



Australian Government

Australian Quarantine and Inspection Service

HAZARD ANALYSIS CRITICAL CONTROL POINT (HACCP)

A Guideline to Compliance with the

***Export Control (Fish & Fish Products) Orders
2005***

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Background

The *Export Control (Fish & Fish Products) Orders 2005* (the Orders) together with the *Export Control (Prescribed Goods General) Order 2005* (the PGGOs) and the *Export Control Act 1982* (the Act) provide conditions and restrictions on the export of fish and fish products.

Prior to the 1st of October 2005, fish and fish products for export were regulated under the *Export Control (Dairy, Eggs and Fish) Orders 2005* – these Orders have now been separated into the *Export Control (Fish & Fish Products) Orders 2005*, the *Export Control (Egg & Egg Products) Orders 2005* and the *Export Control (Dairy & Dairy Products) Orders 2005*.

Objectives

The objectives of the Orders are to facilitate trade based on effective food safety and suitability procedures and accurate descriptions of product. Audit provisions are required to substantiate the adequacy of these procedures. On this basis, certification is provided as required by importing countries, thereby facilitating trade.

This guideline specifically addresses the requirements of Registered Establishments to meet objective 3.1 (a) and (c) of the objectives of the Orders.

Export Control (Fish & Fish Products) Orders 2005 – Order 3

Order 3 - Objectives of these Orders

3.1 The objectives of these Orders are to facilitate trade by ensuring the following:

- (a) that fish and fish products for export as food are fit for human consumption or are manufacturing grade fish and fish products and are identified as manufacturing grade for export for further processing;
- (c) that fish and fish products for export as food meet importing country requirements

Hazard Analysis Critical Control Point – (HACCP)

Introduction

The purpose of this guideline is to facilitate the development and implementation of an effective food safety plan based on Hazard Analysis Critical Control Point (HACCP).

Part 1 of the guideline aims to answer the following questions:

- What is HACCP?
- Why are HACCP systems required?
- Who is required to have a HACCP system in place?
- How do I develop a HACCP Plan?

Part 2 of this guideline explores HACCP further by explaining the concept of HACCP in greater detail.

Upon reading this guideline, establishments should be aware of their roles and responsibilities in implementing and managing effective HACCP systems.

It is important to note that successful application of a HACCP system requires the full commitment and involvement from management and staff.

It is the responsibility of the occupier of the establishment to ensure that all staff are appropriately trained in HACCP and are aware of their roles and responsibilities in the implementation and management of HACCP systems.

Part 3 of this guideline provides examples of general hazards controlled through compliance with Schedules 3 and 4 of the Orders

Part 4 aims to explain the principles of HACCP using the following specific examples from the seafood industry:

Example 1: Fishing vessel: Frozen Raw King Prawns (see pages 19-23)

Example 2: (a) Live Fish Packing Establishment: Live Coral Trout (see pages 24-27)

(b) Live Fish Packing Establishment: Live Pacific Oysters (see pages 28-31)

Example 3: Cold Store: Fish and Fish Products (see pages 32-35)

The aim of the examples is to demonstrate what actually needs to be done to comply with the legislation and what information the various documents should include.

It is important to note that the examples should be used as a **guide only** when developing your own food safety plan. Your plan should reflect your own unique operations.

Part 1

1.0 What is HACCP?

HACCP stands for Hazard Analysis Critical Control Point.

The HACCP system is an internationally recognised system used to manage food safety. It has been endorsed by the *Codex Alimentarius Commission** as a tool that can be used to systematically identify hazards specific to individual products and processes and describe measures for their control to ensure the safety of fish and fish products. The HACCP system is a dynamic system, capable of accommodating change such as changes in equipment design, processing procedures and technological advancements.

1.1 Good Manufacturing Practices / GMPs (Pre-requisite Programs)

The HACCP system is applied to specific product lines and procedures.

In order for the HACCP Plan to be implemented effectively within the establishment it must be based on a firm foundation of Good Manufacturing Practices (GMPs) and procedures that effectively control general hazards to food safety.

The general and operational hygiene requirements an AQIS registered establishment must have in place are described in the *Export Control (Fish & Fish Products) Orders 2005* and include:

Schedule 3 – Structural Requirements – details the requirements that must be met for registration of an establishment for the preparation of fish and fish products for export, including requirements for site, structure, premise, cleaning facilities, amenities and essential services including control of water supply & waste.

Schedule 4 – Operational Hygiene – details the requirements that an Establishment must meet for control of hygiene including hygiene controls for premises, equipment, processing and personnel.

An Establishment should document how the requirements of Schedule 4 are to be met, the controls that are in place to ensure that the requirements are met and how the controls are monitored and verified to ensure that general hazards to food safety are being effectively controlled.

For example: cleaning programs should be documented to include details of how cleaning is undertaken, how it is monitored and how the program is verified to ensure it is effective.

Hazards controlled by meeting the structural and operational hygiene requirements of the Orders may not need to be identified as part of the HACCP Plan.

For examples, see Part 3 of this guideline.

* *Codex Alimentarius Commission* created in 1963 by the Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO) to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme
Reference: *Codex Alimentarius* website: http://www.codexalimentarius.net/web/index_en.jsp

1.2 Why are HACCP systems required?

Export Control (Fish & Fish Products) Orders 2005 – Order 34 of Part 3

Order 36 - Requirement for an approved arrangement

36.1 The occupier of:

- (a) a registered establishment; and
- (b) an unregistered establishment in relation to which an approval referred to in order 32 has effect;
 - must have an approved arrangement that complies with the requirements of Schedule 2 (Management of food safety and suitability).

Schedule 2 of the Orders details how food safety and suitability is to be managed.

Export Control (Fish & Fish Products) Orders 2005 – subclause 2.1 – Schedule 2

Schedule 2 Management of food safety and suitability

Minimum requirements for approved arrangements

2.1 An arrangement for the preparation of fish and fish products at an establishment that is required for the purposes of order 34 of these Orders must cover each step of the preparation of fish and fish products undertaken at the establishment and must:

- (a) contain a HACCP plan referred to in clause 3 of this schedule

Clause 2.1 of Schedule 2 of the Orders requires a HACCP Plan as part of an Approved Arrangement for the preparation[†] of fish or fish products.

1.3 Who is required to have a HACCP plan?

The occupier of a Registered Establishment must have a documented HACCP Plan as part of an Approved Arrangement. AQIS has developed a guideline titled “Approved Arrangement - A Guideline to Compliance with the *Export Control (Fish & Fish Products) Orders 2005*” to help you document procedures in your Approved Arrangement. The guideline is available at www.aqis.gov.au/fish

[†] Preparation: in relation to processed food includes the following:

- (a) The slaughter or killing of animals and the dressing of carcasses;
- (b) The processing, packing or storage;
- (c) The treatment of prescribed goods;
- (d) The handling or loading of prescribed goods.

1.4 How do I develop a HACCP Plan?

The successful development and implementation of an effective HACCP Plan can be achieved by following the checklist below and referring to the specific examples provided. For more detailed information on developing a HACCP plan, refer to Part 2 of this guideline.

1.5 HACCP Checklist

Step	Completed Y/N?
1. Identify and list all of the products you process	
2. Complete a Product Description for each product	
3. Develop Process Flow Diagrams for these products[‡]	
4. Verify the Flow Diagram	
5. Complete a Hazard Analysis	
5.1 List processing steps	
5.2 Identify and list all potential hazards (chemical, physical and biological) at can be reasonably expected to occur each processing step	
5.3 Identify and record significance of hazard§ (This may be documented in a Hazard Analysis Table)	
5.4 Provide justification for inclusion or exclusion as a significant hazard (why is it significant or not significant?)	
5.5 Identify and list Control Measures – i.e. what can be done to prevent the hazard from occurring	
5.6 Determine whether the step is a Critical Control Point (CCP) for food safety	
6. Complete a HACCP Table	
6.1 List the Critical steps	
6.2 List the potential hazards	
6.3 Establish the Critical Control Point/s (factor/s) and Critical Limits and record them on the HACCP table	
6.4 Validate Critical Limits and record them on the HACCP Table or in a separate document	
6.5 Establish a monitoring system for each CCP and record it on the HACCP Table	
6.6 Establish Corrective Actions and record them on the HACCP Table	
6.7 Establish Verification procedures and record them on the HACCP Table or in a separate document	
7. Keep Records	

[‡] Some products can be covered by the same process flow diagram for example, if you process more than one species of frozen fish, you may not require a separate process flow diagram for each species

[§] Significant hazard means a hazard (or a hazard in combination with other hazards) that is of such a nature that its elimination, control or reduction to an acceptable level is essential to the production of a safe food. (Subclause 3.9 of Schedule 2 of the Orders).

