Ministry for Primary Industries
Manatū Ahu Matua

Operational Code

Processing of Bee Products

[Document Date]

Issued by the Ministry for Primary Industries

New Zealand Government

TITLE

Operational Code: Processing of Bee Products

COMMENCEMENT

This Operational Code is effective from [Effective Date]

ISSUING BODY

This Operational Code is issued by the Ministry for Primary Industries

Dated at Wellington this day of

Nigel Lucas
Acting Manager Animal Products
Ministry for Primary Industries
(acting under delegated authority of the Director General)

Contact for further information
Ministry for Primary Industries (MPI)
Regulation & Assurance Branch
Food Regulation Directorate
PO Box 2526
Wellington 6140
Email: animal.products@mpi.govt.nz

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Introduction

(1) This introduction is not part of the Operational Code, but is intended to indicate its general effect.

(2) This Operational Code (Code) assists bee product operators to:
- a) comply with the requirements of the Animal Products Act 1999 (APA) and relevant subordinate legislation; and
- b) produce edible bee products that are safe and suitable for their purpose.

(3) It has been developed by the Ministry for Primary Industries (MPI), in consultation with industry.

Purpose

(1) This Code has been developed to provide guidance for meeting the requirements for the development, registration and implementation of a risk management programme (RMP).

Background

(1) This Code applies to businesses involved in the secondary processing of edible bee products which covers the extraction of honey and the processing, packing and storage of honey and other edible bee products.

(2) The ~~redevelopment~~ review of the~~is~~ Code is currently being undertaken to include more products and processes e.g. royal jelly, bee venom collection etc.~~:~~ General updates and minor edits have also been made.

~~a) update it in line with changes in legislation;~~
~~b) combine the existing parts into one document; and~~
~~c) align its format with MPI's new standardised templates for documents as an Operational Code.~~

(3) This Code does not apply to the primary processing of bee products and primary processing does not require an RMP. Primary processing of bee products includes:

- a) beehive management including the rearing of queen bees for royal jelly production;
- b) collection of honey supers, temporary storage of supers prior to delivery to the extraction facility and transport to the extraction facility;
- c) scraping or collection of raw propolis from boxes or mats, bagging and storage of raw propolis and transport to an extraction facility; ~~and~~
- d) collection of pollen, bagging, holding in a freezer by the beekeeper and transport to a pollen drying/processing facility; and
- ~~d)~~e) the collection of bee venom and transport to a processing facility~~.~~

(4) Honey processors who operate under the Food Act 2014 ~~should~~ can choose to use this the Code as guidance material where relevant to their operation e.g. national programme level 1 extractors and packers of honey for the domestic market.

~~(5) Additional processes and/or products will be included in this document as and when they are completed.~~

~~(6)~~(5) This Code has been developed based on New Zealand requirements only. It does not include overseas market access requirements or general requirements for export – however, where appropriate the interface with export requirements has been mentioned to assist operators in their understanding~~.~~

Who should read this Operational Code?

This Code should be read by:

- a) bee products RMP operators;
- b) transport operators;

c) evaluators;
d) regulators; and
e) verifiers.

Why is this important?

(1) An operator can develop and implement their RMP in accordance with this Code. This will:

a) ensure that the operator complies with acceptable industry practices and procedures;
b) ensure that the operator meets relevant regulatory requirements; and
c) simplify and reduce the cost of developing and evaluating the RMP.

(2) This Code clarifies MPI's expectations on how regulatory requirements may be met. This will assist operators and RMP verifiers and evaluators to have a consistent understanding of the requirements and their applications.

(3) A Code is intended to be a guide on how to meet legislative requirements. If an RMP operator incorporates the whole or part(s) of the Code into their RMP, then the incorporated part(s) of the Code becomes mandatory (i.e. it is no longer a guide) and legally enforceable. This means a 'should' becomes a 'must' except for content in guidance boxes or guidance tables, or if an operator excludes that clause from their RMP when incorporating the Code.

(4) An RMP Operators Resource Toolkit has been developed with example forms and procedures to assist operators in developing or improving their RMP. There are some generic as well as specific bee product examples included in this toolkit. The Toolkit is referenced throughout this Code.

(5) ~~An~~ RMP Template~~s~~ ~~has~~ have been developed and designed to complement this Code and ~~is~~ are published as ~~a~~ separate document~~s~~. Using the template is one way of meeting the RMP requirements.

(6) Bee product processors may use alternative approaches, provided all relevant regulatory requirements are met. Those who wish to use an alternative approach should refer to the RMP Manual for guidance.

Document history

(1) This document replaces the MPI Operational Code ~~of Practice~~: Processing of Bee Products ~~Parts 1-5, 2005-6~~2017.

(2) ~~This revised version also reflects the changes made to the Animal Products Notice: Specifications for Products Intended for Human Consumption issued 1 March 2016.~~ This document now includes more bee products and processes and coincides with the revision of the RMP Templates.

~~(2)~~(3) Other general updates have also been made.

Main legislation

(1) Below is a summary of the main legislation (including requirements under the APA) that is most applicable to bee product processing, however this list is not exhaustive. The web links to documents were current at the date of issue of this Code. To access all current legislation go to the general link: https://www.mpi.govt.nz/law-and-policy/requirements/animal-products-act-notices/.

(2) The main legislation applicable to bee product operators includes, as appropriate:

a) Animal Products Act 1999;
b) Animal Product Regulations 2000;
c) Animal Products Notice: Specifications for Products Intended for Human Consumption 2016;
d) Animal Products (Risk Management Programme Specifications) Notice 2008;
e) Australia New Zealand Food Standards Code;
f) Agricultural Compounds and Veterinary Medicines Act 1997;
g) Animal Products Notice: General Export Requirements for Bee Products 2018 ~~Animal Products (Harvest Statement and Tutin Requirements for Export Bee Products) Notice 2010~~;
h) Food Standard: Tutin in Honey 2016;

i) Animal Products Notice: Official Assurances Specifications for Animal and Animal Products 2017;
j) Animal Products Notice: Regulated Control Scheme – Monitoring of Specified Substances in Bee Products for Export 2017; and
k) Biosecurity (National American Foulbrood Pest Management Plan) Order 1998.

(3) A complete list of legal requirements, guidance documents and forms that are relevant to the processing of bee products are listed in the Honey and Bee Products Road Map.

