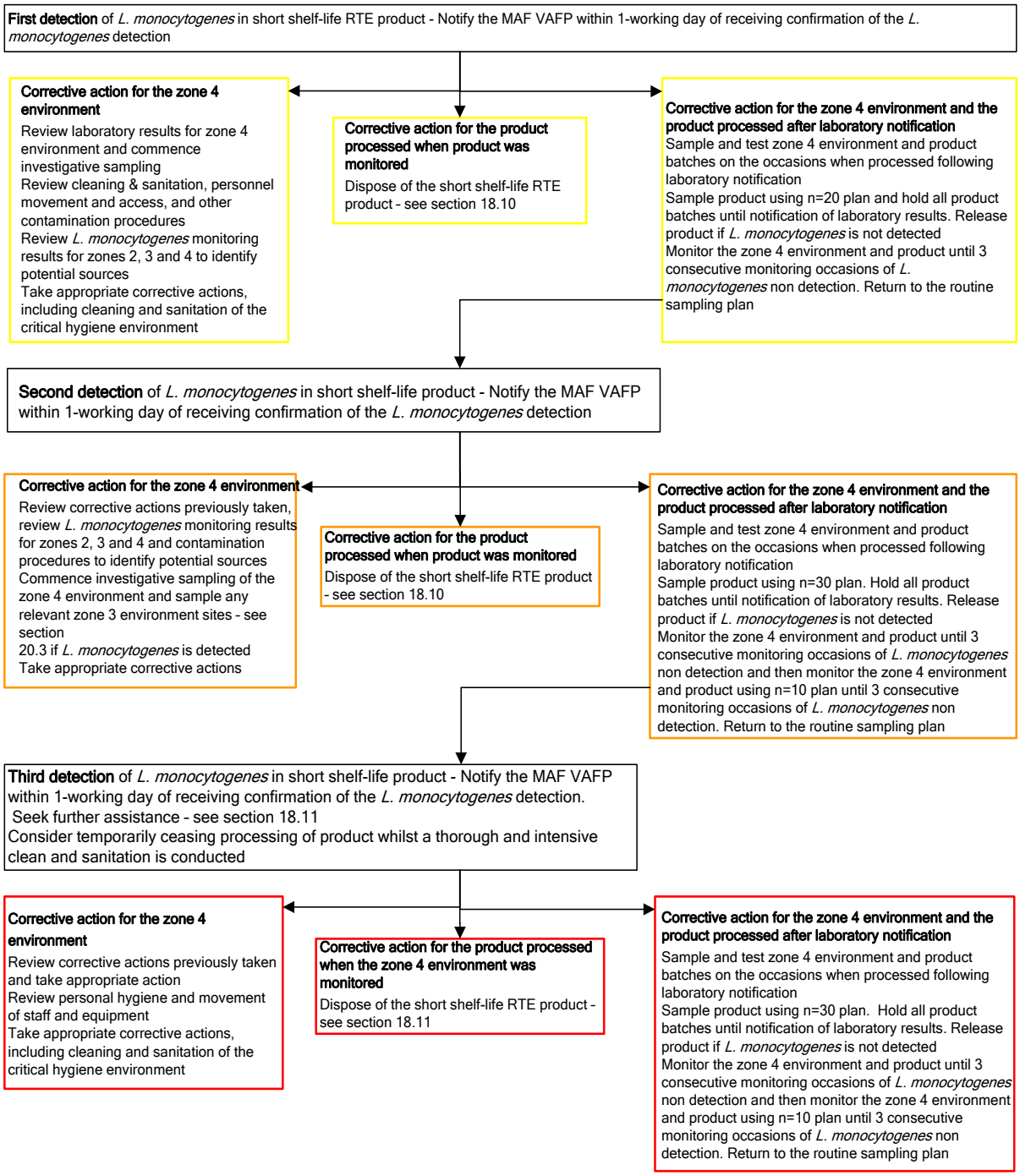


30 Appendix 8

Amendment 0

July 2011

30.1 SHORT SHELF-LIFE SEAFOOD PRODUCTS: CORRECTIVE ACTIONS IN RESPONSE TO THE DETECTION OF *L. MONOCYTOGENES* IN RTE SHORT SHELF-LIFE PRODUCT



31 Products for Animal Consumption

Amendment 0

July 2011

31.1 PURPOSE AND SCOPE

To ensure that products for animal consumption derived from seafood products processing (also referred to in the seafood products industry as "excess materials") are managed so as to minimise contamination of seafood products for human consumption and to ensure that the products are fit for their intended purpose.

Note: The scope excludes requirements under the Animal Products (Specifications for Products intended for Animal Consumption) Notice 2006.

Some material resulting from the processing of seafood products product for human consumption may be sold as bait. Under the Animal Products Act, bait is not considered to be material for animal consumption. Bait is often treated as product for human consumption up until the point of labelling. For example an operator may include production of fish heads within the scope of their RMP with 10% of these labelled and sold for human consumption, while the remainder, which have gone through identical processing, are deemed bait and labelled as inedible.

Operators should ensure that bait products likely to be re-introduced into the food chain are protected from bacterial contamination and growth.

Despite being destined for inedible use, bait should be handled and processed in a hygienic manner with as little delay as possible to prevent spoilage.

31.2 MANDATORY REQUIREMENTS

31.2.1 HC Spec 19(1)

Equipment or storage areas used to store or contain animal material that is not suitable for processing or animal product that is not fit for human consumption, but is suitable or fit for some other purpose, must —

a) be clearly identified; and
b) not be a source of contamination to other animal material or animal product that is intended for human consumption.

31.2.1.1 HC Spec 19 (2)

Animal material or animal product that is not suitable for processing or not fit for human consumption but is suitable or fit for some other purpose, must be kept under controlled conditions until adequately identified in a manner that will ensure that it will not be mistakenly or fraudulently released as suitable for processing or fit for human consumption.

31.3 PROCEDURES

31.3.1 The operator must:

- establish criteria for deciding which materials are to be classified as products for animal consumption; and
- document procedures to control the handling, storage and disposal of such materials.

31.3.2 All seafood products material destined for further processing into products for animal consumption must be handled so that it is in suitable condition for its intended purpose.

> Excess fish material for transferral to a fishmeal plant must not be spoilt to such an extent that it becomes unfit for animal consumption.

31.3.3 Equipment used to handle, contain or store seafood products material for animal consumption must be clearly identified (e.g. by labelling, colour coding), except as allowed under section 16.3.3.2.

31.3.4 Bins with drainage holes must not be used for storing seafood products material for animal consumption. Unless the bins are located close to a drain, so as to minimise any contamination of seafood products for human consumption or product contact surfaces. Contamination can be caused by the splash from bins onto seafood products for human consumption or product contact surfaces.

31.4 MONITORING

The responsible person must regularly check compliance to documented procedures.

> The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include daily checks to ensure that procedures for identifying and managing products intended for animal consumption are carried out correctly.

31.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Refer to Part 2, section 38 of this COP for record keeping requirements.

32 Labelling

Amendment 0

July 2011

32.1 PURPOSE AND SCOPE

To ensure that labelling on seafood products meets the relevant labelling requirements under the Animal Products Act 1999 and the Food Standards Code.

32.2 SEAFOOD AND SEAFOOD PRODUCTS

32.2.1 Mandatory requirements

32.2.1.1 HC Spec 32

1. This clause applies to transportation outers, but does not apply to the labelling of bulk transportation units.

2. This clause applies to animal material or product, once received by the primary processor but does not apply to animal material and product that is transferred within New Zealand between sites of a single company, subsidiaries of a parent company, or between subsidiaries of a parent company and the parent company, prior to the completion of processing, provided the operator has documented systems to ensure that traceability is maintained.

3. Labelling must be provided on transportation outers and must state:
   a) the product name or description;
   b) storage directions, where necessary to maintain the product as suitable for processing or as fit for intended purpose;
   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); and
   d) the scientific name of the fish (as specified in Schedule 4 or as approved by the Director-General); or
      i. in the case of minced fish, surimi, reformed fish, or multi-ingredient fish products that have undergone further processing, the scientific name, either on the label of the transportation outer or on the accompanying documentation.
      ii. in the case of shucked paua that is intended for canning and is held at temperatures not exceeding 6°C, that the paua is for canning only in New Zealand.

4. Mandatory labelling must be clear, legible, indelible, and use terms that are commonly used in the English language or other language approved by the Director-General.

5. 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, animal material or animal product that is intended for human consumption, must clearly indicate that the product it contains is not intended for human consumption.

32.2.1.2 HC Spec 32 A

Transportation units used for the transportation of unpackaged bulk animal material or animal product that cannot practicably be labelled, must have the information specified in subclause 32(3) provided with the product or on the accompanying documentation.

32.2.1.3 HC Spec 32 B (1)

If the status of an animal material's suitability for processing, or animal product's fitness for intended purpose changes, and the animal material or product has been identified, all affected labelling or the accompanying documentation (where 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.

32.2.1.4 HC Spec 32B (2)

If animal material or product is downgraded and is no longer intended to be traded for human consumption, any labelling on the transportation outer, 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.

32.2.1.5 HC Spec 32B (3)

Any false or misleading labelling on reused or recycled packaging resulting from previous uses must be removed or defaced at the consigning premises.