Part 2

2.0 Developing a HACCP plan

In developing a HACCP plan, there are several preliminary tasks that should be completed.

2.1 Describe the fish and fish products

This task involves providing a general description of the fish and fish products, ingredients and processing methods.

The purpose of the Product Description is to identify the scope of the hazard table to be developed (see the first HACCP principle – Conduct a Hazard Analysis for more information).

The product description should include the following information:

- The raw material of the product;
- The source of the raw material;
- A list of all the ingredients (including food additives);
- The preservation method i.e. what steps are taken to extend the shelf life of the product (chilling, freezing, drying etc.)?
- The intended use of the product –i.e. “Is it intended to be eaten raw or cooked by the consumer?”
- The packaging (e.g. vacuum packed, plastic liner in cardboard cartons etc.);
- How the product is to be transported (including the method of transportation eg. closed refrigerated vehicle maintained at below -18°C and
- Storage conditions (e.g. frozen, refrigerated, at ambient temperature etc.)
- The product standards applicable to the product (Refer to the Food Standards Code and the AQIS Guideline – Product Standards)

If an Establishment is processing more than one type of fish or fish product and the Product Description, process or preservation method is significantly different, more than one Hazard Table may be required because the risks associated with the preparation of the fish and fish products will be different. See Part 4 for examples of Product Descriptions.

The Product Description also highlights the fact that different commodities will be required to meet different product standards (See Schedule 6 – Product Standards, of the Orders).

2.2 Develop a flow diagram

The purpose of the Flow Diagram is to provide a clear, simple outline of the steps involved in the processing of the fish and fish products.

The diagram must cover all steps in the manufacturing process including: inspections, packaging, storage, transport and delays involved in the preparation and processing of the fish and fish products. The diagram does not need to be complex, but must be thorough. A simple flow diagram is appropriate. See Part 4 for examples of Flow Diagrams.

2.3 Verify the Flow Diagram

The accuracy and completeness of the process Flow Diagram must be confirmed (verified). The diagram must be accurate and document what actually happens during processing.

At audit AQIS officers verify the Process Flow Diagram by watching the process flow and comparing this to the documented Process Flow Diagram. You can verify your Flow Diagram by carrying out operations as normal and confirming that each of the steps of processing are documented, in the correct order, on your diagram.

If the diagram does not reflect operations, it should be modified where necessary. The flow diagram will help you identify hazards to processing and establish Critical Control Points (see HACCP principles).

After these preliminary tasks have been completed, the HACCP plan needs to be developed as follows:

2.4 HACCP principles

The HACCP system consists of the following seven principles:

1. Identify Potential Hazards (Hazard Analysis)

The purpose of the Hazard Analysis is to systematically identify and list all potential hazards at each step of processing. The Hazard Analysis is also used to determine which potential hazards are significant – that is – which hazards – if not controlled are likely to impact on public health and safety.

Step One of the Hazard Analysis is to list each of the steps involved in processing (refer to your process Flow Diagram) on a Hazard Analysis Table or Worksheet.

Step Two is to list all the potential hazards that are not already controlled through Good Manufacturing Practices and procedures. (See “Hazards from the processing environment” section below & Part 3 for more information).

Hazards

A hazard is defined as a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect (Order 8). A significant hazard is a hazard (or a hazard in combination with other hazards) that is of such a nature that its elimination, control or reduction to a significant level is essential to the production of safe food.

The three categories of hazards include:

1. Biological

- Microbiological
 - Bacterial e.g. *E. coli*
 - Viral e.g. Hepatitis A
 - Fungal e.g. moulds
- Parasites

2. Chemical

- Naturally occurring toxins e.g. ciguatera
- Heavy metals e.g. cadmium

- Cleaning/maintenance chemicals
- Food additives e.g. SO₂ from Sodium metabisulphite
- Agricultural and veterinary chemicals e.g. antibiotics

3. Physical

- Foreign objects such as hooks, shell fragments, seaweed etc.
- Splinters, paint flakes, fibreglass fragments, rust

Biological hazards may be further defined by the nature of the hazard – consider:

- Microbiological contamination (the hazard that microbiological contamination is transferred to the product from another source e.g. people, raw product)
- Microbiological growth (the hazard that, if uncontrolled, microbial numbers will increase to potentially harmful levels) and
- Biological survival (the hazard that biological hazards may survive a cooking or “kill” step in the process.)

Source of Hazards

Hazards may come from several sources which must be considered including:

- Hazards inherent in the product or introduced from the source environment
 - I.e. ciguatera, heavy metals, pesticides
- Hazards that may be introduced to the product through failure to control processing
 - I.e. failure to maintain product temperature, insufficient cooking
- Hazards from the processing environment
 - Including from people, premises and processing equipment

Hazards from the processing environment

Potential hazards from the processing environment can generally be identified at almost every step of a process as the product, food handlers, the premises and/or equipment are present at the majority of steps in the processing.

Example:

At every step of a process where the product is handled by staff, the potential for microbiological contamination may exist, especially if staff are not trained in food safety practices and hygiene practices are poor.

At every step of a process where product comes into contact with equipment surfaces the potential for microbiological cross-contamination may exist from other products (raw to cooked) or from unclean surfaces or potential chemical contamination from the use of non-approved cleaning chemicals or their incorrect use.

At every step of the process where product is exposed to the processing environment the potential for physical contamination may exist from the state of the premises – poor preventative maintenance may lead to product being exposed to flaking paint, splinters or chips of rust. Uncovered lights can expose product to potential contamination from broken glass.

Hazards from the processing environment are generally controlled by compliance with the Operational Hygiene Requirements of Schedule 4 of the Orders through a work procedure/s consistent with Good Manufacturing Practice (GMP) (refer to subclause 3.4 of Schedule 2) and as such need not be identified as part of the HACCP Plan.

So it is vital that these operational hygiene requirements are addressed as they form the foundation for the successful implementation of the HACCP Plan.

An example of the types of potential hazards from the processing environment that can be addressed by compliance with the operational hygiene requirements of Schedule 4 is tabled in Part 3.

It is recommended that, prior to developing or reviewing your HACCP Plan that you ensure that you have documented the controls used to ensure that the applicable requirements of Schedule 4 or the Orders are complied with at the establishment.

Step 3 After identifying the potential hazards, the next step is to determine the control measures eg. An action or activity that can be taken to prevent or eliminate the hazard, or reduce it to an acceptable level.

Examples of hazards and appropriate control measures are listed in the table below. Control measures should be aimed at the cause of the hazard, as there may be more than one cause for a potential hazard.

Potential Hazards (& possible cause)	Example of Control Measure
Microbiological growth (At landing)	Chill product to less than 5 ⁰ C as soon as possible after landing / catching to reduce bacterial growth
Microbiological growth (Caused by temperature abuse during transport)	Maintain product temperatures at less than 5 ⁰ C during transport
Microbiological contamination (From use of non-potable water)	Use potable water
Microbiological contamination (From food handlers – poor hygiene)	Ensure food handlers comply with hygiene procedures
Microbiological survival (Insufficient cook time & temp.)	Ensure product is cooked to x degrees C. for x time
Excess SO ₂ (Sulphur Dioxide) in prawn flesh (Excessive dip time in Sodium Metabisulphite)	Follow manufacturer’s directions for concentration & dip time for use of Sodium Metabisulphite
Ciguatera (Fish sourced from area of unknown status)	Do not source from areas known to be affected e.g. States proclaim certain areas, or where there are known algal blooms

It is important to note that there may be more than one control measure at each step to control the same hazard.

For example: microbiological hazards may be controlled by sourcing product from an approved source, maintaining product temperature, cooking, freezing, drying, etc.

More than one hazard may be controlled by a single control measure e.g. sourcing provisions from an approved source may control chemical, biological and physical hazards.

2. Determine the Critical Control Points (CCPs)

A Critical Control Point (CCP) is defined as a factor, practice, procedure, process or location that can be controlled in order to prevent, control, eliminate or reduce a hazard, or minimise the likelihood of its occurrence (Order 8). In simpler terms, a CCP can be considered as a step that if no control is applied, then the food is likely to be unsafe.

The Hazard Analysis and process Flow Diagrams developed in earlier steps can be used here to identify which steps in the process are Critical Control Points.

One method of determining CCPs is to use a CCP Decision Tree (see Appendix I for an example of a CCP Decision Tree). The Decision Tree however, may not be applicable to all situations and should therefore be used as a guide only. Some people may prefer to seek guidance from local industry associations or colleagues about determining CCPs.

If a hazard exists where a control measure is necessary but no such measure exists, the process should be modified to include a control measure.