(4) Information specific to bee products is available on the MPI website for Honey & bee products.

Do you want to export?

(1) This Code covers the New Zealand standard for secondary processing of honey and bee products under the APA. Export requirements are additional to the requirements described in this Code.

(2) If you are wanting to export honey or bee products, you are responsible for:

a) ensuring you meet relevant NZ standards (e.g. Food Act 2014 or APA);
b) complying with Official Assurances Specifications (OAS) for Animal Material and Animal Products;
c) complying with the importing country's legislation and eligibility requirements (Overseas Market Access Requirements / OMARs); and
d) registering as an exporter.

(3) Further information can be found on the MPI website at: http://www.mpi.govt.nz/exporting/food/honey-and-bee-products/.

(4) If you have questions about exporting honey and bee products, email exporterhelp@mpi.govt.nz.

(5) MPI has published the booklet "Meeting the rules for exporting. A guide to the honey and bee products export chain" on the MPI website.

RMP templates for bee products and storage

The RMP templates have been reviewed and have now been produced in a new format and covering more processes/activities. RMP templates are an alternative to developing a custom RMP and do not require an evaluation step. Refer to the RMP Manual for further guidance.

The RMP Template for Bee Products covers:

- Extraction of honey
- Mobile extraction of honey
- Processing of honey
- Processing of flavoured honey
- Processing of comb
- Processing of pollen
- Processing of propolis
- Beeswax processing
- Royal jelly collection and processing
- Bee venom processing
- Storage of bee products
- Transport of bee products

The RMP Template for Storage of Bulk Honey covers:

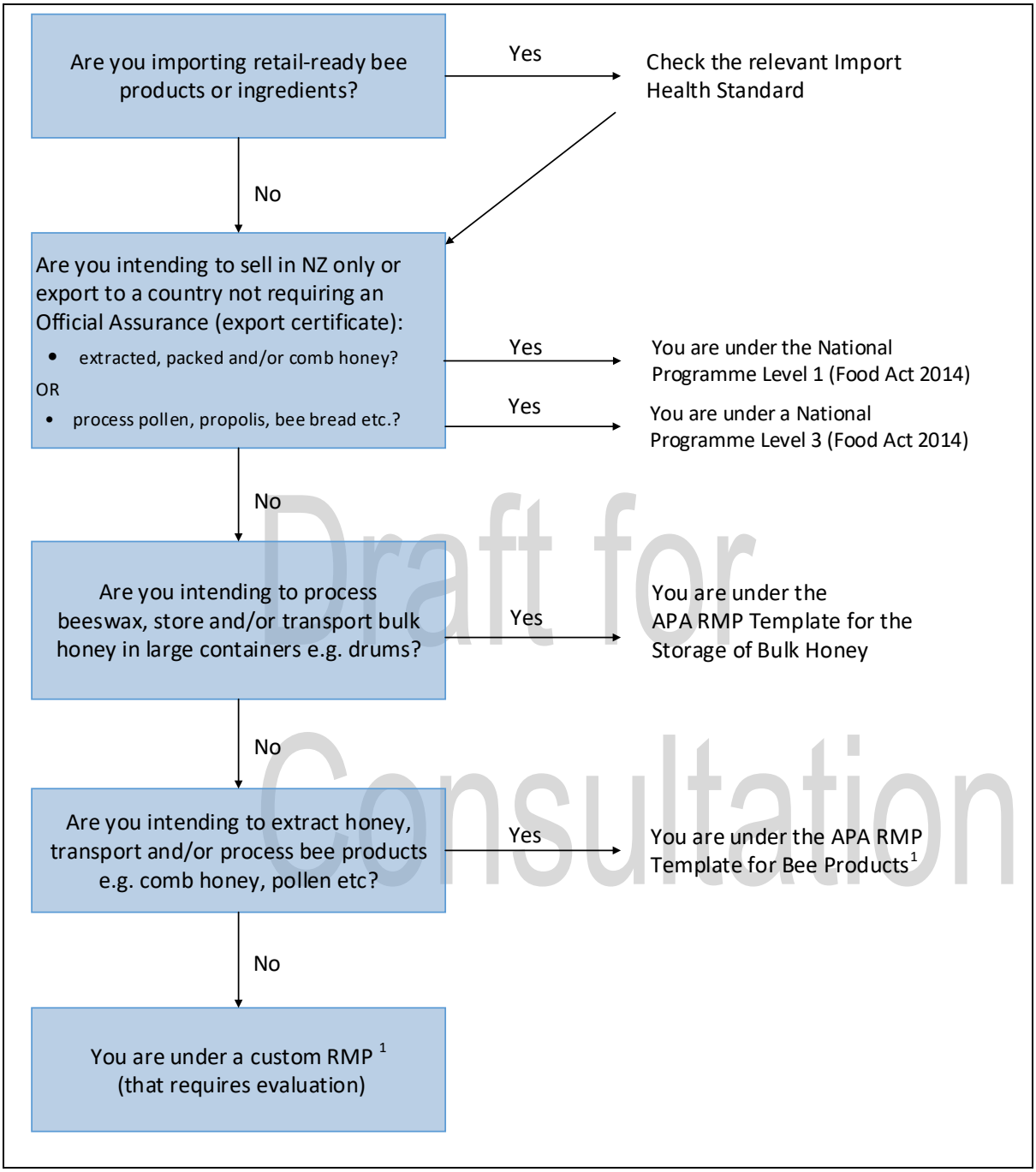
- Storage of bulk honey
- Packing / re-packing in a store
- Transport of bulk honey

Click on the links provided or go to the MPI website and search on “RMP template honey” for either of the two templates.

Where Do I Fit?

Food Act or Animal Products Act?

Figure 1: Guidance decision tree for deciding what risk management tool to use



1. All other processes/activities not covered by the Code will need an evaluation step and a custom RMP.

Part 1: Structure of this Code

1.1 General

(1) This Code is separated into Parts. Each Part specifies requirements and procedures relating to different aspects of bee products production and processing.