32.2.1.6 Australia New Zealand Food Standards Code Part 1.2

This document contains information relating to mandatory labelling requirements for compliance with New Zealand Standards.

32.2.2 Procedures

32.2.2.1 The operator must develop labelling procedures to ensure that all information printed on a label or on packaging is correct and accurate, and that the correct label is applied to the appropriate product.

These objectives are particularly relevant to any foreign language label that may be applied at the request of an overseas market. While OMAR requirements (which are not specifically part of an RMP) deal with such labelling matters, operators should consider translating any such labels so that they are clear about statements made on these labels.

For exported seafood products, every container must be labelled with any information required by the country to which the seafood products are to be exported. This may include a requirement for the label to be in the language commonly used in the destination country.

For further information on labelling requirements for overseas countries see the food safety website:
Exporting

32.2.2.2 Labelling on containers of seafood products must not contain any false or misleading statements, words, pictures or marks.

Documentation required by the Ministry of Fisheries may provide a simple means of meeting labelling requirements, as long as operators add storage conditions to these or label the containers.

32.2.2.3 Labelling is not required for:

- shipping containers; or
- an interior wrapper that is intended to facilitate packing and is not intended to serve as the sole container of the contents of a package; or
- any transparent wrapping material that has no label and encloses another container.

32.3 BIVALVE MOLLUSCAN SHELLFISH AND BIVALVE MOLLUSCAN SHELLFISH PRODUCTS

32.3.1 Mandatory requirements

32.3.1.1 HC Spec 139 (1)

Containers of shellfish leaving the processing premises must be labelled with:
a) the growing area lease, licence, resource consent, or permit number; and
b) the date of harvest; and
c) the type and quantity (number or weight) of shellfish.

32.3.1.2 HC Spec 139 (2)

However, a lot number labelling system may be used to replace the requirements of subclause (1) (a) and (1) (b), if adequate traceback to the specific harvest dates and harvest areas provided in the risk management programme.

32.3.1.3 HC Spec 139(3)

If reshipping (the purchase and resale of shellfish without repacking) occurs –

a) the original labels on shucked shellfish and shellstock must be maintained on the product containers; and
b) the labelling information must not be altered or removed, nor the product mixed with other shellfish, resorted, or repackaged; and
c) the name of the operator responsible for reshipping must be added to the container.

32.4 MONITORING

The responsible person must regularly check ongoing compliance to documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include:

- daily labelling checks on specified products;
- checks on new labels at the design phase to ensure they are accurate, comply with regulations and are not misleading.

32.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- copies of labels that have been checked and comply with requirements
- label checklists
- daily/weekly checks

Refer to Part 2, section 38 of this COP for record keeping requirements.

33 Refrigeration and Storage of Seafood Products

Amendment 0

July 2011

33.1 PURPOSE AND SCOPE

To ensure that all seafood products is refrigerated and stored under appropriate conditions so that it remains fit for its intended purpose.

33.2 MANDATORY REQUIREMENTS

33.2.1 HC Spec 104 (1)

Any chilling or freezing must be conducted without unnecessary delay and in a manner that minimises any potential microbial proliferation, and contamination of the fish.

33.2.2 HC Spec 104 (2)

Fish (other than live fish) that is preserved primarily by refrigeration must be reduced to the maximum chilled or frozen temperatures specified in the table below prior to release from any primary processing premises.

Product type	Chilling / Freezing temperature
Shucked paua intended for canning in New Zealand	6°C
Chilled whole fish	-1°C to 1°C
Chilled fish product	-1°C to 4°C
Frozen fish or fish product (including shellfish)	-18 °C
Brine frozen fish	-15 °C

33.2.3 HC Spec 104 (3)

HC Spec 104 (2) does not apply if the further processing or transportation of the animal material or animal product is documented in a registered risk management programme or approved food safety programme, so that the relevant risk factors are managed.

33.2.4 HC Spec 104 (4)

If the documentation as described in subclause (3) forms part of another risk management programme or a food safety programme, the consigning operator must ensure that —

a) the operator of the receiving programme is identified in the consigning operator's risk management programme; and
b) there is no gap in the process documentation as the animal material or animal product is transferred between programmes; and
c) all relevant programmes are registered or approved prior to the commencement of the operation.

33.2.5 HC Spec 104 (5)

A brief temperature fluctuation up to a maximum temperature of -15ºC during transportation is permitted for any frozen fish. However, the temperature must be reduced to -18 ºC or colder without unnecessary delay.

33.2.6 HC Spec 104 (6)

Shucked paua must not be held at greater than 1ºC for more than 3 days.

33.2.7 HC Spec 136 (7)

The temperature of shucked shellfish must be reduced to 4ºC or less prior to leaving the premises and the temperature must be maintained during transport and storage.

33.2.8 HC Spec 136 (8)

The temperature of chilled live shellfish must be reduced to 10ºC or less prior to leaving the premises and the temperature must be maintained during transport and storage.

33.2.9 HC Spec 136 (9)

Shellfish destined for the domestic market may leave the premises when the temperature is greater than 10°C, if they are stored in the premises for less than 12 hours and are maintained under temperature control at all times while in the premises.

33.2.10HC Spec 136 (10)

Shellfish that are to be frozen must be arranged to ensure rapid freezing and must be frozen at a temperature of -18°C or colder, with shellfish frozen solid within 12 hours from the start of the freezing process. Frozen shellfish must be held at -18°C or colder during storage and transport.

33.3 PROCEDURES

33.3.1 The operator must provide refrigeration facilities that are capable of achieving the outcomes listed below:

- rapid chilling of whole fish received at the premises to a temperature between -1°C and +1°C and holding the chilled fish within this temperature range;
- rapid chilling of processed fish and fish products produced on the premises to a temperature between -1°C and +4°C and holding the fish and fish products within this temperature range;
- rapid freezing of fish and fish products produced on the premises to -18°C or colder; and
- maintaining frozen fish and fish products produced or stored on the premises at -18°C or colder.

Chillers may also be used for tempering product and for short term storage during processing. In such cases, there is no requirement to hold the product at 1°C.

33.3.2 Equipment for the control and monitoring of temperatures and other parameters (e.g. airflow) must be operating at all times while refrigeration facilities are in use.

33.3.3 Condensation drip on to seafood products or equipment must be minimised.

Products that may taint or contaminate other seafood products must be kept separately, or be prevented, by other effective means, from contaminating seafood products.

> Seafood products may be stored with other foods, provided the other foods are adequately enclosed in containers and handled in such a way that the seafood products is not contaminated.

33.3.4 Seafood products materials that are intended for use as bait or for animal consumption must be stored separately from seafood products intended for human consumption, unless measures are put in place to minimise contamination.

33.3.5 Packed products, raw materials, packaging and other materials should be stored off the floor (e.g. on clean pallets).

33.4 MONITORING

The responsible person must regularly check ongoing compliance to documented procedures.

> The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include:
> - daily checks of refrigerated products and storage areas to confirm that storage temperature requirements are met.
> - checks of all storage areas to confirm that products are stored to minimise contamination.

33.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These could include:

- temperature monitoring and corrective action records; and
- inventories.

Refer to Part 2, section 38 of this COP for record keeping requirements

34 Transport

Amendment 0

July 2011

34.1 PURPOSE AND SCOPE

To ensure all seafood products is transported in a manner that minimises contamination and ensures that it is fit for purpose.

34.2 SOURCES OF HAZARDS

Source	Examples of hazards
Transportation units & loading equipment	Pathogens e.g. Bacterial pathogens (e.g. *E. coli* spp., *Salmonella* spp., *Listeria* spp.) Chemical pollutants, oil, grease, dust Physical objects (e.g. metal, plastic)
Personnel	Bacterial pathogens (e.g. *E. coli* spp., *Salmonella* spp.)
Other materials transported in the same vehicle	Bacterial pathogens (e.g. *E. coli* spp., *Salmonella* spp., *Listeria* spp.)

34.3 MANDATORY REQUIREMENTS

34.3.1 HC Spec 143

This part (i.e. HC Specs 144 to 147) applies to transport operators who are transporting animal material during primary processing or animal product between –

a) premises or places operating under risk management programmes; or
b) premises or places operating under risk management programmes and premises operating under the Meat Act –

but does not apply to transport operators transporting live animals to the primary processor.

34.3.2 HC Spec 144

1. Transportation units and loading equipment must be designed, constructed, equipped and operated to maintain the status of the animal material as suitable for processing or the animal product as fit for intended purpose and to minimise hazards and other risk factors.

2. Transportation units must be constructed from materials that will maintain animal material as suitable for processing or animal product as fit for intended purpose.

3. If the transportation unit provides the means by which animal material or product is refrigerated, the unit must be designed, constructed and equipped to ensure that the specified temperatures are achieved and maintained throughout transportation.

4. Temperature measuring devices used to measure critical temperatures must be calibrated and located to measure the internal temperature of the transportation unit at the warmest point.

34.3.3 HC Spec145

1. The hygiene and maintenance of the transportation unit and loading equipment must be such that contamination and deterioration of animal material and product is minimised.

   Hygiene and behaviour of persons involved in transportation of animal material or product must be such that contamination and deterioration of animal material and product from this source is minimised.