3. Establish Critical Limits for each CCP

A Critical Limit is the limit to which a hazard must be controlled to prevent, control, eliminate or reduce the occurrence of the hazard to an acceptable level.

Some CCPs will have clearly defined parameters, whereas other critical limits will have a range or degree of tolerance e.g. chilled fish or fish product must stored be between -1°C and 5°C.

Critical Limits should be measurable – as once determined they need to be monitored to ensure that limits are met – deviation from a Critical Limit may result in unsafe product or product that does not meet regulatory or importing country requirements.

Critical limits for each CCP must be specified and you must be able to prove that the critical limit will control the hazard (validation).

Establishments can justify the Critical Limits selected by referring to reliable sources of information such as: Regulatory Standards (e.g. AQIS legislation, *Food Standards Code*, importing country requirements etc.), AQIS guidelines, experimental results (e.g. CSIRO^{**}, Fisheries Research and Development Corporation (FRDC website <http://www.frdc.com.au/>), experts (e.g. published papers) or manufacturer's specifications for critical limits and validation.

Critical limits may also be initially validated by product testing to demonstrate that Critical Limits set will produce a safe product and/or a product that meets the applicable product standards, regulatory standards or importing country requirements.

^{**} Commonwealth Scientific and Industrial Research Organisation website: <http://www.csiro.au/>

Example:

A processor adds Sodium Metabisulphite to canned abalone, and sends this product to Japan.

The regulatory limits for SO₂ in canned abalone differ.

In Australia, the limit is 1000mg/kg whereas in Japan it is 30 mg/kg.

In this scenario, the processor must ensure that the Critical Limits set for the process used to treat the abalone with “Meta” will ensure that the finished product meets the Japanese regulatory limit as the product must meet importing country requirements.

The Critical Limits may be determined by the strength of the Metabisulphite solution used, the length of time that the product is dipped for and the grade or size of the product.

End product testing can be used to validate that the Critical Limits set will achieve the required level of 30 mg/kg of SO₂ in the finished product.

References:

Food Standards Code – www.foodstandards.gov.au

Japanese Standard for Food Additives – www.jetro.go.jp

4. Establish a Monitoring System for each CCP

Monitoring of a Critical Control Point means conducting a planned sequence of observations or measurements to assess whether the Critical Control Point is under control (Order 8).

Monitoring can be as simple as an operator monitoring product temperature, or more complex such as an operator conducting an in-line pH test using a pH meter to measure acidity or alkalinity.

Measurements need to be completed ideally in-line during processing or as quickly as possible in order to determine whether a process is operating within the required Critical Limits. If the system is outside of operating parameters, unsafe food may result and the product may be ineligible for export.

The frequency of monitoring is also important and depends on the potential hazards identified in the hazard analysis. Frequent monitoring will ensure processes are operating within the required limits and minimize the production of unsafe food.

Monitoring should be based upon observation, sensory evaluation (e.g. smell), chemical measurements and physical measurements (e.g. taking temperatures). Equipment used for monitoring should be calibrated frequently for accuracy. Monitoring records should be signed, dated and retained for audit and verification purposes.

5. *Establish Corrective Actions*

Corrective actions are required when operations go outside of Critical Limits, which ensure the safety and suitability of fish or fish product.

There are four aspects to corrective actions:

1. Identify and fix the problem:
 - i. By identifying the extent of the problem – including trace-back to identify the quantity of product prepared outside the Critical Limits, which may be back to the time the monitoring results were within the Critical Limit
 - ii. And investigating the reason why Critical Limits were exceeded
2. Consider what to do with the non conforming product
 - i. Is there a means to demonstrate the food is still safe and suitable or could it be ineligible for export?
3. Investigate what can be done to prevent the problem occurring again
 - i. This may include: increased frequency of monitoring, review of operating procedures, replacement of equipment
4. Record what action is taken to ensure the limits are maintained

The corrective action must ensure that the CCP has been brought under control. The action taken must also ensure the proper disposal of non-complying product when required.

Specific corrective actions should be developed in advance and documented in the HACCP Plan. The information recorded in the HACCP Plan should identify what corrective action should be taken, who is responsible for overseeing the action and where the corrective action is to be recorded.

Non-complying product may still be eligible for export but only if it is treated in such a way to demonstrate that it is still safe and suitable. You should discuss this with an AQIS fish inspector.

Note: Subclause 6.1 of Schedule 2 requires that corrective action be taken and documented in all instances where a requirement of the Orders or an importing country requirement is not met or is not likely to be met – not only in situations where Critical Limits are not met.

It is additionally required that the effectiveness of the corrective action taken be assessed and the result of this evaluation documented.

6. *Establish Verification Procedures*

Verification means applying methods, procedures, tests and other evaluations, in addition to monitoring, to determine whether a requirement is complied with (Order 8). Simply put, verification means; “How do I know that my HACCP Plan is working?”

Verification procedures should be considered during the development and implementation of a HACCP system.

AQIS has developed a guideline titled “Verification and Validation - A Guideline to Compliance with the *Export Control (Fish & Fish Products) Orders 2005*” to help you establish verification procedures. The guideline is available at www.aqis.gov.au/fish

7. Establish Documentation and Record Keeping

Accurate record keeping is essential to the application of a HACCP system for auditing purposes, be it your own internal audit, verification procedures, an AQIS audit, or another external audit.

All HACCP procedures must be documented. The records kept for the HACCP Plan should include:

1. Summary of the Hazard Analysis
2. HACCP Plan including:
 - A description of the food, including ingredients, packaging, storage and distribution
 - A verified flow diagram
 - HACCP plan summary table with information on:
 - Critical Steps
 - Potential Hazards
 - Critical Control Points
 - Monitoring Procedures
 - Critical Limits
 - Corrective Actions
 - Verification Procedures
3. Support documentation such as validation records and planned verification activities
4. Records that are generated during the operation of the plan e.g. monitoring records.

Further information

Codex Alimentarius Commission

Website: <http://www.codexalimentarius.net/>

Food Standards Australia New Zealand (FSANZ)

Helpline: 1300 652 166

Website: <http://www.foodstandards.gov.au>

Email: <mailto:advice@foodstandards.gov.au>

Food Standards Code web link <http://www.foodstandards.gov.au/foodstandardscode/>

For FSANZ Final Assessment Report - Proposal P265 - Primary Production and Processing Standard for Seafood (which includes a comprehensive risk assessment of seafood safety hazards) see:

http://www.foodstandards.gov.au/srfiles/P265_Seafood_PPPS_FAR.doc

USA guideline for fish and fish products Hazards and Controls Guidance 3rd edition

<http://www.cfsan.fda.gov/~comm/haccp4.html>

University of California – David Campus (UC Davis) - Seafood Network Information Centre

<http://seafood.ucdavis.edu/home.htm>

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Food Science Australia

Contacts:

Sydney: (02) 9490 8333

Brisbane: (07) 3214 2000

Melbourne: (03) 9731 3200

Website: <http://www.foodscience.afisc.csiro.au>

Fisheries Research and Development Corporation (FRDC)

Ph: 02 6285 0400

Website: <http://www.frdc.com.au>

Australian Seafood Industry Council (ASIC)

Phone: (02) 6281 0383

Email: asic@asic.org.au

Website: <http://www.asic.org.au/>

Australian Quarantine and Inspection Service (AQIS)

Adelaide	08 8201 6117	Hobart	03 6233 2502
Brisbane	07 3246 8746	Launceston	03 6391 9313
Bundaberg	07 4152 2511	Melbourne	03 8318 6752
Cairns	07 4030 7831	Perth	08 9334 1572
Canberra	02 6272 4543	Sydney	02 8334 7488
Darwin	08 8999 2063	Townsville	07 4789 7802

www.aqis.gov.au/fish or email fish@aqis.gov.au

For a copy of the *Export Control (Fish & Fish Products) Orders 2005* see

www.aqis.gov.au/legislation

PART 3

Example – Hazards from the processing environment & possible controls to demonstrate compliance with Schedule 4 – Operational Hygiene