(2) This Code sets out the following:

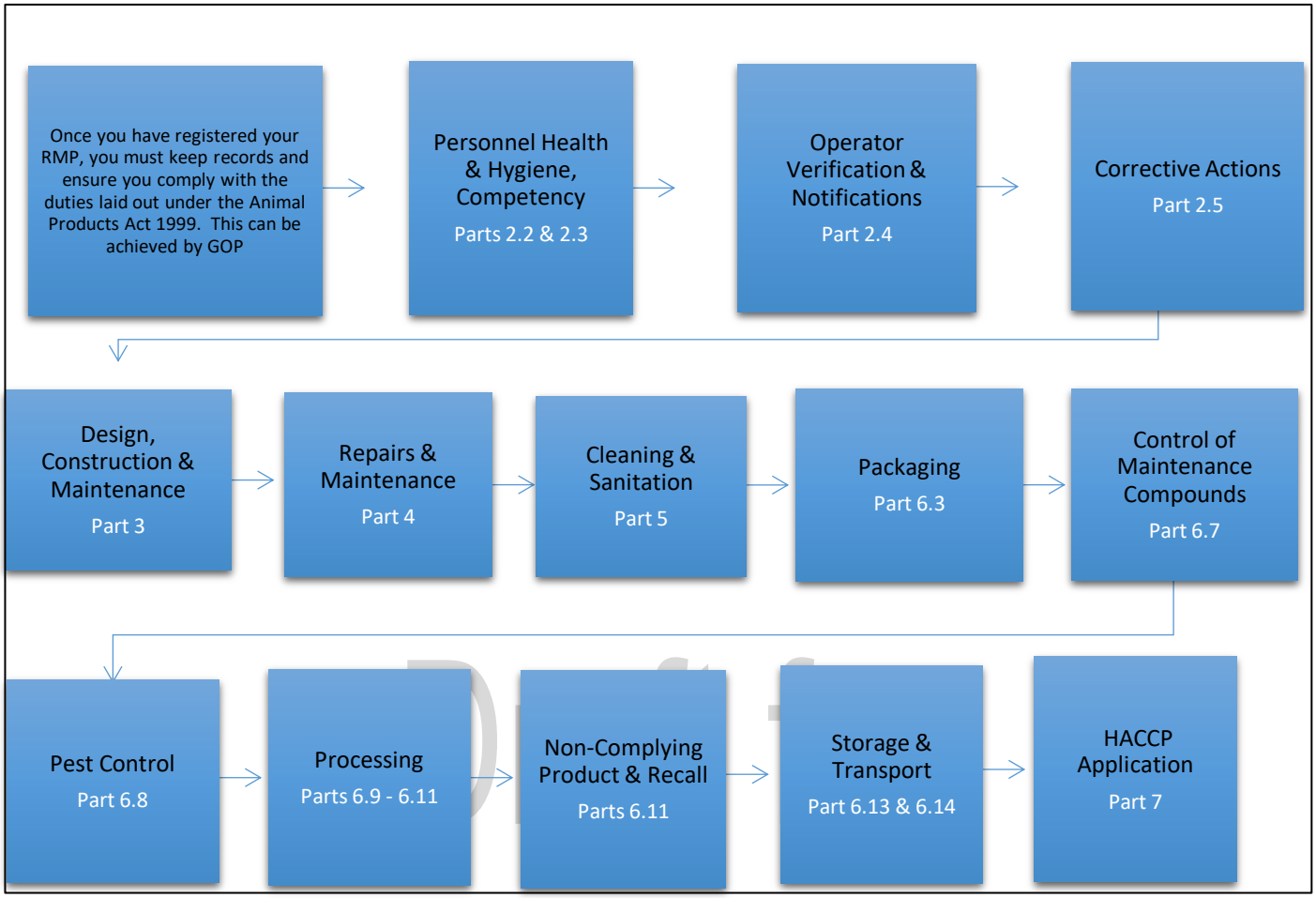
a) Part 1: Structure of this Code;
b) Part 2: General Requirements;
c) Part 3: Design, Construction and Maintenance of Buildings, Facilities and Equipment;
d) Part 4: Repairs and Maintenance;
e) Part 5: Cleaning and Sanitation;
f) Part 6: Supporting Systems;
g) Part 7: HACCP application; and
h) Part 8: Identification and Control of Risk Factors Related to Wholesomeness and Labelling.

(3) Good Operating Practice (GOP) is essential for the consistent production of edible bee products that are fit for their intended purpose and that meet relevant regulatory requirements. This Code provides guidance on hygienic practices and process controls that directly or indirectly impact on the safety and suitability of products. Compliance with these measures will assist operators meet the requirements of the APA, particularly the current version of the Animal Products Notice: Specifications for Products Intended for Human Consumption 2016.

(4) GOP is the foundation for Hazard Analysis and Critical Control Point (HACCP) and of Risk management Programmes (RMPs). The HACCP approach explained in Part 7 of this Code is based on the expectation that GOP is effectively implemented prior to the application of HACCP principles.

(5) GOP can also be described as Supporting Systems.

Figure 2: Flow diagram of some of the parts of this Code



1.2 Layout of Parts

(1) Parts 2-6 are generally laid out with the following subheadings:

Purpose and Scope

This describes the purpose and scope of application.

General requirements and procedures

General requirements, recommended procedures and guidance information are distinctly differentiated in this document.

A regulatory requirement is identified by having a citation to the specific legislation from which the requirement is derived from, at the end of the relevant sentence or clause. The word "**must**" is often used to indicate its mandatory status. For example:

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

In many cases, the mandatory requirements have been paraphrased for context. Operators should refer to the cited legislation for the actual wording of the legal requirement.

The abbreviations used for legislation cited in this document are:

APA	Animal Products Act 1999
AP Reg	Animal Product Regulations 2000
HC Spec	Animal Products Notice: Specifications for Products Intended for Human Consumption 2016
RMP Spec	Animal Products (Risk Management Programme Specifications) Notice 2008
FSC	Australia New Zealand Food Standards Code
ACVM	Agricultural Compounds and Veterinary Medicines Act 1997
OAS	Animal Products Notice: Official Assurances Specifications for Animal and Animal Products 2017
GREX	Animal Products Notice: General Export Requirements for Bee Products 2018

Procedures

There may be cases when the operator may decide to use an alternative process, procedure or parameter that is not provided for in this Code (e.g. when new technology becomes available). The operator must be able to demonstrate the effectiveness of any alternative to consistently meet all relevant regulatory requirements and produce products that are fit for their intended purpose (validation).