2. The transport operator must take reasonable measures to ensure that exposed animal material or product is not handled by any person who is –
   a) 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, that is likely to be transmitted through animal material, animal product or associated things; or
   b) suffering from acute respiratory infection; or
   c) suffering from boils, sores, infected wounds, or any other condition that cannot be adequately prevented from becoming a source of contamination.

34.3.4 HC Spec 146

1. Animal material or product that is conveyed together with any other animal material or product or any other thing that may be a source of contamination must be adequately separated from the source of contamination unless adequately protected in a manner that prevents cross-contamination.

2. Evidence of the maintenance of the preservation temperature, (if required) during transportation, must be available for verification to ensure that suitability for processing of the animal material or fitness for intended purpose of the product is maintained.

3. Determination of animal material or product temperature and the taking of any samples must be carried out in such a manner that contamination of that animal material or product is minimised.

4. Refrigerated animal material or product must not be accepted from the primary processor for transportation until the preservation temperature has been met, as specified in either:
   a) the Act or the Food Act 1981; or
   b) the registered risk management programme or the programme operating under the Meat Act.

5. The transport operator must have a documented contingency plan to deal with any failure to maintain preservation temperature during transportation that may affect suitability for processing of the animal material or fitness for intended purpose of the animal product, including:
   a) immediate notification of the person who has responsibility for the animal material or product; and
   b) actions to prevent recurrence.

6. The transport operator must ensure that persons transporting animal material or product are aware of the relevant specifications and are adequately trained.

34.3.5 HC Spec 147

The transport operator must comply with the records requirements of clause 34(2).

34.3.6 HC Spec 136 (8)

The temperature of chilled live bivalve molluscan shellfish must be reduced to 10ºC or less prior to leaving the premises and the temperature must be maintained during transport and storage.

34.3.7 HC Spec 136 (9)

Shellfish destined for the domestic market may leave the premises when the temperature is greater than 10°C, if they are stored in the premises for less than 12 hours and are maintained under temperature control at all times while in the premises.

34.3.8 HC Spec 104 (5)

A brief temperature fluctuation up to a maximum temperature of -15°C during transportation is permitted for any frozen fish. However, the temperature must be reduced to -18°C or colder without unnecessary delay.

This specification allows for minor temperature changes during loading and unloading, short distance trips (e.g. processing premises to a neighbouring cold store) or unforeseen situations (e.g. mechanical breakdown), when a brief temperature increase in the seafood products may occur.

34.4 PROCEDURES

34.4.1 Transport included in operator's RMP

34.4.1.1 RMP operators who use their own vehicles for the transport of seafood products within the scope of their RMP are responsible for complying with all the requirements of HC specifications 143 to 147 quoted in section 34.3 above.

34.4.1.2 The operator must ensure that, before loading, the vehicle or shipping container used to transport seafood products is clean and free from odours, chemicals or other residues. Procedures for cleaning vehicles and containers used by the operator to transport seafood products must be documented in the RMP. Refer Part 2, section 5 of this COP.

34.4.2 Transport NOT included in operator's RMP

34.4.2.1 Transport operators who provide vehicles for the transport of seafood products under contract to RMP operators are responsible for complying with all the requirements of HC specifications 143 to 147 quoted in section 34.3 above.

34.4.2.2 RMP operators must ensure that contracted vehicles used for the transport of seafood products are in a suitable condition to minimise contamination.

34.4.2.3 Where vehicle and container cleaning is the responsibility of the contracted transporter, the RMP operator must verify the state of cleanliness of each vehicle and of all containers prior to their use.

> Operators should provide advice to staff on how to manage situations where they are confronted with a dirty vehicle or container. This should include advice on how to ensure that the vehicle or container is cleaned or sanitised as necessary, at an appropriate site.

34.4.3 Transport of fish to primary processor

34.4.3.1 Live fish (other than molluscan bivalve shellfish), and paua that are intended for canning in New Zealand, must be transported in cool conditions and protected from sun and wind, so that they are alive and undamaged on arrival at the processing premises.

34.4.3.2 All other fish must be:

a) subjected to chilling or freezing from the time of catching to the time of arrival at the fish premises; and
b) transported in clean containers and in a manner that minimises contamination.

34.4.4 Transport of bivalve molluscan shellfish to primary processor

For requirements for transport of bivalve molluscan shellfish from harvest to receipt at the primary processor, refer to Part 12 of the Animal Products (Specifications for Bivalve Molluscan Shellfish) Notice 2006 (330KB PDF).

> Operators who transport seafood products destined for export must also meet relevant export criteria. For further information see the food safety website:
> Exporting

34.4.5 Unloading of brine frozen fish

Brine frozen fish may have a temperature fluctuation up to -9.5°C during discharge from the fishing vessel and transport to the processing premises.

Brine frozen fish that is to be exported to the EU is subject to the following conditions:

- The fish is only intended for canning.

34.5 MONITORING

The responsible person must regularly check ongoing compliance to documented procedures.

The frequency and type of monitoring will depend on the nature of the operation and the degree of risk if hazards are uncontrolled. Monitoring options include:

- checks of transport vehicles to confirm they are in a condition that minimises contamination of the seafood products.
- temperature checks on refrigerated vehicles.

34.6 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- load-in and load-out checks
- container / vehicle checks
- daily/weekly checks
- cleaning checks
- CATR checks
- calibration records

Refer to Part 2, section 38 of this COP for record keeping requirements.

35 Handling, Disposition and Recall of Non-complying Products

Amendment 0

July 2011

35.1 PURPOSE AND SCOPE

To ensure a system is in place for the handling, disposition and recall from distribution or sale, of seafood products that is not fit for intended purpose.

35.2 MANDATORY REQUIREMENTS

35.2.1 RMP Spec 14

1. For the purposes of section 17(2)(c) of the Act where, due to the nature of the animal material or animal product it is possible to recall it from trade, distribution or consumers, a risk management programme must contain a recall procedure, including —
   a) the criteria for deciding when a recall will be initiated; and
   b) how retrieval and disposition of the relevant animal material or animal product will be managed.

2. A risk management programme must contain a system for notifying the following people as soon as possible when animal material or animal product is recalled from trade, distribution or from consumers because it is not or may not be fit for its intended purpose-
   a) the Director-General; and
   b) the recognised risk management programme verifier or recognised risk management programme verifying agency.

35.3 PROCEDURES

35.3.1 Non-complying (e.g. damaged, spoiled, deteriorated or contaminated) products must be handled and stored in a manner that prevents contamination and deterioration of other products, and contamination of the storage environment. They must be:

- clearly identified and segregated from other products;
- assessed by a competent person for appropriate method of disposition; and
- included in the inventory.

35.3.2 Operators must designate a person to take overall responsibility for any recall of seafood products and allocate recall tasks to appropriately skilled people.

The person with overall responsibility may be the day-to-day Manager of the RMP or a person at a senior level of responsibility within the operation.

35.3.3 For more detailed information on establishing and implementing recall procedures, refer to the following:

- Recalls section of the RMP Manual (638 KB PDF);
- Recalls page on the MAF Food Safety web site;
- Guidelines for Seafood Recall Programmes.

35.3.4 After a recall the recall plan must be reviewed and, if necessary, updated.

35.3.5 When seafood products is found to be non-complying but the decision is made not to carry out a recall, the operator must notify the recognised Risk Management Programme Verifier as soon as possible.

35.4 MONITORING

The responsible person must regularly check ongoing compliance with documented procedures.

Following a recall, the operator should review the procedures to determine their effectiveness and to make changes if necessary.

35.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are: • inventory records • incident reports • recall records

Refer to Part 2, section 38 of this COP for record keeping requirements.

36 Traceability and Inventory Control

Amendment 0

July 2011

36.1 PURPOSE AND SCOPE

To ensure that procedures are in place to manage traceability and inventory control of seafood products.

36.2 MANDATORY REQUIREMENTS

36.2.1 AP Reg 18 (1)

All operators of risk management programmes, all exporters, and all other categories of person required by specifications to do so, must have a tracking system that –

a) allows for the identification of animal material and animal product; and
b) enables the movement of the animal material or animal product to be traced –
   i. where required by specifications, from the origin, through the supplier and the operator's business premises to the next recipient of the animal material or product; or
   ii. where specifications do not require tracing from origin, from the supplier and the operator's business premises to the next recipient of the animal material or product.

36.2.2 HC Spec 34 (3)

An inventory control programme must be documented for animal material and product and records maintained.

36.3 PROCEDURES

36.3.1 The operator must document procedures for the identification of raw materials and products, including imported seafood products, that will allow any finished seafood products to be traced:

- back to the supplier of the seafood products and other raw materials; and
- to the next person or company that the seafood products is transferred to for further processing, packing, storage; distribution or sale.

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

36.3.3 Inventories must be maintained for all raw materials, including ingredients and additives, and finished products (including imported fish and fish products) and for any non-complying materials and products.

See the following table for an example of an inventory system.