Step	Potential Hazard	Cause	EC (F&FP) O Requirements	Control Measure	Monitoring Procedure	Verification Procedure
All steps conducted on the premises	Microbiological (M) Physical (P) Chemical (C) Contamination	Premises, equipment, vehicles, essential services (effluent, waste) do not meet the requirements of the Orders	Sch 3 & Order 37	How you will comply with the requirements of Schedule 3 is not required to be documented as this will be determined by inspection. However, a registered establishment must ensure that the requirements of Sch 3 are met – Internal Audit of the requirements of Schedule 3 will assist in demonstrating continued compliance.		
All steps conducted on the premises	Microbiological Contamination	Accumulation of waste Accumulation of dirt, grease Incorrect identification of waste	Sch. 4 Subclause 2.1, 3.4	<p>The Establishment must document the controls used to ensure that requirements of Sch. 4 are complied with.</p> <p>Control measures may include the documentation and development of:</p> <ul style="list-style-type: none"> • Cleaning Procedures for site, premises, transport etc. • Work Instructions for Product Handling • Work Instructions for Product Storage • Calibration Procedures • Pest Control Programs • Maintenance Programs • Water Usage Procedures 	<p>Once documented & implemented, control measures must be monitored to ensure that they are being followed.</p> <p>Monitoring may include:</p> <ul style="list-style-type: none"> • Observation of staff undertaking procedures • Checking & recording storage temperatures • Recording calibration checks • Checking & recording that cleaning activities have been carried out 	<p>Procedures should also include the methods by which it will be verified to ensure it is effective.</p> <p>Verification procedures may include:</p> <ul style="list-style-type: none"> • Product testing • Water & ice testing • Swabbing of equipment and testing • Review of records (cleaning records, pest control records etc.) • Internal Audit
All steps conducted using equipment	Microbiological Contamination	Unclean equipment Accumulation of dirt, grease, waste	Sch. 4 Subclause 2.2, 3.1			
All steps conducted on the premises	M, P, C Contamination	Unclean premises including; floors, walls, ceilings, cleaning areas, amenities	Sch. 4 Subclause 3.1			
All steps conducted on the premises	Physical contamination	Poorly maintained premises & equipment	Sch. 4 Subclause 3.5			
Loading, Transport	Microbiological, Physical Contamination	Unclean transport vehicles, food carrying compartments, food loading equipment	Sch. 4 Subclause 4.1			
Loading, Transport	Physical contamination	Poorly maintained transport vehicles, food carrying compartments, food loading equipment	Sch. 4 Subclause 4.2			
All, Process Steps	M, P, C Contamination	Environmental contamination including airborne or waterborne contamination	Sch. 4 Subclause 5.1			

Step	Potential Hazard	Cause	EC (F&FP) O Requirements	Control Measure	Monitoring Procedure	Verification Procedure
All steps conducted on the premises	M, P, C Contamination	Entry of animals, pests, Harborage of pests (Consider also incorrect storage / use of pest control chemicals)	Sch. 4 Subclause 6.1, 6.2, 7.1,7.2	<p>The Establishment must document the controls used to ensure that requirements of Sch. 4 are complied with.</p> <p>Control measures may include the documentation and development of:</p> <ul style="list-style-type: none"> • Cleaning Procedures for site, premises, transport etc. • Work Instructions for Product Handling • Work Instructions for Product Storage • Calibration Procedures • Pest Control Programs • Maintenance programs • Procedures for reporting food borne illness • Personal Hygiene Procedures • Staff Training in Work Instructions / SOPs 	<p>Once documented & implemented, control measures must be monitored to ensure that they are being followed.</p> <p>Monitoring may include:</p> <ul style="list-style-type: none"> • Observation of staff undertaking procedures • Checking & recording storage temperatures • Recording calibration checks • Checking & recording that cleaning activities have been carried out 	<p>Procedures should also include the methods by which it will be verified to ensure it is effective.</p> <p>Verification procedures may include:</p> <ul style="list-style-type: none"> • Product testing • Water & ice testing • Swabbing of equipment and testing • Review of records (cleaning records, pest control records etc.) <p>Internal Audit</p>
All steps conducted on the premises	Chemical contamination	Incorrect storage of hazardous substances, incorrect usage of hazardous substances	Sch. 4 Subclause 8.1, 9.1			
All Process Steps	M, P, C Contamination	Ineffective measures in place to prevent contamination of & ingredients or to control microbiological growth	Sch. 4 Subclause 10.1			
All Monitoring, Weighing Steps	Failure to meet regulatory requirement	Incorrectly calibrated measuring equipment – including thermometers, scales, pH meters etc.	Sch. 4 Subclause 11.1			
Freezing, Chilling, Storage	Microbiological growth	Failure to validate capacity of refrigeration chambers	Sch. 4 Subclause 12.1			
Steps where ingredients are added	M, P, C contamination	Ingredients not fit for purpose, Ingredients incorrectly stored, Ingredients incorrectly labelled	Sch. 4 Subclause 13.1			
Process Steps using water	Microbiological contamination	Use of non-potable water and/or unclean seawater Use of contaminated water	Sch. 4 Subclause 14.1-18.1			
Steaming Steps	M, P, C contamination	Contamination from steam	Sch. 4 Subclause 18.1			
Steps where used	M, P, C contamination	Contamination from compressed air or other gases	Sch. 4 Subclause 19.1			
Steps where product is handled	Microbiological contamination	Infected food handler, (Food borne diseases, conditions & injuries)	Sch. 4 Subclause 21.1-22.2			
Steps product is handled	M, P, C contamination	Poor hygiene practices	Sch. 4 Subclause 23.1- 25.2			

Part 4

Example 1 – Fishing vessel catching and freezing raw king prawns

Step 1. Identify and list all of the products you process – Frozen Raw King Prawns

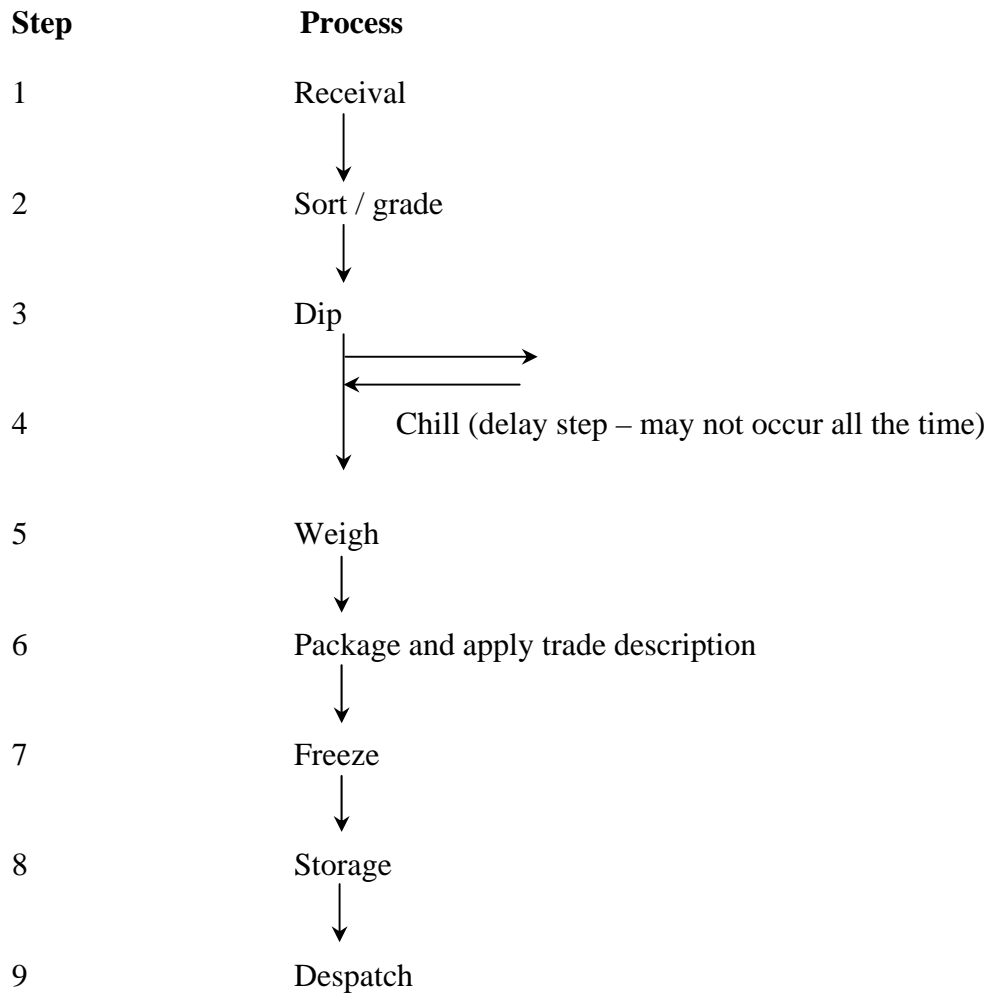
Step 2. Complete a Product Description for each product

Product Description	
Product Raw Material	King prawns <i>Penaeus plebejus</i>
Source of Raw Material	Catch area e.g. Moreton Bay
Ingredients added (Including food additives)	Sodium metabisulphite
Processing Method / Preservation Method	Freezing
Final Product	Frozen Raw King Prawns
Intended Use	Product is intended to be cooked by the end consumer
Packaging	Plastic liner in cardboard cartons
Transport	Transported by an Approved Supplier, by road under temperature control
Storage	To be kept frozen at or below -18°C
Finished product requirements Australia	List Finished product requirements See Schedule 6 & FSANZ Food Standards Code for finished product requirements for microbiological, chemical requirements etc
Finished product requirements (Importing Country)	List Finished product requirements of importing country as applicable
Trade Description (Product Label)	Product label must bear an accurate Trade Description – see AQIS Guideline “Trade Description – a Guideline to compliance with the <i>Export Control (Fish & Fish Products) Orders 2005</i>

Step 3. Develop a process Flow Diagram for this product

Step 4. Verify the Flow diagram - Carry out operations as normal and confirm that each of the steps of processing is documented, in the correct order, on the diagram.