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). A protocol for the collection of data should be prepared by the operator as discussed in the RMP Manual.

The programmes covering hygiene and sanitation and RMP requirements (e.g. product recall) are expected to apply to the processing of all types of bee products. However, the process control procedures given in Part 6 only cover honey extracted in a premises, comb honey, dried pollen and royal jelly.

Field extraction of honey and processing of other types of bee products (e.g. honey and fruit blends, honey and velvet, propolis extract) are not specifically covered. The operator will, therefore, need to write their own process control procedures for these products. These procedures, together with any other required RMP documentation will need to be reviewed by an RMP Evaluator.

Guidance

> **Guidance**
> Guidance material is presented in a 'guidance box'. It provides explanatory information, examples or 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. Justification is not needed when deviating from guidance.

'Guidance' tables have been used for guidance material presented as a table. Requirements described in a table format are simply labelled as a 'Table' and immediately follow a legal citation. All tables are sequentially numbered throughout the Code.

Records

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

1.3 Resources for developing an RMP

(1) MPI has developed various resources to assist you when developing your RMP:

a) Risk Management Programme (RMP) Manual;
b) What is Validation? provides information on validation concepts;
c) other Operational Codes or Codes of Practice;
d) Standardisation of Hazard Analysis and Critical Control Point (HACCP);
e) MPI Hazard database has searchable information on food safety hazards that is reasonably likely to occur in New Zealand, including applicable regulatory limits and actions operators can take to control the hazards.

~~1.3~~1.4 Documentation of GOP

~~1.3.1~~1.4.1 Procedures

(1) The RMP Spec requires the operator to document sufficient procedures to ensure that GOP is applied. These procedures must cover:

a) the control of hazards and other risk factors;
b) any parameters to be met;
c) any monitoring procedures that are to be carried out; and
d) any corrective action procedures that are to be applied in the event of loss of control, including restoration of control; identification and disposition of affected animal material or animal product; and any measures to be taken to prevent reoccurrence of the loss of control [RMP Spec 11].

(2) When the Code does not cover a particular procedure required for the operator's RMP, the operator will need to write their own procedures. Sufficient detail should be given to:

a) ensure that managers and staff know what to do;
b) assist in staff training;
c) show how legislative requirements are met;
d) ensure clear understanding by external verifiers and accredited evaluators.

(3) Refer to 2.1 Document Control and Record Keeping for the contents of procedures.

~~1.3.2~~1.4.2 Procedures to be written

(1) Additional written procedures that should be documented by the operator include as appropriate:

a) document control e.g. amendments;
b) personal health, hygiene and training e.g. induction;
c) operator verification;
d) corrective action e.g. corrective action register;
e) potable water monitoring;
f) repairs and maintenance;
g) cleaning, sanitation and chemicals;
h) incoming product;
i) allergen controls;
j) inventory control;
k) pest control e.g. bait station monitoring;
l) process monitoring; and
m) storage and loadout.

~~1.4~~1.5 Definitions

(1) In this Code, unless the context otherwise requires:

APA means Animal Products Act 1999, and **the Act** when used in this document has a corresponding meaning

amenities includes toilets, wash rooms, locker rooms, change rooms, lunch / smoko rooms, and cafeterias

batch or **lot** means a homogenous quantity of relevant product manufactured during a discrete period of time~~, typically not exceeding 24 hours,~~ as part of one continuous process

bee pollen means pollen grains collected by worker bees from flowering plants, modified by bees and then used as a honeybee colony's source of protein

bee products means honey, honeydew honey, bee venom, bee pollen, beeswax, propolis, royal jelly and any other product collected by, or derived from, honey bees intended for human or animal consumption

bulk honey is the common term used in New Zealand for honey obtained by extraction, settling or straining, and with or without minimal heating. Bulk honey is usually packed in drums, IBC's etc.

clean, when used as a verb, means to remove visible contaminants from any surface

comb honey is honey presented in its original comb or portions thereof

competent means a person who has sufficient experience, training and knowledge to perform the nominated function

creamed honey is extracted honey that has been processed by controlled crystallization

critical limit means a criterion which separates acceptability from unacceptability at a critical control point, and includes acceptable parameters

critical measurement means a parameter identified as critical in a specification or a critical limit for a critical control point (CCP)

equipment includes:

a) the whole or any part of any utensil, machine, fitting, device, instrument, stamp, apparatus, table, or article, that is used or available for use in or for 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

extraction is the removal of honey from the comb by centrifugal force, gravity, straining or other means

facilities includes amenities, storage areas, and processing areas

formulated product means the combining of raw materials in specific proportions in a formulation to give the desired product qualities

flavoured honey means that an additional food ingredient(s), that may impart a flavour, is blended into (creamed) honey e.g. honey and lemon

good operating practice (GOP) means documented procedures relating to practices that:

a) are required to ensure products are fit for their intended purpose; and
b) are appropriate to the operating circumstances [RMP Spec definitions]

HACCP is a system which identifies, evaluates, and controls hazards which are significant for food safety

hazard means a biological, chemical, or physical agent that:

a) is in or has the potential to be in animal material or product, or is or has the potential to be a condition of animal material or product; and
b) leads or could lead to an adverse health effect on humans or animals [APA 4 Interpretation]

honey means the natural sweet substance produced by honey bees from the nectar of ~~blossoms~~ plants or from secretions of living parts of plants or excretions of plant sucking insects on the living parts of plants, which honey bees collect, transform and combine with specific substances of their own, deposit, dehydrate, store and leave in the honey comb to ripen and mature

honey box means any of the boxes in a beehive from which honey may be extracted, and **box** has the same meaning [GREX]

(honey) super means a box placed on ~~unit of~~ a beehive ~~which~~ that contains frames of surplus honey to be harvested by the apiarist or beekeeper~~,~~ and ~~box, honey box or~~ **super** has the same meaning [GREX]

human or animal consumption means that the product is intended to be eaten, or taken orally, or administered parenterally, or applied topically [APA 4 Interpretation]

internal audit (or internal verification audit) means a systematic examination of RMP processes/procedures to ensure compliance to requirements:

a) by obtaining factual evidence (e.g. records, visual inspection, reality check, etc.); and
b) carried out by an independent/impartial suitably skilled auditor