NB: GUIDANCE MATERIAL ONLY - An example of an Inventory system

	Process step	Inventory records	Description
Reception records	(a) Product received from catching vessel	Reception check sheets Unloading documentation	Record date, vessel name, fish species, and quantity
	(b) Product received from other premises in NZ – fresh or frozen	Purchasing records	Details of product received
Processing records	Reception, weighing & grading	Reception check sheets Unloading dockets Weigh sheets	Date received, weight, species, temperature, CATR recordings
	Processing	Production records	Production lot ID, pack date, amount of product
Cold store inventory	Frozen storage	Store records	Product ID, amount of product
Dispatch records	Dispatch	Sales records	Date, customer, product ID, pack date, amount of product

For further detail related to exported seafood products, please refer to the Official Assurances Programme especially the export requirements for inventory records and to OMARS covering the countries targeted for export:
Official Assurances Programme (477KB PDF)
OMARS

36.4 MONITORING

The responsible person must regularly check ongoing compliance with documented procedures.

The operator should check, at least annually, that the documented procedures are appropriate.

36.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are inventory records.

Refer to Part 2, section 38 of this COP for record keeping requirements.

37 Operator Verification and Other Operational Requirements

Amendment 0

July 2011

37.1 PURPOSE AND SCOPE

To verify compliance to documented procedures and to confirm the appropriateness and effectiveness of the documented RMP by ensuring that operator verification, including internal audits, are undertaken at the required frequencies.

To ensure that other operational requirements are met by the operator.

37.2 MANDATORY REQUIREMENTS

37.2.1 RMP spec 11 (2) (c) (iv)

The operator must document sufficient procedures to cover any corrective action procedures to be applied when loss of control is due to unforeseen circumstances for which no specific corrective action is documented. These procedures must include nomination of a suitably skilled person to manage the corrective action, recording of the issue and corrective actions taken, and reporting of such matters to the recognised risk management programme verifier without delay.

37.2.2 RMP spec 16

1. A risk management programme must specify an operator verification system including —
   a) the activities to be performed in relation to the risk management programme, and their frequency; and
   b) any actions to be taken when all or part of the risk management programme is not effective; and
   c) any recording and reporting requirements.

2. A risk management programme must contain a mechanism for ensuring that, wherever possible, persons carrying out operator verification are independent of the activities being verified.

37.2.3 RMP spec 13 (1)

A risk management programme must contain a procedure for notification of the Director-General in writing, without unnecessary delay, of any change to the name or position or designation of the person(s) responsible for the day-to-day management of the programme.

37.2.4 RMP Spec 13 (2)

A risk management programme must contain a procedure for notification of the Director-General of any emerging, new or exotic biological hazards or new chemical hazards that

come to the operator's notice in relation to the programme as soon as practical after their discovery.

37.2.5 RMP Spec 13 (3)

A risk management programme must contain a procedure for notifying the recognised risk management programme verifying agency in writing, without unnecessary delay, of the following issues relating to the operation of the programme —

a) any significant concern about the fitness for intended purpose of animal material or animal product:
b) where the cumulative effect of minor amendments necessitates the registration of a significant amendment to the programme as provided in section 25 of the Act:
c) where the risk management programme is no longer considered to be effective:
d) where the premises identified as being used by the programme are not or no longer suitable for use:
e) where anything within the physical boundaries of the programme is used for additional purposes or by other operators and the programme has not adequately considered relevant hazards or other risk factors.

37.2.6 HC Spec 119A

All laboratories performing analyses to confirm compliance with clauses 120-139 must have International Accreditation New Zealand (IANZ) accreditation for the methods prescribed, or have written approval from the Director-General.

37.2.7 HC Spec 142

All laboratories performing analyses for *Listeria monocytogenes* must have International Accreditation New Zealand (IANZ) accreditation for the analysis of *Listeria monocytogenes* in food in accordance with one of the test methods identified in a laboratory scheme established by the Director-General.

37.3 PROCEDURES

37.3.1 Scope and frequency of operator verification activities

37.3.1.1 Operator verification activities must be undertaken by the person responsible at a frequency sufficient to ensure compliance with the documented RMP, including GOP and process control procedures, and to enable prompt identification and correction of any problems.

37.3.1.2 A review of the RMP must be undertaken at least annually.

The review of the entire RMP may be undertaken as a single operation or it may be staggered throughout the year.

37.3.1.3 The RMP must also be reviewed when:

- significant changes are made to the product, process or premises; or
- the RMP or parts of it are not working effectively.

Indications that the RMP or parts of it are not working effectively include:
- a series or trend of non-compliance or out of specification product test results;
- customer complaints;
- product recall;
- failed external verification audit.

37.3.2 Audit procedures

37.3.2.1 The operator must keep records of observations made during the operator verification activities, as well as of any corrective actions taken.

The operator should determine the type of operator verification activities and the frequency they are carried out. The following should be taken into consideration when making this determination:
- nature and size of operation
- degree of risk of associated with the product and processes – particularly if things go wrong.

a) Review of records for:
   - completeness and accuracy of required information;
   - documentation of corrective actions;
   - any trends, new hazards, recurring problems
b) Reality checks including observation of:
   - workers' performance and compliance with documented procedures and operating procedures;
   - compliance with documented parameters such as processing times and temperatures (where relevant); and
   - status of the premises internal and external environment, facilities and equipment.
   - all deficiencies found at previous audits should be followed up.
c) When operator verification includes audit of monitoring and corrective action records, the operator should sign the records or otherwise indicate that they have been subject to internal audit.
d) Review of customer complaints
e) Annual Reviews
   - operators should review their procedures and systems to ensure that these systems are in compliance with regulatory requirements; and check that the systems are being followed.

37.3.2.2 When ongoing or recurring non-compliances occur, the operator must:
- investigate to determine possible causes of non-compliance;
- take appropriate corrective actions to regain control and prevent recurrence of the problem;
- increase surveillance of the system; and
- review the RMP or the relevant GOP programme and make necessary changes.

37.3.3 Amendments to the RMP

37.3.3.1 Significant amendments to the RMP must be evaluated and registered.

37.3.3.2 When the operator determines that an amendment is not significant, changes may be made at any time to update the RMP document(s).

Guidelines for determining significant amendments and for deciding whether an amendment is significant or minor are documented in Appendix G of the MAF RMP Manual. The Manual also provides examples of significant and minor amendments. If there is still some doubt as to whether proposed changes are significant or not, you should contact an RMP evaluator:
RMP Manual (638 KB PDF)

The document control procedure may also allow for small changes to be made by hand. In such cases, the nominated person should sign and date the changes to indicate they are legitimate. This may occur at the time of annual review or more often as required.

37.3.4 Notification procedures

37.3.4.1 The day-to-day manager of the RMP must contact MAF without delay when it is necessary to notify the Director-General for reasons specified in RMP Specs 13 (1) and 13 (2).

Notification Form AP50: Update to Risk Management Programme Details (28 KB PDF)

37.3.4.2 The day-to-day manager of the RMP must notify the recognised risk management programme verifying agency in writing (e.g. by email or letter), as required by, and for reasons specified in, RMP Spec 13 (3) and RMP spec 11 (2) (c) (iv).

37.4 MONITORING

The responsible person must regularly check ongoing compliance with documented procedures.

37.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken.

Examples of other records that could be used to demonstrate compliance are:

- operator verification records
- internal audit records
- RMP review records
- copies of communication sent to MAF or the recognised RMP verifying agency

Refer to Part 2, section 38 of this COP for record keeping requirements.

38 Document Control and Record Keeping

Amendment 0

July 2011

38.1 PURPOSE AND SCOPE

To ensure that all RMP documents, including records, are managed under a document control system that meets the requirements of the Animal Products Act 1999.

38.2 MANDATORY REQUIREMENTS

38.2.1 RMP Spec 19 (1)

Every document or part of a document that makes up a risk management programme must be:

a) legible; and
b) dated or marked to identify its version; and
c) authorised prior to use, either directly or within the document control system, by -
   i. the operator; or
   ii. the day-to-day manager of the programme; or
   iii. a person nominated to do so in the programme's document control system; and available in a readily accessible form when required to any person with responsibilities under the programme.

38.2.2 RMP Spec 19 (2)

A risk management programme must contain procedures for effective document control of the documents that form the risk management programme including how –

a) significant and minor amendments will be made to the risk management programme so that the programme is current and reflects the actual operation; and
b) the amendments, or the nature of the amendments to the programme will be identified or described; and
c) documents are authorised prior to issue and use; and
d) all amended parts of the risk management programme will be removed from use and replaced with the current versions at all locations to which it has been distributed without unnecessary delay after authorisation and, where necessary, after registration in accordance with section 25 of the Act.

38.2.3 RMP Spec 19 (3)

An operator must retain (by archive or otherwise) for four years, one copy of all obsolete documents from a registered risk management programme in a manner that protects the documents from damage, deterioration or loss, and prevents confusion with current documents.

38.2.4 RMP Spec 19 (4)

An operator must ensure that the registered risk management programme and all reference material relating to the risk management programme, and any archived documents are readily accessible, or can be retrieved and made available within two working days of any request to:

a) recognised persons; and
b) animal product officers; and
c) the Director-General; and
d) persons authorised by the Director-General.