Process Flowchart: Fishing vessel catching and freezing raw prawns



Process Flow Diagram Verified by:.....Signed:.....

Date:.....

Step 5. Complete a Hazard Analysis

Step 6. Complete a HACCP summary table

Step 7. Keep Records

Example Hazard Analysis Worksheet

Fishing Vessel: Frozen Raw King Prawns

1. Processing Step	2. Potential Hazard	3. Is the potential hazard significant?	4. Justification for inclusion or exclusion as a significant hazard.	5. What can be done to prevent the hazard in column 3 from occurring?	6. Critical Control Point for food safety? Yes/no (Determined using CCP decision tree)*	7. Verification Procedures
Receival	BIOLOGICAL Diseased product	NO	Can be controlled by GMP ** A work procedure outlines what staff are required to do See Part 3 of this Guideline	Follow work procedure Remove during sort/grade	NO**	<p>A verification procedure is required to confirm whether the control is working.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • Calibrating equipment • Testing samples of product • Reviewing records <p>For Example:</p> <p>Product testing on a regular basis to verify that using meta in accordance with manufacturers instructions results in a product containing less than 100ppm SO₂</p>
	CHEMICAL Chemical residues e.g. Cadmium	YES	Chemical residues can affect human health and safety	Source prawns from unpolluted, non-toxic waters	YES	
	PHYSICAL Seaweed, shell fragments etc.	NO	Foreign matter is usually a quality issue	Remove during sort/grade	NO**	
Sort/grade	BIOLOGICAL CHEMICAL PHYSICAL	NO	Can be controlled by GMP ** Work procedures outline what staff are required to do See Part 3 of this Guideline	Follow work procedures	NO**	
Dip	CHEMICAL Excess SO ₂ residue in prawn flesh	YES	Sulphiting agents can cause allergic reactions Regulatory requirement – less than 100ppm in raw prawn flesh	Follow manufacturer's instructions for preparing and using solution. Ensure cartons are correctly labelled	YES	

* Determining the Critical Control Points (CCPs) is covered in the second HACCP principle.

** ** These hazards can be controlled by meeting the operational hygiene requirements of Schedule 4 of the Orders through a work procedure consistent with Good Manufacturing Practice (GMP) (refer to subclause 3.4 of Schedule 2)

1. Processing Step	2. Potential Hazard	3. Is the potential hazard significant?	4. Justification for inclusion or exclusion as a significant hazard.	5. What can be done to prevent the hazard in column 3 from occurring?	6. Critical Control Point for food safety? Yes/no (Determined using CCP decision tree)*	7. Verification Procedures
Chill	BIOLOGICAL Microbiological growth	YES	Pathogen growth may occur if temperature conditions are compromised	Ensure product is reduced to below between -1°C and 5°C within x hours	YES	<p>A verification procedure is required to confirm whether the control is working.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • Calibrating equipment • Testing samples of product • Reviewing records <p>For Example:</p> <p>Product testing on a regular basis to verify that chilling / freezing times will result in a product that will meet product standards (microbiological)</p>
	BIOLOGICAL Microbiological Contamination (Water / ice)	NO	Legislation outlines what is required (See Schedule 4 subclause 13 – 16) and Part 3 of this Guideline	Follow legislative requirements	NO**	
	CHEMICAL Chemical residue	May be - depending on chemicals added to Chill tank / Brine	Consider the chemicals that are used in the operation – may include salt, chlorine dioxide, sodium metabisulphite	Control measure will be dependant on the cause of the hazard	May be - depending what chemicals may be added to Chill tank / Brine	
Weigh	No food safety hazards identified	NO	Can be controlled by GMP ** Work procedures outline what staff are required to do See Part 3 of this Guideline	Follow work procedures	NO**	
Package and apply trade description	No food safety hazards identified	NO	Legislation outlines what is required (See Schedule 7 and part 4 of Schedule 5)	Follow legislative requirements	NO**	
Freeze	BIOLOGICAL Microbiological growth	YES	Pathogen growth may occur if temperature conditions are compromised	Ensure product is reduced to below -18°C within x hours (record, keep & review temperature records)	YES	
Storage	BIOLOGICAL Microbiological growth	NO	Hazard can be controlled by compliance with regulatory requirements & the development of a work procedure.	Ensure the product is stored under appropriate temperature control (record, keep & review temperature records)	NO**	
Unloading	BIOLOGICAL Microbiological growth	NO	Hazard can be controlled by a work procedure	Product to be unloaded quickly to avoid pathogen growth	NO**	

** These hazards can be controlled by meeting the operational hygiene requirements of Schedule 4 of the Orders through a work procedure consistent with Good Manufacturing Practice (GMP) (refer to subclause 3.4 of Schedule 2)

Example HACCP Table

Fishing Vessel: Frozen Raw King Prawns

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action (Include where recorded)
1. Receival	Chemical residue, contamination	Catch Area	Who: What: When: Where recorded:	Source prawns only from unpolluted/non-toxic waters. EC (F&FP) O Sch. 5 subclauses 1.1	Corrective Actions must be developed to ensure that the Critical Limits are brought back under control should a deviation occur.
3. Dip	Excess SO ₂ residue in prawn flesh from incorrect dosage / dip time in meta (sodium metabisulphite)	Sodium metabisulphite solution strength and dip time	Who: What: When: Where recorded:	Example: x Kgs of Meta to be added to hopper each shot – dip prawns for no more than x minutes Critical limits must be validated to ensure less than 100 ppm SO ₂ in uncooked crustacea; less than 30ppm SO ₂ in cooked crustacea (See Standard 1.3.1 of <i>Food Standards Code</i>)	Corrective Actions should identify: <ul style="list-style-type: none"> • What action is to be taken • How affected product is to be identified • How the status of the product for export is to be determined • Who is responsible for taking the Corrective Action • What measures are going to be taken to ensure that the deviation does not occur again? • Where the above information is to be recorded.
4. Chill (Optional)	Microbiological growth	Product temperature & time taken to reduce temperature	Who: What: When: Where recorded:	Reduce to between -1°C and 5°C within x hours. (EC (F&FP) O Schedule 5 subclause 18.1)	
7. Freeze	Microbiological growth	Product temperature & time taken to reduce temperature	Who: What: When: Where recorded:	Reduce to below -18°C within x hours. (EC (F&FP) O Schedule 5 subclause 21.1)	Individual Corrective Actions will need to be considered for each hazard.

Example 2(a) – Live fish packing Establishment: Live Coral Trout

Step 1. Identify and list all of the products you process - Live Coral Trout

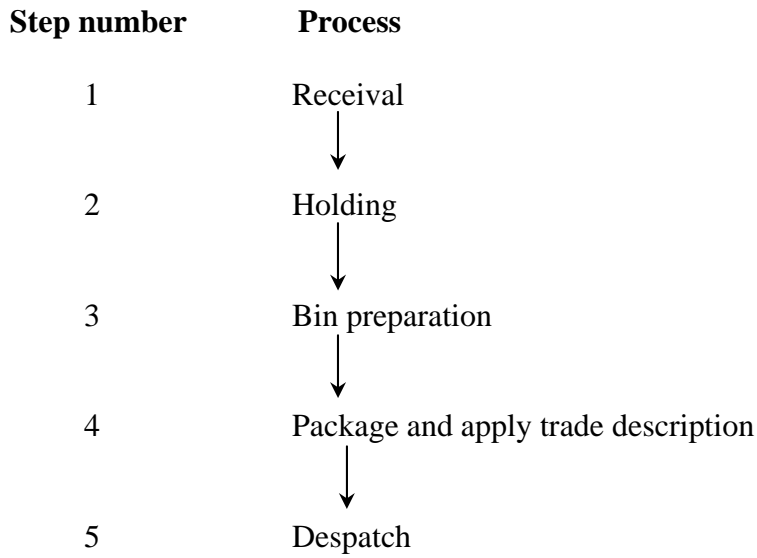
Step 2. Complete a Product Description for each product

Product Description	
Product Raw Material	Live Coral Trout <i>Plectropomus</i> species
Source of Raw Material	Great Barrier Reef
Ingredients added (including food additives)	Approved chemicals
Processing Method / Preservation Method	Nil
Final Product	Live Coral Trout
Intended Use	Product is intended to be cooked by the end consumer
Packaging	Aerated bulk bins
Transport	Transported by truck and air at ambient temperature
Storage	Large tanks with filtrated seawater
Finished product requirements Australia	List product requirements See Schedule 6 & FSANZ Food Standards Code for finished product requirements for microbiological, chemical requirements etc
Finished product requirements (Importing Country)	List product requirements of importing country as applicable
Product Label	Product label must bear an accurate Trade description – see AQIS Guideline “Trade Description – a Guideline to Compliance with the Export Control (Fish & Fish Products) Orders 2005

Step 3. Develop process flow diagrams for these products

Step 4. Verify the flow diagram - Carry out operations as normal and confirm that each of the steps of processing is documented, in the correct order, on the diagram.