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

liquid honey is extracted honey that has been processed to make it completely liquid and free from visible crystals

maintenance compound means any substance:

a) used for maintaining, repairing, servicing, cleaning, or sanitising equipment or surfaces that may be the source of, or result in, contamination of bee product or associated things;
b) used for treating water; or
c) used for pest control

mobile extraction means the in-field extraction of honey in an enclosed transportable unit (e.g. specially designed trailer unit) whilst on a designated site for extraction

monitoring (monitor) means checking:

a) process parameters (e.g. moisture) are within the limits (both operator and regulatory);
b) documented procedures are being followed (e.g. handwashing procedures, load in checks etc.); and
c) records are correctly completed

monitoring records may include:

a) visual and other sensory assessment of equipment and the environment,
b) documented checks of the supporting systems and GOP in action

MPI means the Ministry for Primary Industries

non-complying (non-compliance) means any material or product or input that fails to comply with regulatory requirements

non-conforming (non-conformance) means any material or product or input that is suspected or known not to meet operator defined limits/criteria

official assurance has the meaning given by section 61(2) of the Act

operator means an operator of a premises or place who operates an animal product business that is subject to an RMP

operator defined limit or **food safety objective** means a measurable limit established by an RMP operator to manage the fitness for purpose of bee products

operator verification means the application of methods, procedures, tests and other checks by the RMP operator to confirm the ongoing:

a) compliance of the RMP to the legislative requirements; and
b) compliance of the operation to the RMP as written; and
c) applicability of the RMP 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 bee product; and
b) includes rigid materials such as cartons and containers where bee product is filled directly into the carton or container; and
c) includes any other material contained with, in, or attached to, the bee product (such as labels)

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 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 Notice: Specifications for Products Intended for Human Consumption 2016

propolis means a resinous substance collected by honey worker bees from the growing plants of trees and shrubs, modified by the bees and then used by the bees to seal their hive

protective clothing means special garments intended to prevent the contamination of animal material or animal product that are used as outer-wear by persons; and includes head coverings and footwear

regulatory limit means a measurable regulatory requirement that is critical to fitness for intended purpose of bee products

reticulation management plan means a documented programme that contains procedures for the management of the water reticulation system, (including pipework 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

risk management programme (RMP) means a programme designed to identify, control, manage and eliminate or minimise hazards and other risk factors in relation to the production and processing of animal material and products in order that the resulting animal product is fit for intended purpose [APA 4 Interpretation]

royal jelly means a substance produced by special glands in worker honeybees and used as a food for developing laval bees and to feed the queen bee

sanitary design:

a) in relation to any premises or place, facility, internal structure, equipment, or conveyance, means designed, constructed, and located so that it:

   i) 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
   ii) can be readily maintained, cleaned, sanitised, and sterilised where required, to ensure that risk factors from contaminants and pests are minimised; and
   iii) in relation to any equipment or access way in any processing area, means that the equipment or access way is designed, constructed and located so that it:

      1) is easily accessible for maintenance, cleaning, operation, checking, and inspection; and
      2) minimises the contact of contaminants with any animal material or animal product or other equipment; and
      3) prevents the harbouring or accumulation of any contaminants or pests

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

starter honey (or seed honey) means creamed honey that is added to a batch of creamed honey to control crystallization

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

topically means applying a substance externally to a part of the body of a human or animal [APA 4 Interpretation]

transport includes transport by road, rail, sea or air

transportation outer means a package that:

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

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

tutin means the chemical compound (CAS No 2571-22-4) that causes toxicity in honey and results from bees gathering honeydew exudates from passion vine hoppers that have been feeding on sap of tutu (*Coriaria arborea* or *Coriaria sarmentosa*) [GREX Definitions]

validation means a process by which evidence is obtained to demonstrate the process operating at defined parameters, is consistently capable of producing bee products that meet the requirements to be fit for purpose

verification means a review of operator's procedures and processes (including GOP) to ensure that these are in compliance with regulatory requirements and check that these are being followed. This should include the following:

a) monitoring records;
b) documented procedures;
c) reality checks of processing;
d) customer complaints; and
e) audit outcomes

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

(2) References in this Code to clauses, appendices and parts are references to clauses, appendices and parts of this Code unless otherwise stated.

(3) Any term or expression used in this Code that is defined in the Act or Regulations made under the Act and used, but not defined, in this Code has the same meaning as in the Act or Regulations.

Part 2: General requirements

2.1 Document control and record keeping

2.1.1 Purpose and scope

(1) To ensure that:

a) all RMP documents are managed under a document control system so they are current and authorised;
b) obsolete documents are removed from use; and
c) records are managed.

2.1.2 General requirements and procedures

(1) Operators must document the following in their RMP:

a) processing procedures;
b) product and process parameters;
c) procedures for monitoring and verifying compliance with established processing procedures and parameters - in particular, critical limits at identified critical control points; and
d) corrective actions for any non-compliance or deviation from any regulatory limit or operator-defined limit, procedures, and product and process parameters [RMP Spec 8, 9 and 11].

(2) Operators must maintain accurate records, particularly for the monitoring and verification of product and process parameters critical to product safety [RMP Spec 20 (2)].

(3) Include the following in each of the documented GOP programmes:

a) purpose and scope;
b) authorities and responsibilities;
c) materials and equipment, as applicable;
d) procedures (including monitoring, corrective action and operator verification);
e) records (including forms / check sheets); and
f) references to other relevant documents as applicable.

(4) Every document or part of a document that forms part of a RMP must be:

a) legible;
b) dated or marked to identify its version;
c) authorised prior to use, either directly or within the document control system, by:

i) the operator;
ii) the day-to-day manager of the programme; or
iii) a person nominated to do so in the programme's document control system [RMP Spec 19 (1)].

(5) Every document must be available when required to any person with responsibilities under the programme [RMP Spec 19 (1)].

(6) Operators must list all current RMP documents showing the document titles and their current versions and/or dates of issue [RMP Spec 12 (1)].

2.1.3 Document control

(1) Operators must implement procedures to:

a) control documents and records; and
b) ensure that the RMP is up-to-date and reflects actual operations [RMP Spec 19 (2) and HC Spec 9.2 (1)].