38.2.5 RMP Spec 20 (1)

An operator must include record keeping procedures in the risk management programme to ensure that all records necessary to demonstrate compliance with the documented programme are —

a) legible; and
b) stored for four years, or for the shelf life of the product to which the records relate (whichever is longer), in a manner which protects the records from damage, deterioration or loss; and
c) can be retrieved and made available to persons referred to in subclause (3) within two working days of any request.

38.2.6 RMP Spec 20 (2)

Records relating to the risk management programme's monitoring, corrective action and operator verification activities must include —

a) the date and where appropriate the time of the activity; and
b) a description of the results of the activity; and
c) a means to identify the person or persons who performed the activity.

38.2.7 RMP Spec 20 (3)

An operator must make all records relevant to the risk management programme available to the following persons on request —

a) recognised persons; and
b) animal product officers; and
c) the Director-General; and
d) persons authorised by the Director-General.

38.3 PROCEDURES

38.3.1 Record keeping

38.3.1.1 All GOP and processing records must be kept, including inventories of raw materials and finished products.

38.3.1.2 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.

38.3.1.3 Records must:

- accurately reflect the observations made;
- facilitate verification; and
- be documented on permanent materials.

> Consideration should be given to the durability of paper on which records are kept (pen does not write well on wet paper), and its suitability for storage (thermal papers can fade over time). Pencil is not suitable for recording information because it is easy to erase or alter.

38.3.1.4 Any alterations made to records must be made alongside the original entry and initialled by the person amending the record.

> The use of white out products (such as Twink™) is not acceptable to auditors as it is not possible to see what the original entry was.

38.3.1.5 The manner in which the date and time are documented in the record must be appropriate to the activity being monitored. For some observations (e.g. process temperatures) the exact date and time must be recorded. However, for other observations (e.g. checking compliance with protective clothing requirements) a more general record over a specified time period may be acceptable.

38.3.2 Document control

38.3.2.1 The operator must keep a register or list of all current RMP documents showing the current version and/or date of issue. This register must include the site plan and all record forms (e.g. blank check sheets used for monitoring and other operator verification activities) if these are separate from the programmes. For multi-business RMPs the document list must also specify, where necessary, which documents relate to which business.

> It is common practice to include both the version number and date of issue of each RMP document. If more than one controlled copy of the RMP is issued, each set of documents should have additional identification showing the copy number.
>
> The operator should maintain a register of controlled copies showing who is responsible for each copy.
>
> Authorisation of version control may be shown in several ways, including:
> - signature & date on the cover page of each RMP document;
> - initials & date in the header or footer of every page;
> - signature & date on the document register.

38.3.2.2 Details of all amendments must be recorded.

An amendment register is a good way of keeping a record of all amendments and may be presented in a table with the following headings:

- document name or reference, details of amendment, reason for amendment, date of change.

38.3.2.3 Amendments to RMP documents must be clearly identified.

Options for identifying amendments include use of italics, highlighting the amended text, or other electronic means, or by identifying the amended section(s) in the amendment register.

38.3.2.4 Electronic versions of RMP documents must be protected with an effective backup system.

Operators may wish to keep electronic copies off site in case of major loss.

38.4 MONITORING

The responsible person must regularly check ongoing compliance with documented procedures.

The operator should check, at least annually, that the documented procedures are appropriate.

38.5 RECORDS

The operator must keep relevant records demonstrating compliance with documented procedures. These must include monitoring carried out, problems identified and corrective action taken, and the following records:

- List of documents comprising the RMP
- Record of amendments

39 Glossary of Terms

Amendment 0

July 2011

Act means the Animal Products Act 1999.

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

Batch means a quantity of fish or fish product of the same type processed under essentially the same conditions during a particular time interval, generally not exceeding 24 hours, i.e. considered to be all products processed between major clean-downs.

BMS means all species of bivalve molluscan shellfish, including oysters, clams, mussels, and scallops.

BMS depot means a depot, refrigerated container unit, or other building or structure used for holding BMS in a temperature-controlled environment prior to delivery to a processor, wholesaler, or retailer.

BMS sorting shed means a building or structure where BMS are handled directly after harvesting to enable separation of BMS for farm management, wet storage, relaying, or culling, prior to transport to a processor, wholesaler, or retailer.

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

Clean seawater means seawater that —
a) is free of excessive turbidity, colour, offensive odours, and any contaminants; and
b) for land based premises complies with the requirements of Schedule 2 of the Animal Products (Specifications for Products Intended for Human Consumption) Notice 2004.

Depuration means to reduce the level of contaminants in live bivalve molluscan shellfish by the use of a managed aquatic environment as the treatment process.

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 the preparing, marking, processing, packing, storing, carrying, or handling of any animal material, animal 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 process gases, lighting, ventilation, and water and waste management.

Event means the detection of *L. monocytogenes* in the zone 4 environment or in ready-to-eat seafood product.

Facilities includes amenities, storage areas, and processing areas.

Fish includes finfish, cephalopods, crustaceans, echinoderms and non-bivalve molluscan shellfish.

Growing area means any coastal marine area, and any land-based aquaculture facility used for the cultivation of BMS for commercial purposes, that —

a) contains natural deposits of BMS harvested for commercial purposes; or
b) is used for cultivation of BMS for commercial purposes.

Harvest means the act of removing BMS, for wet storage, relay, retail sale, wholesale, or processing, from a growing area and its placement on or in a harvest vessel, vehicle or container.

Harvest area means a growing area that contains commercial quantities of BMS.

Harvest declaration means a written declaration of the harvest details of BMS that complies with the requirements of clause 61 Animal Products (Specifications for Bivalve Molluscan Shellfish) Notice 2006.

Hazard means a biological, chemical or physical agent, or condition of, food with the potential to cause an adverse health effect.

Hygiene environment means the zones where RTE seafood product is processed.

- Critical hygiene environment (zones 3 and 4) means those zones (rooms) of a seafood operation after the final *L. monocytogenes* control step, or where there is no *L. monocytogenes* control step, where RTE seafood can be exposed to potential contamination from equipment, the environment, handling or ingredients incorporated into the product.
- Standard hygiene environment (zone 2) means all internal zones (rooms) of a seafood operation that are not part of the critical hygiene environment, e.g. where initial preparation occurs, process zones for protected product such as dry stores, raw product chillers/storage zones, amenities, etc.
- Non-processing environment (zone 1) means those zones outside of a seafood premises.

Ingredient means any substance, including a food additive, used in the processing of food.

Independent supply (water) means water supplied to a seafood facility by any person or agency (e.g. city, town, local council) that is independent of the operator.

Intermittent processing means processing that occurs from time to time or is periodic and not more than four days processing in any working week. For example, two days during the 1st week, one day the 2nd week and three days the following week, etc.

ISO 17025 standard means ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories or the most recent version.

***L. monocytogenes* control step** means any operation(s) in the process which is validated to reduce L. monocytogenes to acceptable levels, so that the final product meets the following standard:

- Absence of *L. monocytogenes*/25 g where n=5, c=0, m=0.

- For example, a process that achieves a 6D reduction of *L. monocytogenes*: http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/Seafood/FishandFisheriesProductsHazardsandControlsGuide/ucm119777.htm
- The *L. monocytogenes* control step is usually a Critical Control Point (CCP).

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 animal material or animal product.

Long shelf-life RTE seafood product means a RTE seafood product that has a shelf-life of greater than 60 days.

Lot means a quantity of seafood material or seafood product that has been produced and handled under uniform conditions and within a limited period of time.

Lot identification means an identifier that is sufficient to enable the source of a lot to be traced.

MAF means the Ministry of Agriculture and Forestry.

Monitoring means the act of conducting a planned sequence of observations or measurements of control parameters to assess whether an operation or activity is carried out effectively and/or assess whether a CCP is under control.

On hold means that the product is retained within control of the operator, has not yet entered the retail distribution chain or been dispatched from New Zealand. It does not necessarily mean it is being held at the site of processing.

Operator means a Risk Management Programme (RMP) operator.

Operator supply (water) means water that is supplied by an operator solely for the use of that operator at a seafood processing facility.

Operator verification means the application of methods, procedures, tests and other checks by the operator to confirm the ongoing —

a) compliance of the risk management programme to the legislative requirements; and
b) compliance of the operation to the risk management programme as written; and
c) applicability of the risk management programme to the operation; and forms part of confirmation as described in section 17(3) (f) of the Act.

Packaging –

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

Pathogen means an organism such as bacteria (e.g. Salmonella), viruses (e.g. norovirus, hepatitis A virus), or parasites (e.g. Giardia, Cryptosporidium) that may causes disease in human beings.

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 referred to 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 current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice; 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.

Processing area is an area where unprotected (exposed) product is processed or packed or temporarily held.

Product support areas are areas where ingredients, packaging, chemicals, protective clothing, or processing equipment may be stored, cleaned, transferred through and/or prepared.

Protective clothing means special garments intended to preclude the contamination of animal material or animal product that are used as outer wear by persons; and includes head coverings and footwear.

Ready-to-eat seafood products means seafood products intended by the producer or the manufacturer for direct human consumption without any cooking or further processing effective to eliminate or reduce to an acceptable level micro-organisms of concern.

Regional shellfish specialist means a person employed by the Ministry of Agriculture and Forestry with the designation "regional shellfish specialist" to provide specialist advice and direction on BMS matters relevant to the regulated control scheme.