Process Flow Diagram: Live coral trout



Process Flow Diagram Verified by:.....Signed:.....

Date:.....

Step 5. Complete a Hazard Analysis

Step 6. Complete a HACCP summary Table

Step 7. Keep Records

Example Hazard Analysis Worksheet – Live Coral Trout

1. Processing Step	2. Potential Hazard	3. Is the potential hazard significant?	4. Justification for inclusion or exclusion as a significant hazard.	5. What can be done to prevent the hazard in column 3 from occurring?	6. Critical Control Point for food safety? Yes/no (Determined using CCP decision tree)*	7. Verification Procedures
1. Receival	BIOLOGICAL Ciguatera	YES	Product containing toxins are not fit for human consumption	Do not source or receive fish from affected areas and do not accept large fish or prohibited species	YES	A verification procedure is required to confirm whether the control is working. Examples include: <ul style="list-style-type: none"> • Calibrating equipment • Testing samples of product • Reviewing records For Example: Product testing on a regular basis to verify that chemicals used in accordance with manufacturers instructions results in a product that meets required product standards (chemical)
	BIOLOGICAL Diseased or dead product	NO	A work procedure outlines what staff are required to do	Follow work procedure	NO**	
2. Holding	BIOLOGICAL Microbiological Contamination (Water / ice)	NO	Legislation outlines what is required (See Schedule 4 subclause 14 – 17) and Part 3 of this Guideline	Follow legislative requirements	NO**	<ul style="list-style-type: none"> • Calibrating equipment • Testing samples of product • Reviewing records For Example: Product testing on a regular basis to verify that chemicals used in accordance with manufacturers instructions results in a product that meets required product standards (chemical)
	CHEMICAL Chemical residue	May be - depending what chemicals may be added	Potential consumption of fish before the allowable withholding period is complete.	Use chemicals registered for use by APVMA. Follow manufacturer's directions to ensure that <i>Food Standards Code</i> levels are not exceeded in product	May be - depending what chemicals may be added to Holding Tank	
3. Bin preparation	CHEMICAL Use of prohibited chemicals and or misuse of approved chemicals	YES	Potential consumption of fish before the allowable withholding period is complete.	Follow legislative requirements	YES	<ul style="list-style-type: none"> • Calibrating equipment • Testing samples of product • Reviewing records For Example: Product testing on a regular basis to verify that chemicals used in accordance with manufacturers instructions results in a product that meets required product standards (chemical)
4. Package and apply trade description	No food safety hazards identified	NO	Legislation outlines what is required (See Schedule 7 and part 4 of Schedule 5)	Follow legislative requirements	NO**	
5. Despatch	BIOLOGICAL Microbiological	NO	Hazard can be controlled by a work procedure	Ensure the product is transported under appropriate temperature control (record & review temperature records)	NO**	

* Determining the Critical Control Points (CCPs) is covered in the second HACCP principle.

Example HACCP Table - Live Coral Trout

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action (Include where recorded)
1. Receival	Ciguatera	Catch Area Fish Species	Who: What: When: Where recorded:	Fish only sourced from unpolluted/non-toxic waters (EC (F&FP) O Schedule 5, subclauses 1.1 - 2.2) Do not accept large fish or prohibited species (Refer Industry Codes of Practice)	Corrective Actions must be developed to ensure that the Critical Limits are brought back under control should a deviation occur. Corrective Actions should identify:
2. Holding	Use of prohibited chemicals and / or misuse of approved chemicals	Selection of chemicals & chemical usage	Who: What: When: Where recorded:	Use only chemicals registered for use by APVMA. Follow manufacturer's directions to ensure that <i>Food Standards Code</i> levels are not exceeded in product	<ul style="list-style-type: none"> • What action is to be taken • How affected product is to be identified • How the status of product for export is to be determined • Who is responsible for taking the Corrective Action • What measures are going to be taken to ensure that the deviation does not occur again? • Where the above information is to be recorded.
3. Bin Preparation	Use of prohibited chemicals and / or misuse of approved chemicals	Selection of chemicals & chemical usage	Who: What: When: Where recorded:	Use only chemicals registered for use by APVMA. Follow manufacturer's directions to ensure that <i>Food Standards Code</i> levels are not exceeded in product	<ul style="list-style-type: none"> • Where the above information is to be recorded. <p>Individual Corrective Actions will need to be considered for each hazard.</p>

Example 2(b) – Live fish packing Establishment: Live Pacific Oysters

(Land Based Registered Establishment)

Step 1. Identify and list all of the products you process - Live Pacific Oysters

Step. 2 Complete a product description for each product

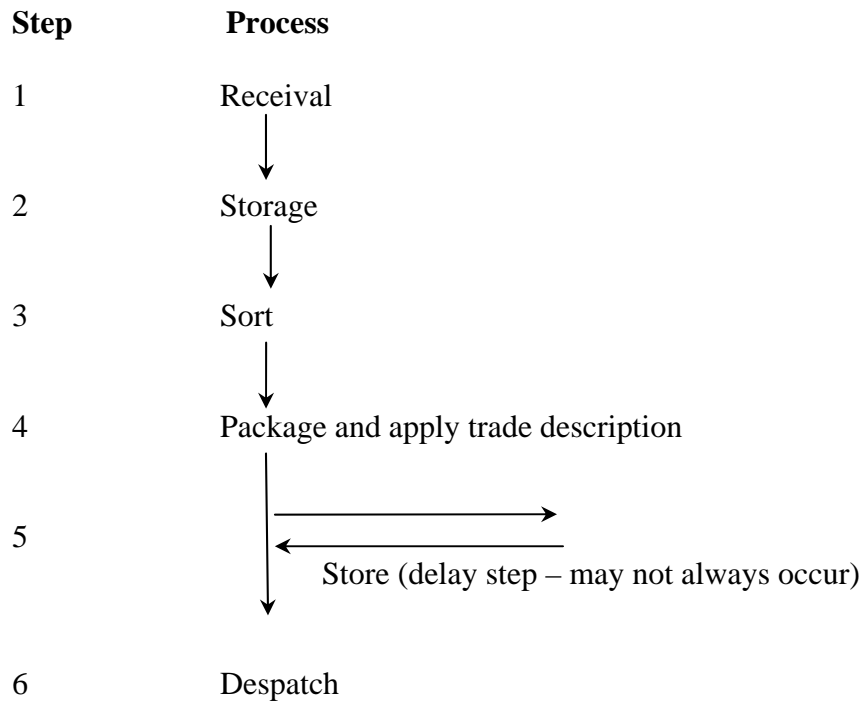
Product Description	
Product Raw Material	Pacific Oysters <i>Crassostrea gigas</i>
Source of Raw Material	Franklin Harbour
Ingredients added (Including food additives)	Nil
Processing Method / Preservation Method	Chilling
Final Product	Live Pacific Oysters
Intended Use	Product is intended to be eaten raw by the end consumer
Packaging	Plastic liner in styrene boxes
Transport	Transported by an Approved Supplier, by road under temperature control
Storage	Product to be stored below 5°C
Finished product requirements Australia	List Finished product requirements See Schedule 6 / FSANZ Food Standards Code for finished product requirements for microbiological, chemical requirements etc
Finished product requirements (Importing Country)	List Finished product requirements of importing country as applicable
Product Label	Product label must bear an accurate Trade description – see AQIS Guideline “Trade Description – a Guideline to compliance with the <i>Export Control (Fish & Fish Products) Orders 2005</i>

Step 3. Develop process flow diagrams for these products

Note: A depuration step may be required if sourcing from certain areas.

Step 4. Verify the flow diagram - Carry out operations as normal and confirm that each of the steps of processing is documented, in the correct order, on the diagram.