(2) Operators must document procedures for effective document control including how:

a) significant and minor amendments are made to the RMP so that the programme is current and reflects the actual operation;
b) the amendments, or the nature of the amendments to the programme are identified or described;
c) documents are authorised prior to issue and use; and
d) all amended parts of the RMP are replaced with the current versions at all distribution points without unnecessary delay after authorisation [RMP Spec 19 (2)].

Guidance
Operators often use an amendment register. This can be useful when applying for a significant amendment to identify the pages affected by the amendment. Refer to RMP Spec clause 21.

2.1.4 Record keeping

(1) Operators must produce records demonstrating that the requirements of relevant animal product regulations, notices and the registered RMP are being met [HC Spec 9.2 (1)].

(2) Ensure records accurately reflect any observations taken and remain readable throughout their entire storage period.

(3) Operators must ensure records relating to the RMP's monitoring, corrective action and operator verification activities (including electronic) include:

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

(4) Back up and protect all relevant electronic records from corruption, damage or loss.

(5) Operators must ensure all records are:

a) legible;
b) stored for 4 years, or for the shelf-life of the product to which the records relate (whichever is longer); and
c) stored in a manner which protects the records from damage, deterioration or loss [RMP Spec 20 (1)(a) and (b)].

Guidance
The requirements given in 2.1.4 Record Keeping apply to both paper and electronic records.

Record dates and times appropriate to the activity being monitored. For example, the monitoring of certain critical process time and/or temperatures may require the recording of the exact date and time when the observation is made. Monitoring a more general time period may be acceptable (e.g. shift) for the observation of certain GOP programmes (e.g. checking for compliance with personal protective equipment (PPE) requirements).

Consider for paper records:
- the durability of paper on which records are kept (e.g. pen does not write well on wet paper);
- its suitability for storage (e.g. thermal papers can fade over time); and
- the writing tool used (e.g. pencil is not suitable because it is easy to erase or alter).

Altering records should be noted alongside the original entry and initialled by the person amending the record. Single pen strokes should be used to delete errors. White out (e.g. Twink™) is not acceptable to auditors and verifiers as it is not possible to see the original entry.

Consider for electronic records:
- systems for backing up the documents and files;

- security of documents and files; and
- version control of documents when amending the record.

Recording information on a whiteboard is not considered a record.

2.1.5 Accessibility of RMP documents and records

(1) Operators must ensure that RMP documents, monitoring and verification records and any archived documents are accessible or can be retrieved and made available within 2 working days of any request to:

a) recognised persons;
b) Animal Product Officers;
c) the Director-General; and
d) persons authorised by the Director-General [RMP Spec 19 (4), 20 (1)(c), 20 (3), HC Spec 9.2 (2)(a) and (c)].

2.1.6 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for document control:

a) all RMP records (including monitoring, corrective action and verification records);
b) important correspondence with their verifier and with MPI; and
c) amendments and obsolete documents.

2.2 Personnel health and hygiene

2.2.1 Purpose and scope

(3) To ensure that all personnel are medically fit to perform their duties and that they comply with good hygienic practices so as to prevent or minimise the contamination of bee products, other inputs, packaging, equipment, and the processing environment.

2.2.2 Health of personnel

(1) Operators must take reasonable measures to ensure that a person (including any visitor or contractor) does not handle product, or enter an area where he or she may adversely affect the suitability for processing or the fitness for intended purpose of product, if that person is confirmed as or suspected of suffering from or being a carrier of a disease as described in clause 2.2.2 (3)(a).

(2) Ensure personnel and visitors are aware of and comply with the health procedures.

(3) Operators must ensure health procedures include the following:

a) instructions for personnel to inform their supervisor or manager if they are (or suspect that they are) suffering from diarrhoea, acute respiratory infection or diagnosed with an illness caused by *Salmonella*, *Shigella* spp., *E. coli* spp., *Campylobacter*, Hepatitis A virus infection or other infections likely to be transmissible via food;
b) actions to take so that medically unfit personnel do not work as product handlers or enter areas where the person may adversely affect the safety or suitability of any product;
c) clearance requirements (e.g. submission of medical certificates) for personnel resuming work after being diagnosed with an illness mentioned in clause 2.2.2 (1); and
d) procedures for treating injuries, wounds or cuts.

(4) Treat any injury, wound or cut immediately and dress with a secure waterproof dressing to prevent contamination of any ingredients, product, packaging or equipment.

Guidance

Awareness and compliance with heath procedures could be achieved through:

- Sickness Policy;
- pre-employment agreements;
- ongoing staff training;
- staff declarations when they resume work after extended periods of leave or premises shut-down;
- induction; and
- declarations from contractors and visitors entering the premises.

"Acute respiratory infections" are not considered to include the common cold or 'flu as these are not transmissible by food and a medical certificate is not required before resumption of work after suffering from these illnesses. Personnel who are unwell may be able to work but not in areas that may contaminate product e.g. in a store.

Brightly coloured or metallised dressings are recommended as they are more likely to be detected in products if they become dislodged.

2.2.3 Hygienic practices

(1) Operators must ensure that all personnel whose presence or action within processing areas may result in contamination of edible bee product:

a) wear appropriate protective clothing, where necessary;
b) follow an appropriate personal hygiene routine (refer to 2.2.4 Hygiene Routines); and
c) behave in such a manner as necessary to minimise contamination of edible bee product, other inputs, packaging and the processing environment [AP Reg 12].

(2) Ensure you have procedures to make certain PPE does not become a source of contamination. This includes specific procedures for activities conducted outside processing areas and staff conducting cleaning activities.

(3) Ensure protective clothing (e.g. coats, overalls, aprons, old bee suits) is visibly clean at the start of each day's operation.

(4) Ensure footwear is suitably clean so it does not cause soil, mud, grass and other dirty material to be brought into processing and packing areas.

(5) Ensure personnel do not bring personal items for personal use, as appropriate, into the processing area that could cause contamination or pose a risk to product fitness for purpose.

(6) Ensure personnel thoroughly wash and dry hands and exposed portions of the arms with hand (liquid) soap and water:

a) before entering any processing or packing areas;
b) before handling any product or exposed packaging;
c) after using the toilet;
d) after handling or coming into contact with waste and contaminated surfaces or material; and
e) after hand contamination from coughing, sneezing, and blowing the nose.

Guidance
Hand washing water in buckets may be used by personnel during processing only for the purpose of removing sticky honey residues on hands. It should not be used for washing contaminated hands. Change the water on a regular basis and should not become a source of contamination.