Relay means to transfer BMS from a growing area to another growing area for the purpose of reducing pathogens or other contaminants by using the ambient coastal marine area environment or a land-based aquaculture facility as the treatment process.

Repacking means, in relation to bivalve molluscan shellfish, the process of removing shucked bivalve molluscan shellfish from the package and placing them in another package.

Reticulation management plan means a documented programme that contains procedures for the management of the water reticulation system, (including pipe work and fittings e.g. backflow prevention devices etc.), within the premises or place to ensure that the water quality is not adversely affected prior to the point of use.

Sanitary design –

a) in relation to any premises or place, facility, internal structure, equipment, or conveyance, means designed, constructed, and located so that it —
b) meets the requirements appropriate to the type of animal material or animal product and process, and which includes consideration of the movement of people, access, and process flow; and

c) can be readily maintained, cleaned, sanitised, and sterilised where required, to ensure that risk factors from contaminants and pests are minimised; and
d) in relation to any equipment or accessway in any processing area, means that the equipment or accessway is designed, constructed and located so that it —
   i. is easily accessible for maintenance, cleaning, operation, checking, and inspection; and
   ii. minimises the contact of contaminants with any animal material (other than live mammals or live birds), or animal product or other equipment; and
   iii. precludes the harbouring or accumulation of any contaminants or pests.

Risk management programme operator means an operator of a premises or place who operates an animal product business that is subject to a risk management programme.

Sanitise means the application of an approved maintenance compound or physical agent with the intention of reducing microbial contamination to a level that will avoid the creation of a hazard.

Seafood product includes whole and processed fish and fish product and shellfish and shellfish product.

Shellfish means all species of bivalve molluscan shellfish, including oysters, clams, mussels and scallops.

Shellstock means live bivalve molluscan shellfish in the shell.

Short shelf-life RTE seafood product means a RTE seafood product that has a shelf-life between eight and 60 days.

Specifications mean the current version of the Animal Products (Specifications for Products Intended for Human Consumption) Notice.

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

Task Group means a group appointed by the Ministry of Agriculture and Forestry (MAF) and endorsed by NZSSC to review the *L. monocytogenes* control procedures in a seafood operation and to specify remedial action in relation to *L. monocytogenes* control for that operation during a *L. monocytogenes* event.

Transport includes transport by road, rail, sea or air.

Transport operator means any person or business that engages in the transport of animal material or product between places or premises within New Zealand and includes courier operations and subcontractors who are used intermittently.

Transportation unit includes vehicles, aircraft, railway wagons, ships, shipping containers, bulk tanks, trailers and any other form of transport used in the transport of animal material or product.

Very short shelf-life RTE seafood product means RTE seafood product with a shelf-life of seven days or less.

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.

Water management plan means a documented programme that specifies the water quality standard and criteria, and procedures for the management of the water quality within the premises or place to ensure that the appropriate quality of water is delivered at the point of use.

Wet storage means the temporary holding of shellstock in onshore units or tanks for the purposes of desanding, conditioning, or storage, prior to retail sale, wholesale or processing.

Whole fish means fish that have not been subjected to gutting, scaling, shelling, deheading, tailing, or any other form of processing (other than chilling, washing or packing).

Working day means a normal processing day by the operator producing seafood products covered by the scope of this chapter.

Zone means the specific area of a seafood operation that is determined based on the potential risk of contaminating the food product to human health hazards and the opportunity to eliminate or inactivate hazard.

- **Zone 1** means the non-processing environment of a seafood operation.
- **Zone 2** means the standard hygiene environment of a seafood operation.
- **Zone 3** means the non-product contact surfaces in the critical hygiene environment of a seafood operation.
- **Zone 4** means product contact surfaces (only) within the critical hygiene environment of a seafood operation.

Code of Practice:
Processing of Seafood Product

Part 3: HACCP Application, and the Identification of Other Risk Factors and their Controls

July 2011

Ministry of Agriculture and Forestry
Te Manatū Ahuwhenua, Ngāherehere

BIOSECURITY NEW ZEALAND

NEW ZEALAND FOOD SAFETY AUTHORITY

Disclaimer

Every effort has been made to ensure the information in this report is accurate.

MAF does not accept any responsibility or liability whatsoever for any error of fact, omission, interpretation or opinion that may be present, however it may have occurred.

Requests for further copies should be directed to:

Manager (Food Standards)
New Zealand Standards Group
MAF
PO Box 2526, Wellington
Telephone: 04 463 2500
Facsimile: 04 463 2643

This publication is also available on the MAF food safety website at:
www.foodsafety.govt.nz/elibrary/

Prelims

Amendment 0

July 2011

Contents

Page

Review of Code of Practice

This code of practice will be reviewed, as necessary, by the Ministry of Agriculture and Forestry. 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:

Manager (Food Standards)
New Zealand Standards Group
MAF
PO Box 2526
Wellington
Telephone: 04 463 2500
Facsimile: 04 463 2643

Introduction

Amendment 0

July 2011

1.1 PURPOSE OF THIS DOCUMENT

Part 3 of the Code of Practice (COP) has been developed by the New Zealand Seafood Standards Council and the Ministry of Agriculture and Forestry (MAF) to provide guidance on the application of HACCP principles to seafood product processing operations.

Hazard Analysis and Critical Control Point (HACCP) is a systematic and science-based control system for assuring food safety. It is achieved by identifying and assessing hazards and developing controls for them. HACCP focuses on preventative measures and avoids reliance on the traditional approach of endpoint product testing as a means of controlling food safety.

Operators of New Zealand food businesses are required to apply the HACCP principles to their process when developing their Risk Management Programmes (RMP) or Food Safety Programmes (FSP). HACCP is internationally recognised as the foremost means of assuring food safety. New Zealand's major trading partners, including the United States and the European Union, require that a HACCP-based food control system be implemented by businesses exporting seafood product to their markets.

It is, therefore, important that seafood product processing operators understand the HACCP principles and how they can be applied to their operations. This document will also assist operators in the development and implementation of their RMP or FSP.

Part 3 also covers the identification and control of risk factors related to the wholesomeness and labelling of products.

1.2 DEFINITIONS

The following definitions used in this document have been derived from the Codex HACCP guidelines (166KB PDF).

Control (verb): To take all necessary actions to ensure and maintain compliance with criteria established in the HACCP plan.

Control (noun): The state wherein correct procedures are being followed and criteria are being met.

Control measure: Any action and activity that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

Corrective action: Any action to be taken when the results of monitoring at the CCP 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.

Deviation: Failure to meet a critical limit.

Flow diagram: A systematic representation of the sequence of steps or operations used in the production or manufacture of a particular food item.

HACCP: A system which identifies, evaluates, and controls hazards which are significant for food safety.

HACCP plan: A document prepared in accordance with the principles of HACCP to ensure control of hazards which are significant for food safety in the segment of the food chain under consideration.

Hazard: A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

Hazard analysis: The process of collecting and evaluating information on hazards and conditions leading to their presence to decide which are significant for food safety and therefore should be addressed in the HACCP plan.

Monitor: The act of conducting a planned sequence of observations or measurements of control parameters to assess whether a CCP is under control.

Step: A point, procedure, operation or stage in the food chain including raw materials, from primary production to final consumption.

Validation: Obtaining evidence that the elements of the HACCP plan are effective.

Verification: The application of methods, procedures, tests and other evaluations, in addition to monitoring to determine compliance with the HACCP plan.

2 Hazards and their Sources

Amendment 0

July 2011

2.1 TYPES OF HAZARDS

A hazard is a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

- Biological hazards include micro-organisms (e.g. Salmonella spp., *Listeria monocytogenes*), parasites (e.g. Anisakis spp.), marine biotoxins, and histamine. [Note that in some countries, such as the United States, marine biotoxins and histamine are considered as chemical hazards].
- Micro-organisms that are non-pathogenic are not considered as hazards. For example, spoilage organisms that cause loss of quality in seafood products will cause the development of bad odours and deterioration of texture, but will not cause human illness.
- Chemical hazards include heavy metals, pesticides, veterinary medicines, and cleaning compounds. Some food additives may also be hazardous if present in excessive or toxic amounts (e.g. nitrite).
- Physical hazards are foreign objects that may cause illness or injury. Some examples are: glass, metal, and shell fragments.

2.2 SOURCES OF HAZARDS

Hazards may occur in the product as a result of:
- the addition or use of an input (e.g. raw material, additives, packaging);
- the process itself ; and
- direct or indirect contamination from personnel and environmental sources (e.g. water, pests, wastes, equipment, internal and external environs).

The operator is required to apply the HACCP principles only to the actual process, including all inputs to the process. The identification of hazards and their controls for personnel and the various environmental sources are covered under the supporting systems for Good Operating Practice in Part 2 of the COP.

3 Good Operating Practice

Amendment 0

July 2011

Good Operating Practice (GOP) is the foundation for HACCP, and RMPs or FSPs. It covers the practices and procedures designed to ensure the consistent production of products are safe and suitable for their intended purpose, and that meet relevant regulatory requirements. It includes several interacting components - good hygienic practices, effective processing operations and effective quality assurance systems.