Process flowchart: Live Pacific Oysters



Process Flow Diagram Verified by:.....Signed:.....

Date:.....

Step 5. Complete a Hazard Analysis

Step 6. Complete a HACCP summary Table

Step 7. Keep Records

Example Hazard Analysis Worksheet - Live Pacific Oysters

1. Processing Step	2. Potential Hazard	3. Is the potential hazard significant?	4. Justification for inclusion or exclusion as a significant hazard.	5. What can be done to prevent the hazard in column 3 from occurring?	6. Critical Control Point for food safety? Yes/no (Determined using CCP decision tree)*
1. Receival	BIOLOGICAL Microbiological growth	YES	Potential for pathogenic bacteria to grow if product not handled correctly or kept at appropriate temperature	Product to be received at below 10°C within 24 hours of harvest (Refer to ASQAP) ^{††}	YES
	BIOLOGICAL Microbiological contamination – toxins / biological Hazards Diseased product	YES	Product containing toxins are not fit for human consumption Product not sourced from an approved harvest area could potentially harbour biological hazards and / or toxins	Do not source fish from affected areas Source from an approved supplier; ensure product is tagged and harvested from an open lease.	YES
	CHEMICAL Chemical residue	NO	A work procedure outlines what staff are required to do	Follow work procedure	NO**
2. Storage	BIOLOGICAL Microbiological growth	YES	Potential for pathogenic bacteria to grow if product not kept live at appropriate temperature	Store under refrigeration temperature -1°C to 5°C or seek alternative compliance for other temperatures	YES
3. Sort	BIOLOGICAL Microbiological growth (Dead, gaping product)	NO	Hazard can be controlled by a work procedure.	Removal of all dead, gaping, damaged product by trained staff	NO**
4. Package & apply trade description	No food safety hazards identified	NO	Legislation outlines what is required (See Schedule 7 and part 4 of Schedule 5)	Follow legislative requirements	NO**
5. Storage	BIOLOGICAL Microbiological growth	YES	Potential for pathogenic bacteria to grow if product not kept live at appropriate temperature	Store under refrigeration temperature -1°C to 5°C or seek alternative compliance for other temperatures	YES
6. Despatch	BIOLOGICAL Microbiological	NO	Hazard can be controlled by a work procedure	Ensure the product is transported under appropriate temperature control (keep, and refer to temperature records)	NO**

* Determining the Critical Control Points (CCPs) is covered in the second HACCP principle.

^{††} ASQAP Australian Shellfish Quality Assurance Program available from AQIS website at www.aqis.gov.au/fish

** These hazards can be controlled by meeting the operational hygiene requirements of Schedule 4 of the Orders through a work procedure consistent with Good Manufacturing Practice (GMP) (refer to subclause 3.4 of Schedule 2)

Example HACCP Table - Live Pacific Oysters

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action (Include where recorded)
1. Receival	Microbiological growth (Oyster mortality)	Handling procedure and temperature of product	Who: What: When: Where recorded:	Product to be received at 10°C or less within 24 hours of harvest. Refer to Australian Shellfish Quality Assurance Program (ASQAP) ^{‡‡}	Corrective Actions must developed to ensure that the Critical Limits are brought back under control should a deviation occur. Corrective Actions should identify: <ul style="list-style-type: none"> • What action is to be taken • How affected product is to be identified • How the status of product for export is to be determined • Who is responsible for taking the Corrective Action
	Microbiological contamination Product not tagged, harvested from an open lease and sourced from approved supplier	Harvest Area, Supplier and documentation – products must be from Approved Suppliers and clearly tagged from an open lease supplier	Who: What: When: Where recorded:	Product must be sourced from an approved harvest area that is open at the time of harvest. Product must have correct tagging (Refer to ASQAP).	
2. Storage	Microbiological growth (Oyster mortality)	Handling procedure and storage temperature of product	Who: What: When: Where recorded:	Store under refrigeration temperature -1°C to 5°C or seek alternative compliance for other temperatures.	<ul style="list-style-type: none"> • What measures are going to be taken to ensure that the deviation does not occur again? • Where the above information is to be recorded. Individual Corrective Actions will need to be considered for each hazard.
5. Storage	Microbiological growth (Oyster mortality)	Handling procedure and storage temperature of product	Who: What: When: Where recorded:	Store under refrigeration temperature -1°C to 5°C or seek alternative compliance for other temperatures.	

^{‡‡} ASQAP Australian Shellfish Quality Assurance Program – Export Standards 2004 available from AQIS website at www.aqis.gov.au/fish

Example 3 – Cold store: fish and fish products

Step 1. Identify and list all of the products you store

For example:

- Frozen Fish & Fish products
- Chilled fish & Fish Products
- Ambient temperature –(Dried / Canned) Fish & Fish Products

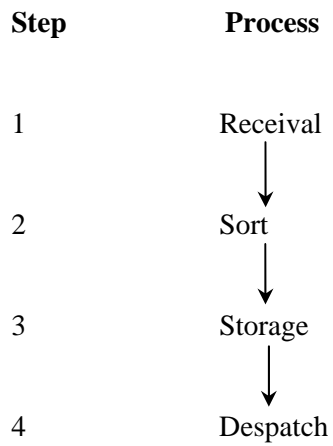
Step 2. Complete a Product Description for each method of storage / preservation

Product Description	
Product Raw Material	Chilled Fish & Fish products received from various Registered Establishments including: Chilled whole raw prawns Chilled
Source of Raw Material	South East Queensland
Ingredients added (Including food additives)	As per product labelling
Processing Method / Preservation Method	Chilling
Final Product	Various – as per inventory lists / stock register
Intended Use	As per product labelling
Packaging	Various including: Plastic liner in cardboard carton
Transport	Transported by road under temperature control
Storage	Product stored at between -1°C and 5°C
Finished product requirements Australia	List Finished product requirements See Schedule 6 / FSANZ Food Standards Code for finished product requirements for microbiological, chemical requirements etc
Finished product requirements (Importing Country)	List Finished product requirements of importing country as applicable
Product Label	Product label must bear an accurate Trade description – see AQIS Guideline “Trade Description – a Guideline to Compliance with the <i>Export Control (Fish & Fish Products) Orders 2005</i>

Step 3. Develop process flow diagrams for these products

Step 4. Verify the flow diagram - Carry out operations as normal and confirm that each of the steps of processing is documented, in the correct order, on the diagram

Process flowchart: Chilled fish & fish products



Process Flow Diagram Verified by:.....Signed:.....

Date:.....

Step 5. Complete a Hazard Analysis

Step 6. Complete a HACCP summary table

Step 7. Keep Records

Example Hazard Analysis Worksheet - Cold Store: Fish and Fish Products

1. Processing Step	2. Potential Hazard	3. Is the potential hazard significant?	4. Justification for inclusion or exclusion as a significant hazard.	5. What can be done to prevent the hazard in column 3 from occurring?	6. Critical Control Point for food safety? Yes/no (Determined using CCP decision tree)*	7. Verification Procedures
Receival	BIOLOGICAL Microbiological growth	YES	Potential for pathogenic growth if product not kept under temperature control	Ensure the product is received at between -1°C and 5°C	YES	<p>A verification procedure is required to confirm whether the control is working.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • Calibrating equipment • Testing samples of product • Reviewing records <p>For Example: Product testing on a regular basis to verify that chilling storage temps will result in a product that will meet product standards (microbiological) May be required by EU listed Establishments</p>
Sort	No food safety hazards identified	NO	A work procedure outlines what staff are required to do	Follow work procedure	NO**	
Storage	BIOLOGICAL Microbiological growth	YES	Potential for pathogenic growth if product not kept under temperature control	Ensure the product is kept between -1°C and 5°C	YES	
Despatch	BIOLOGICAL Microbiological growth	NO	Hazard can be controlled by a work procedure	Follow work procedure	NO**	

* Determining the Critical Control Points (CCPs) is covered in the second HACCP principle.