(7) After washing, hands should be thoroughly dried on:

a) disposable paper towels; or
b) "roller" type towels which present a clean surface to each user.

(8) Ensure PPE is:

a) maintained in a hygienic condition;
b) made of readily cleanable materials;
c) cleaned or changed whenever it becomes a source of contamination during processing; and
d) stored in a manner that protects it from contamination.

(9) Ensure disposable or damaged PPE is:

a) discarded after use, when damaged (e.g. torn), or if it cannot be effectively cleaned when required during use; or
b) repaired.

(10) Prohibit the use of street clothes worn over protective clothing.

Guidance
PPE generally includes the following:

- overall or coat, which may be of any colour, provided the presence of any contaminant, relative to the type of work, is clearly distinguishable;
- gloves and sleeves;
- hairnets;
- waterproof apron, as appropriate; and
- waterproof footwear.

Covering of the potential food contact zone will, in the majority of cases, only require a coat that covers the body to below the knee. For example, for personnel working at tables, the potential food contact zone would be from the shoulder line to below the level of the work surface.

Clean gloves before use and should be cleaned or replaced whenever gloves become contaminated e.g. mixing chemicals, etc.

Store PPE that comes in direct contact with unprotected product in a dedicated storage area when not in use e.g. aprons.

Ensure the colour of PPE makes visible contamination (relative to the type of work) clearly distinguishable.

Use clean disposable utensils for tasting honey.

(11) Prohibit personnel involved in the handling of edible bee product wearing any jewellery except plain wedding bands (i.e. no stone). Plain wedding bands may be worn provided they cannot be easily dislodged and they can be effectively cleaned in the same manner as hands.

2.2.4 Hygiene routines

(1) Ensure no one processes honey in any processing area unless they comply with the hygiene routine. People entering an active processing area without complying should have appropriate corrective actions taken (e.g. re-training, warnings, re-cleaning etc.).

(2) Implement hygiene routines for personnel when changing between activities of lower to higher hygienic status.

(3) Include as a minimum in the hygiene routine:

a) a complete change of all product contact PPE;
b) washing and drying, or sanitising (where required) of the hands and arms; and
c) washing or changing footwear and PPE.

Guidance
Where possible, assign personnel to activities where the hygienic status of all procedures they are required to work is the same.

Ensure personnel change their PPE if moving from unhygienic processing areas to relatively cleaner areas.

(4) Provide enough rubbish bins for dirty (hand) towels and empty as appropriate but as soon as they become full.

(5) Ensure personnel handling unprotected product:

a) keep fingernails clean and short; and
b) do not wear fingernail polish or any other fingernail adornment.

(6) Manage body hair to minimise contamination of product.

(7) Ensure clean hats (paper, cloth, plastic), hairnets, beard nets, food industry balaclavas are worn to contain hair on the head and face.

Guidance
Hand-washing
Hand-washing and drying should involve the following:

- clean under each fingernail using warm running water, soap and a nail brush;
- wash hands with warm running water and soap, rubbing vigorously (front, back and between fingers); and
- dry hands thoroughly (front, back and between fingers).

Using sanitisers may be part of this process.

Hair
Determine your own policy on acceptable facial hair lengths. As a guide, facial hair longer than stubble would require containment.

Jewellery
Determine your own policy on jewellery. Jewellery includes earrings, rings, bangles, bracelets, brooches, necklaces, studs, exposed body piercings and wristwatches. Plain wedding rings (i.e. no stone) and medical alert jewellery may be worn provided they:

- will not dislodge; and
- are cleaned sufficiently in the same manner as hands.

2.2.4.1 Monitoring

(1) Regularly check procedure compliance.

2.2.5 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for personnel:

a) illness records, including sighting of medical certificates prior to personnel returning to work (when required);
b) registers for injuries;
c) visitors' logbook;
d) monitoring records of compliance with hygienic practices and/or of any problems observed and any corrective action taken (including restoration of control, product disposition and prevention of recurrence);
e) assessments and evidence of personnel competencies;
f) individual training records including induction and skills maintenance; and
g) any training materials (e.g. manuals or instructions).

Guidance
Records may be kept as a daily diary, logbook, completed form or checklist.

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to 2.1 Document Control and Record Keeping requirements.

2.3 Personnel competencies and training

2.3.1 Scope

(1) To ensure personnel have the knowledge and skills necessary to perform their assigned tasks effectively.

2.3.2 Competencies of key RMP positions

(1) Operators must identify the following (either by position, designation or name) in your RMP:

a) the day-to-day manager or person responsible for the day-to-day running of the RMP;
b) the person(s) who authorises all or parts of the RMP document; and
c) personnel involved in process control, monitoring, corrective action and operator verification activities [RMP Spec 15 (1)].

(2) Operators must document the skills or competencies needed by the persons identified in clause 2.3.2 (1) to enable the effective operation of the RMP [RMP Spec 15 (2)].

(3) The RMP must provide for the keeping of records, in an easily acceptable form, demonstrating that the competencies documented in clause 2.3.2 (2) have been achieved and maintained.

(4) Ensure the day-to-day manager or person authorising all or part of the RMP is familiar with the documented RMP and has the following competencies:

a) knowledge in food safety relevant to the bee products industry and hygienic procedures and practices documented in this Code;
b) knowledge of regulatory requirements, including responsibilities, related to the effective implementation of the RMP;
c) technical knowledge and experience in the particular product/process; and
d) able to liaise and communicate effectively with personnel and MPI.

(5) The day-to-day manager should be present at announced verification visits unless there are extenuating circumstances. A trained deputy could meet this need if required.

(6) Ensure personnel performing key tasks (including product formulation, monitoring, corrective action and operator verification) have the following competencies:

a) knowledge and skill in executing the particular task; and

b) an overall understanding of the area they are ~~monitoring~~involved in.