The operator's GOP procedures should be documented in supporting systems (also called prerequisite programmes) before the application of HACCP. The HACCP approach used in this document is based on the expectation that these supporting systems are being implemented effectively. The GOP supporting systems for seafood product operations are covered in Part 2 of the COP, and are summarised in the following table:

Supporting System	Section of Part 2 of the COP
Design, construction and maintenance of buildings, facilities and equipment	2
Calibration of measuring devices	3
Water	4
Cleaning and sanitation	5
Personnel health and hygiene	6
Control of chemicals	7
Pest control	8
Training and competency of personnel	9
Reception of fish and shellfish	10
Ingredients and additives	11
Specification, handling and storage of packaging and containers	12
Construction and operational requirements for the swimming of live fish	13
Fish processing	14
Bivalve molluscan shellfish processing	15
Control of contamination of seafood product	16
Products for animal consumption	31
Labelling	32
Refrigeration and storage of seafood product	33
Transport	34
Handling, disposition and recall of non-complying products	35
Traceability and inventory control	36
Operator verification and other operational requirements	37
Document control and record keeping	38

4 Application of HACCP Principles

Amendment 0

July 2011

4.1 HACCP PRINCIPLES

The essential steps for the application of HACCP consist of:

- the establishment of the scope, the product description and intended purpose, and the process description; and
- the application of the seven HACCP principles.

The HACCP principles, as defined by Codex are:

1. Conduct a hazard analysis;
2. Determine the Critical Control Points (CCP);
3. Establish critical limits;
4. Establish a system to monitor control of the CCP;
5. Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control;
6. Establish procedures for verification to confirm that the HACCP system is working effectively;
7. Establish documentation concerning all procedures and records appropriate to these principles and their application.

The operator is required to apply these HACCP principles to the process, including all inputs. The application must be documented, and supported using information such as historical company records, technical publications or information provided by the regulator. The person or people involved in this activity must have the appropriate knowledge and skills regarding HACCP, the product and the process.

The operator must reassess their HACCP application whenever changes in the product, process and/or premises are made.

Each of the HACCP principles is discussed in the succeeding sections. Examples of the step-by-step application of the HACCP principles for different types of seafood product are given in the generic RMP models.

4.2 SCOPE

The scope defines the accepted boundaries of the HACCP application. The scope should identify the product(s), and the start and endpoint of the process covered by the HACCP application. When the HACCP application forms part of an RMP or FSP, these details will be included in the scope of the RMP or FSP.

4.3 PRODUCT DESCRIPTION AND INTENDED PURPOSE

The operator must give a full description of the product or product groups. When there are multiple products, they should be categorised into groups of products with similar characteristics, processing steps and/or intended use, in order to simplify the HACCP application.

The description should include the following information:
- product name(s);
- intended use of the product(s);
- intended consumer;
- any regulatory limit;
- operator-defined limits; and
- other product details (e.g. packaging specifications, shelf-life and storage requirements, labelling requirements).

This information will provide a profile of the product(s), which is necessary for the setting of appropriate food safety criteria (e.g. operator-defined limits), and hazard identification and analysis. For example, the microbiological criteria for shellfish that will be eaten raw are likely to differ from those for shellfish that will be cooked before consumption.

Intended use and consumer
The intended use should be based on the expected uses of the product by the end user or consumer (e.g. cooked before consumption or ready-to-eat without cooking). In some cases, it may also be important to identify whether the product is intended for any specific consumer group, particularly vulnerable groups of the population such as infants, elderly, or immuno-compromised individuals.

Regulatory limits
Regulatory limit means a measurable regulatory requirement that is critical to fitness for intended purpose of animal material or animal product. Regulatory limits are limits that are essential to be met for food safety. They are set by the regulator, and may be based on quantitative risk assessments or on best available science.

Operator-defined limits
Operator-defined limits are measurable limits established by an RMP operator to manage the fitness for purpose of animal material or animal product. Examples of operator-defined limits include:
- intrinsic parameters of the final product (e.g. pH of acidified/marinated mussels, moisture content or water activity of dried fish);
- levels of physical hazards (e.g. limit for number of shell pieces in mussel meat);
- parameters related to wholesomeness (e.g. level of defects).

The operator should first check relevant legislation for any limits that are appropriate for their specific product(s) and the hazard(s) of concern. When no legal requirement has been specified and if necessary for food safety, the operator should define their own limits. For example, MAF has not established a moisture content limit for dried fish, but since this characteristic is related to the stability and suitability of the product, the operator should define an appropriate moisture content limit for the product.

The operator must have evidence to show that any limits they have defined are appropriate to the product, considering its intended use and consumer. The types of evidence which could be used include:

- published information from approved codes of practice, guidelines produced by government and reputable industry organisations;
- peer-reviewed scientific information;
- outcomes of validated predictive models;
- scientific information from a person or organisation known to be competent; and/or
- data from the company's monitoring and verification programmes, trials and experiments.

Operator-defined limits may be achieved by GOP or CCPs. For raw products (e.g. raw fish, raw shellfish), which have not undergone any lethal processing treatment (e.g. cooking, hot smoking), any operator-defined limits are likely to be achieved by applying controls under GOP. For further processed products, particularly those that are ready-to-eat, any operator-defined limit that is essential for food safety should be considered at CCP determination and may result in a CCP.

4.4 PROCESS DESCRIPTION

An accurate description of the process is necessary to be able to do a proper hazard analysis. The simplest way to describe the process is to develop one or more process flow diagrams showing all inputs, process steps, and outputs. These diagrams provide a basis for a systematic (i.e. step-by-step) hazard analysis.

The main steps in the process should be shown, including any rework or recycling of materials. Inputs should include all raw materials, additives and other ingredients, and packaging that will form part of the end product.

The process flow diagram should be confirmed by a person or persons with sufficient knowledge of the operation to ensure that it is accurate and reflects what is actually happening.

4.5 HAZARD ANALYSIS

4.5.1 Hazard identification

Hazards that are "reasonably likely to occur" should be considered in hazard identification. Reasonably likely to occur means that:

- the particular hazard is known to occur in the particular seafood or seafood product based on scientific reports, industry or company results, codes of practice, and information from MAF; and
- the hazard is known to occur in New Zealand (care should be taken when considering overseas information).

Hazards should be identified specifically when necessary to identify specific controls for the particular hazard/product combination. Examples of these are: *Listeria monocytogenes* in ready-to-eat smoked mussels and histamine in certain wet fish.

For certain hazard/product combinations, it may be acceptable to identify hazards as a group based on their common characteristics, source and/or control (e.g. marine biotoxins in shell fish).

Vague descriptions of hazards should be avoided. For example, "foreign objects in a manufactured seafood product" could mean metal, glass, or plastic. These objects are from different sources and have different characteristics, and would therefore require different control measures.

4.5.2 Identification of hazards from inputs

The operator should identify the hazards that are reasonably likely to occur in each input, considering any supplier assurances, agreed specifications and supplier performance.

In most cases, the best option for the operator is to require that the supplier controls the hazard to acceptable levels in incoming raw materials and ingredients. This may be addressed under a supplier quality assurance programme which may include; having agreed material specifications, provision of certificates of analysis, conducting supplier audits, and testing of incoming materials.

4.5.3 Identification of hazards at the process steps

The operator should identify the hazards that are introduced or transferred to the product as a consequence of applying the process step itself. The potential impact of the process step on any existing hazard (e.g. microbiological growth, toxin formation) should also be considered during hazard analysis. Hazard analysis should be done for each step.

4.5.4 Identification of control measures

The operator should identify any control measures for each identified hazard.
A control measure is any action or activity that is applied to:

- control the initial levels of hazards (e.g. supplier assurances, testing and rejection of unacceptable ingredients, good animal production practices);
- prevent an unacceptable increase of the hazard (e.g. hygienic processing techniques, chilling, reduction of water activity levels, use of preservatives, acidification); and
- reduce or eliminate the level of the hazard (e.g. pasteurisation, commercial sterilisation, use of antimicrobial agents, trimming, washing).

Most control measures are likely to be covered by GOP.

If control measures do not exist or are inadequate, the operator should consider the need for redesign of the process, the implementation of new control measures or leaving the hazard as uncontrolled (if appropriate).

4.6 CCP DETERMINATION

A critical control point (CCP) is a step at which control can be applied and is essential for food safety as defined by a regulatory or operator-defined limit. The operator should determine whether there are any CCPs for the process.

Some points to consider when determining if control at the particular step is essential include: the degree of hazard control that is achieved at the step; likelihood of failure; consequence of control failure considering the intended use and consumer (i.e. risk to health). Generally, essential steps are those that are specifically designed to eliminate or reduce the hazard to an acceptable level.

The operator should use a systematic approach to hazard analysis and CCP determination for each process covered by the RMP. This must be documented, and any decisions made must be justified using information such as historical company records, technical publications, codes of practice or information provided by MAF.

CCP determination can be facilitated by the use of a decision tree (e.g. Codex decision tree) or a table that provides a series of questions to guide the user through the decision-making process. The table currently used in the generic RMP models is a combined hazard analysis and CCP determination table that has been developed to suit the needs of the industries under the Animal Products Act. A template of this hazard analysis and CCP determination table is shown in Table 1.