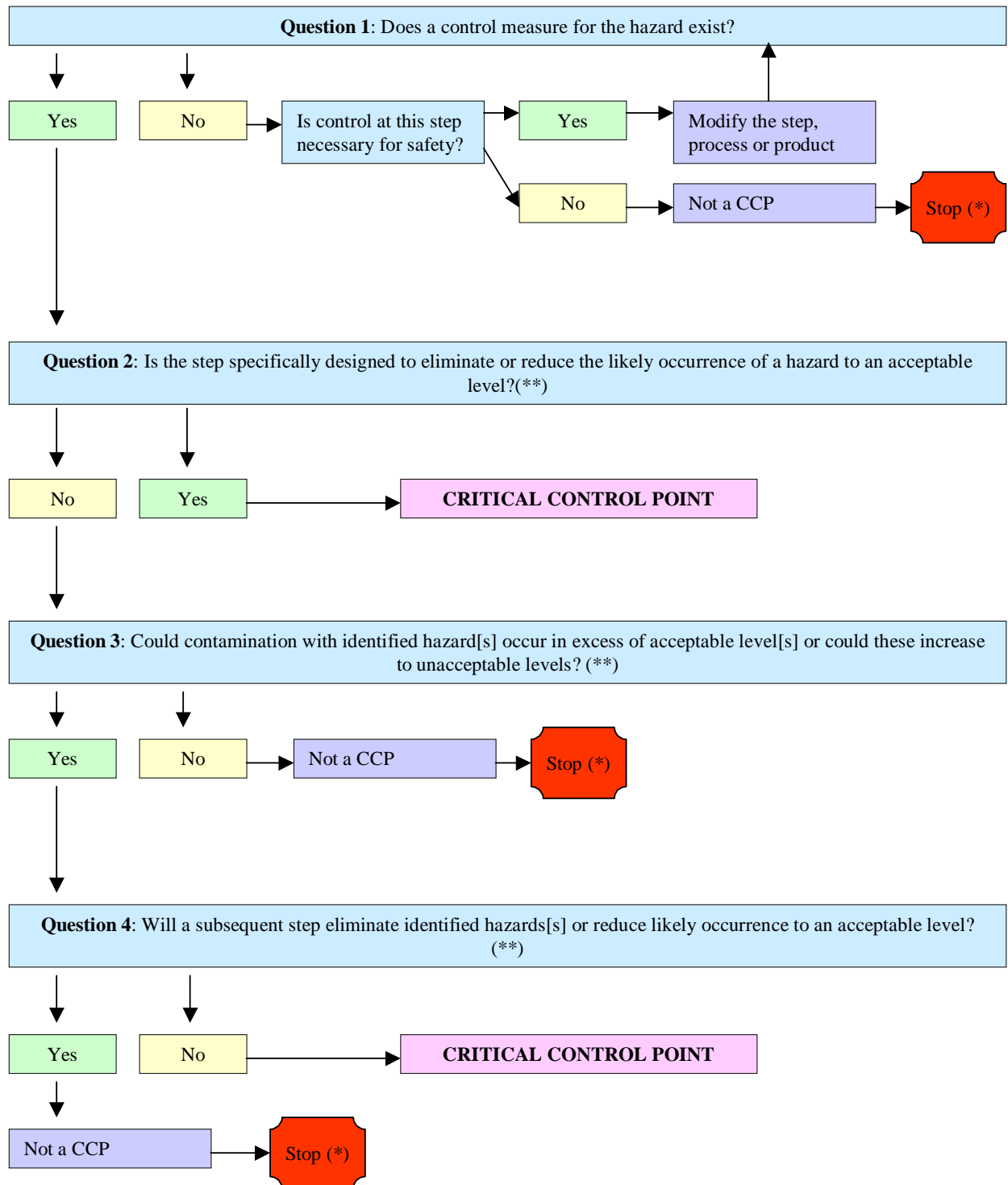
** These hazards can be controlled by meeting the operational hygiene requirements of Schedule 4 of the Orders through a work procedure consistent with Good Manufacturing Practice (GMP) (refer to subclause 3.4 of Schedule 2)

Example HACCP Table - Cold Store: Fish and Fish Products

Critical Step	Potential Hazard	Critical Control Point (Factor)	Monitoring Procedure (Include frequency, person responsible, where recorded)	Critical Limits	Corrective Action (Include where recorded)
1. Receival	Microbial growth	Product temperature and time	Who: What: When: Where recorded:	Chilled product to be received between -1°C and 5°C (EC (F&FP) O Schedule 5 subclause 18.1).	<p>Corrective Actions must developed to ensure that the Critical Limits are brought back under control should a deviation occur.</p> <p>Corrective Actions should identify:</p>
3. Storage	Microbial growth	Product temperature and time	Who: What: When: Where recorded:	Chilled product to be kept between -1°C and 5°C (EC (F&FP) O Schedule 5 subclause 18.1).	<ul style="list-style-type: none"> • What action is to be taken • How affected product is to be identified • How the status of product for export is to be determined • Who is responsible for taking the Corrective Action • What measures are going to be taken to ensure that the deviation does not occur again? • Where the above information is to be recorded. <p>Individual Corrective Actions will need to be considered for each hazard.</p>

Appendix 1 – Example of decision tree to identify CCPs

(Answer the questions in sequence)



(*) Proceed to the next identified hazard as per your hazard analysis worksheet

(**) Acceptable and unacceptable levels need to be defined in the HACCP Plan.

Reference: Codex Alimentarius CAC/RCP 1-1969, Rev. 3-1997, Amd. (1999)

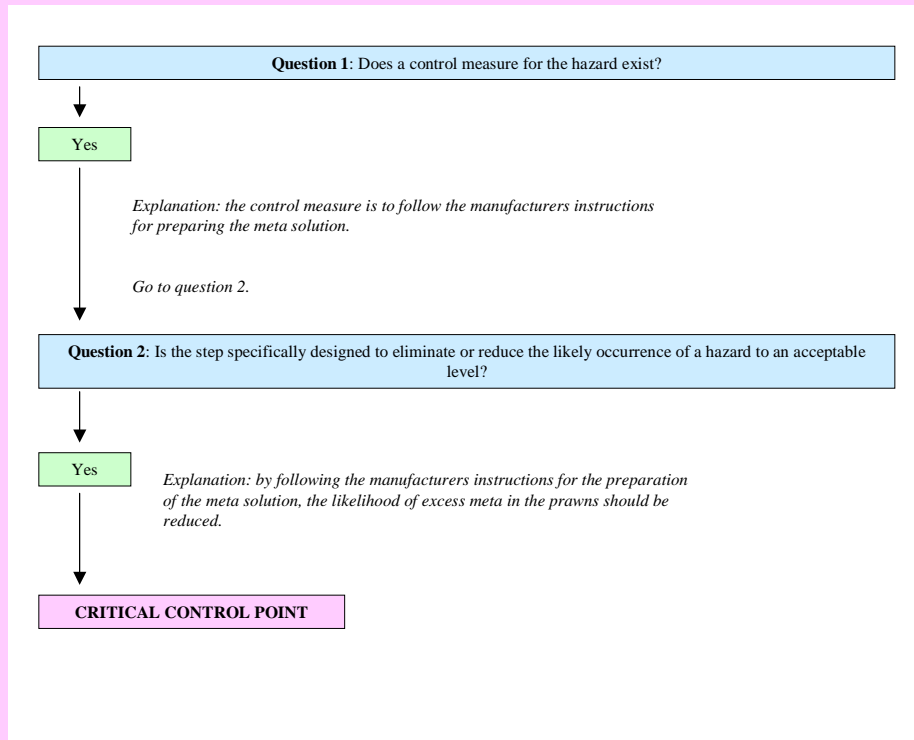
Appendix 2 - Example identification of a CCP

Example

Process Step: Dipping prawns in a sodium metabisulphite (meta) solution.

Potential Hazard: Excess SO₂ (Sulphur dioxide) in the prawns has been identified as a potential hazard.

Using the CCP decision tree (Appendix 4)...



Following the CCP decision tree, this step is a critical control point.

Appendix 3 - Definitions

Approved arrangement: An arrangement approved under clause 14 of Schedule 2 of the *Export Control (Fish & Fish Products) Orders 2005*.

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 or 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 factor, practice, procedure, process or location that can be controlled in order to prevent, control, eliminate or reduce a hazard, or minimise the likelihood of its occurrence.

Critical limit: The limit to which a hazard must be controlled to prevent, control, eliminate or reduce to an acceptable level the occurrence of the hazard.

Critical step: A step from a process flow chart that is associated with a CCP, which if not controlled, may give rise to a hazard.

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: Hazard Analysis Critical Control Point. A system that identifies evaluates and controls hazards, which are significant for food safety. *

HACCP plan: A document prepared in accordance with the HACCP principles to ensure the control of hazards, which are significant for food safety. *

Hazard: A biological, chemical or physical agent in, or a condition of, food that has potential to cause an adverse health affect.

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: To conduct a planned sequence of observations or measurements to assess whether the critical control point is under control.

Validation: Providing evidence to demonstrate the effectiveness of a system of controls.

Verification: Applying methods, procedures, tests and other evaluations in addition to monitoring to determine whether a requirement is complied with.

All definitions from order 8 of the *Export Control (Fish & Fish Products) Orders 2005*, except those denoted by * which are from CAC/RCP 1-1969, Rev. 3-1997, Amd. (1999) Annex.