When a CCP is identified, the remaining HACCP principles must be applied. When there are no CCPs identified, the other principles related to CCPs (i.e. critical limits, monitoring and corrective action) are not required. However, verification, documentation and record-keeping must still be applied.

Table 1: Hazard analysis and CCP determination template

Process step	Inputs	Hazard reasonably likely to occur on or in the product at this step	Justification	Q1. Is there a control measure(s) for the hazard at this step?[1]	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit or operator defined limit?[2]	CCP No.

[1] If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.
[2] If yes, this step is a CCP. If no, this step is not a CCP.

To clarify the use of Table 1, the meaning of each column is explained. The operator should go through the series of questions for each step in the process. The hazard analysis must show any hazard that is uncontrolled at the end of the process. The Generic RMP models show how this table can be used for different seafood product operations.

Column 1 - Process step
Write each process step in column 1 in the order shown in the process flow diagram.

Column 2 – Inputs
In column 2 indicate all inputs at the particular step. This should align with the process flow diagram.

Column 3 – Hazard identification
Identify the hazards reasonably likely to occur at each process step considering:

- hazards introduced by inputs at that step;
- hazards introduced or transferred as a consequence of applying the process step itself (e.g. metal from mincers);
- hazards carried over in the product from the previous step; and
- adverse impact of process step on existing hazards (e.g. growth of micro-organisms).

Column 4 – Justification
In column 4, give a brief justification for the hazard identified in the previous column. Justification may be based on company experience and records, scientific literature, surveys, industry reports, Codes of Practice, generic HACCP plans and other guidance documents provided by MAF.

Column 5 – Question 1: Identification of control measures
Question 1 requires the operator to identify any control measure for the identified hazard(s). Procedures for the control measure(s) must be documented in a supporting system of the RMP or FSP. The reference document title or number of the particular supporting system should also be cited.

Any hazard that is not completely eliminated at a step should be considered at the next step to ensure that the impact of succeeding steps on the existing hazard is considered during the analysis. In particular, bacterial pathogens should be carried over to succeeding steps since there is potential for their growth.

Hazards that are unlikely to be adversely affected by succeeding steps in the process (i.e. will not grow or increase), such as chemical residues and parasites, do not need to be carried over each succeeding step in the hazard analysis table to reduce repetition. However, the hazard must be reintroduced at the step where it is controlled or, if the hazard is considered to be uncontrolled, it must be shown at the last step of the process.

If a control measure for an identified hazard does not exist in the process or is inadequate, the operator should consider process redesign, the implementation of new control measures or leaving the hazard as uncontrolled (if appropriate).

Column 6 - Question 2: CCP determination
The operator will need to decide whether or not the step is a CCP by determining if control at that step is essential, by itself or in combination with other steps, to achieve any regulatory limit or important product characteristic related to food safety.

Points to consider when determining if control at the particular step is essential include:
- the degree of hazard control that is achieved at the step;
- likelihood of failure;
- consequence of control failure (i.e. risk to health) considering the intended use and consumer.

4.7 ESTABLISH CRITICAL LIMITS

Critical limit means a criterion which separates acceptability from unacceptability at a critical control point. The operator must define and justify critical limit(s) for each CCP. In some cases, more than one critical limit may be needed at a particular step. Parameters often used include temperature, time, moisture level, pH, and water activity.

Critical limits must be measurable and should be linked to the achievement of a regulatory or operator-defined limit related to food safety. They should be appropriate to the specific operation and product. They should be parameters that can be monitored on an on-going basis to ensure consistent effectiveness of the particular process step to achieve a specified level of control.

The operator should document:
- the parameters that are to be checked;
- the limit for each parameter; and
- justification for each limit.

4.8 ESTABLISH CCP MONITORING

Monitoring is the scheduled measurement or observation of a CCP relative to its critical limits. The operator must document monitoring procedures for each critical limit. The monitoring procedures must be able to detect loss of control at the CCP quickly to allow immediate corrective actions to be taken.

Monitoring procedures should include the:
- person responsible for monitoring;
- monitoring method;
- monitoring frequency and sampling regime; and
- records to be kept.

The monitoring frequency selected must ensure adequate and consistent control. Monitoring may be continuous or be based on a statistical sampling plan. Other factors to consider for determining monitoring frequency include: the nature of the product, the likelihood of failing the limits, the cost of monitoring, the consequence of failure (including risk to human health), the corrective actions expected (especially with respect to product disposition), and other relevant matters.

4.9 ESTABLISH CORRECTIVE ACTION

The operator must document corrective action procedures to be implemented when a critical limit is not met. Corrective action procedures should include the following information:

- person responsible for taking corrective action;
- procedures for restoration of control;
- procedures for control and disposition of non-conforming product, including checking of product back to the last acceptable result, where possible;
- action to prevent the problem from happening again;
- escalating response if preventative action fails; and
- records to be kept.

4.10 ESTABLISH VERIFICATION PROCEDURES

The operator must establish and document operator verification procedures to ensure that the HACCP system is working effectively. The frequency of verification should be sufficient to confirm that the HACCP system is consistently working correctly.

Whenever possible, verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions.

Examples of verification activities include:

- review of the HACCP system and its records;
- review of deviations and product dispositions; and
- confirmation that CCPs are kept under control.

The verification procedures should include the following information:

- person responsible for operator verification;
- frequency or schedule for operator verification activities;
- verification methods and procedures;
- follow-up action to be taken if non-compliance occurs; and
- records to be kept.

4.11 ESTABLISH DOCUMENTATION AND RECORDS

The operator must document all matters relating to the application of HACCP to the operation. Documentation and record keeping should be appropriate to the nature of the size of the operation and sufficient to assist the business to verify that the HACCP controls are in place and being maintained.

Examples of records that should be generated when implementing HACCP are:

- CCP monitoring observations;
- deviations to critical limits and associated corrective actions;
- results of verification procedures; and
- modifications to the HACCP application.

4.12 CONFIRMING THE APPLICATION OF HACCP

The operator should check the application of HACCP after completing the initial hazard analysis and CCP determination. The following points should be considered:

- Are the operator-defined limits appropriate and achievable or are new ones needed?
- Are the identified CCPs essential to complying with the regulatory or operator-defined limit(s)?
- Are the critical limits appropriate and achievable? Can the critical limits be monitored effectively?
- Are all the identified hazards adequately controlled by GOP and/or a CCP(s), or by controls outside the HACCP plan (e.g. regulated control scheme)? If not, does the process need to be modified or are additional control measures needed?
- Are there any uncontrolled hazards? If so, is it required by legislation to be controlled to a specified level? Does the operator need to consider redesigning the process/product? Does the operator need to inform the further processor, retailer or consumer about the uncontrolled hazard so that food safety can be assured prior to consumption of the product (e.g. by providing feedback to suppliers; or cooking instructions, or product specifications to customers / consumers).

5 Identification and Control of Risk Factors Related to Wholesomeness and Labelling of Products

Amendment 0

July 2011

5.1 RMP REQUIREMENT

The current version of the RMP Specifications, clause 10, states that an RMP must specify any risk factors that could negatively affect the wholesomeness of the product, and/or that could lead to false or misleading labelling of the product.

Identification of risk factors should be done systematically for each step of the process, for each seafood product or group of products. It should be based on:

- guidance given in other parts of this COP;
- operator knowledge/ experience of their product and process (including a review of internal records and reports); and
- customer (e.g. processor, distributor, retailer) and consumer complaints.

The operator must establish and document procedures for controlling any identified risk factors. These procedures may be documented in process control procedures or in supporting systems.

5.2 WHOLESOMENESS

A wholesomeness risk factor is a condition of the product that is offensive; or anything that could be contained or in contact with a product, that is offensive, or whose presence would be unexpected or unusual in product of that description. Examples of wholesomeness risk factors relevant to seafood product are:

- foreign objects that are not physical hazards (e.g. pea crabs in mussels, human hair in a fish product); and
- spoilage of fish.

Sections 2.8, 3.8, 4.8 and 5.9 of the supplementary document Generic RMP Models for the Processing of Seafood Product give examples of risk factors and controls related to wholesomeness.

5.3 LABELLING

Animal products intended for the New Zealand market must meet all relevant legislative requirements related to labelling including:

- The Animal Product Regulations 2000, regulations 8 and 19;
- Part 7 of the current Animal Products (Specifications for Products For Human Consumption) Notice;
- Parts 1.1A and 1.2 of the Australia New Zealand Food Standards Code;

- Part 1 of the Food (Safety) Regulations 2002; and where applicable.

A labelling risk factor is anything that could cause false or misleading labelling of a product. Examples of labelling risk factors are:

- wrong information in labels (e.g. ingredient list);
- wrong labels attached to packs;
- wrong products packed in pre-labelled packaging; and
- printers not properly set.

When identifying risk factors, consideration should be given to the type and intended use of the product, the intended consumer (animal or human), specific consumer groups (e.g. religious groups, people with allergies) and requirements for authenticating certain claims (e.g. organic, GM free).

Those operators who export their products will also need to consider the labelling requirements of the relevant market. These requirements may be additional to those needed in the RMP.

Sections 2.9, 3.9, 4.9 and 5.10 of the supplementary document Generic RMP Models for the Processing of Seafood Product give examples relating to the identification and control of risks from false or misleading labelling.