Guidance

The following competencies should be documented in relevant job descriptions:

- Ensure the day-to-day manager or person authorising all or part of the RMP is familiar with the RMP and has:
  - good knowledge of product safety and hygienic procedures and practices written in this Code;
  - good knowledge of regulatory requirements;
  - technical knowledge and experience in the processing or manufacturing of bee products; and
  - effective organisational and communication skills.
- Ensure the day-to-day manager shows evidence of upskilling through:
  - membership to relevant industry organisations;
  - subscription to relevant journals;
  - attendance at beekeeper field days or conferences;
  - access to MPI advisory notes, etc.
- Ensure the person responsible for the development and review of the HACCP application within the RMP has a good understanding of the HACCP principles and how they are applied to the processing or manufacturing of bee products. Ideally, the person should have attained a recognised HACCP qualification, (e.g. NZQA Unit Standard 28265).
- Ensure personnel involved in monitoring and corrective action activities and operator verification have:
  - an appropriate level of knowledge and skills in implementing their assigned tasks; and
  - a good understanding of operator verification.

2.3.3 Skills maintenance and supervision of personnel

(1) Operators must ensure the on-going maintenance of skills of those involved in the following:

a) process control and monitoring;
b) corrective action; and
c) operator verification [HC Spec 5.3 (1)].

2.3.4 Induction and on-going supervision of personnel

(1) Inform new personnel before starting work of:

a) their job description;
b) health requirements; and
c) hygienic practices and procedures.

(2) Ongoing supervision and/or training should be provided to ensure that new personnel are adequately trained in their specific tasks, and in hygienic practices and procedures.

(3) Develop a training programme which includes:

a) the identification of skills and competencies required for key roles;
b) training schedules (including refresher training); and
c) training records of personnel.

(4) Review the training programme at least annually to:

a) ensure that training remains up-to-date and effective; and
b) identify requirements for new training or refresher training e.g. new product/equipment/process.

Guidance

Provide any training appropriate to the nature of the person's assigned task or activity and level of responsibility. This may include induction training, regular in-house meetings, on-the-job training and external training courses.

Training for most personnel should cover:

- health and personal hygiene;
- movement of personnel and materials;
- cleaning and sanitation;
- handling of chemicals; and
- hygienic handling of materials and products.

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

2.3.5 Visitors and contractors

(1) Ensure visitors and contractors report to the responsible person on arrival at the premises. Ensure they are supervised by assigned staff while within the premises. Ensure it is the responsibility of the assigned staff that hygienic practices and procedures are followed by the visitor or contractor.

(2) Ensure visitors and contractors are not allowed to handle edible bee product in processing and packing areas unless they have complied with all hygiene requirements for food handlers.

Guidance

Ensure visitors and contractors who enter a processing or packing area:

- sign a visitor's logbook on arrival; and
- are able to declare freedom from diseases as per 2.2 Personnel Health and Hygiene.

2.4 Operator verification and notifications

2.4.1 Purpose and scope

(1) To ensure that the RMP continues to be effective and to notify MPI or verifier of issues as required.

2.4.2 General requirements and procedures

(1) Operators must document an operator verification system including:

a) the activities to be performed and their frequency;
b) procedures or methods used (who, what, when, where, how);
c) any actions to be taken when there is a non-compliance and where the RMP is ineffective; and
d) any recording and reporting requirements [RMP Specs 16 (1)].

Guidance

Operator verification includes several types of activities that together will provide the operator (and verifier) with confidence that the RMP and GOP are working effectively. Operator verification activities are not restricted to internal audits by the operator. Although internal audits are important, they need to be completed in conjunction with information from the day-to-day operator verification of the process.

Daily and/or ongoing operator verification activities

Daily and/or ongoing operator verification activities should include:

- routine surveillance and monitoring checks (e.g. daily process control);
- reality checks of processing;
- specific monitoring of process parameters or CCPs;
- monitoring record reviews;
- product sampling results may provide evidence of how the system is working;
- general oversight and supervision of the operation; and
- identifying issues and transferring those to the corrective action system if necessary.

Scheduled operator verification activities

- **Internal audits**. Usually an operator will carry out an annual internal audit of the whole RMP. Where an operator chooses to have a series of 'mini-audits' an RMP operator should have a schedule of internal audits which covers all systems at least annually.
- **RMP review**. Usually an RMP operator will review the RMP at least annually. The RMP review considers whether there has been any significant changes (i.e. to the process, equipment, building, products, staff in positions of responsibility, verifier etc.).
- **HACCP plan review**. Usually an RMP operator will review the HACCP plan(s) at least annually. The review considers whether there has been any changes (i.e. to the process flow, inputs or outputs, new ~~possible~~ hazards). Hazards include tutin, allergens, etc.
- All 3 of these activities can be combined into one activity.

Corrective action system

Some RMP operators will use a central register for all non-compliances which will simplify tracking of corrective and preventative actions. Identifying the 'root cause' of defects or issues will ensure that corrective actions are effective. Repetitive issues may result from:

- poorly maintained equipment or processing environment;
- poor control of the process;
- inadequately trained staff;
- lack of resourcing;
- lack of supervision; or
- poor standard of operator verification.

2.4.3 Scope and frequency of internal audit

(1) Operators should document and implement an internal audit programme.

(2) Operators must ensure internal audits are carried out by a suitably skilled person at a frequency sufficient to:

a) ensure ongoing compliance with documented RMP procedures; and
b) enable prompt identification of any problem [RMP Spec 15 (1)(c)].

(3) Operators must ensure appropriate corrective action is taken when problems are found [RMP Spec 16 (1)].

(4) Operators must keep records of observations made during any internal audit and any corrective action taken [RMP Spec 20 (2)].

Guidance

Ensure internal audits consist of the following:

- person(s) responsible for conducting the audit;
- audit schedule specifying when each programme is to be checked, considering seasonal activities and risk;
- audit process;
- a review of written procedures;

- review of records and trend analysis;
- reality checks during processing;
- external audit findings;
- confirmation that deficiencies or non-compliances identified from the last internal audit have been rectified; and
- a clear description of when corrective and preventative action should be taken and what corrective and preventative action is expected.

Ensure the person responsible for undertaking internal audits has:

- auditing skills;
- a good understanding of the operations, processes and GOP covered by the RMP;
- independence from the procedures being audited as much as possible; and
- a good understanding of relevant regulatory requirements.

Determine the frequency of internal audits for the different parts of the RMP programmes, considering various factors such as:

- the importance of the particular programme on product safety, suitability and hygienic operations;
- the frequency of non-compliances;
- the effectiveness of the programme; and
- skills and training of personnel implementing the particular programme.

Increase the frequency of audits when repetitive non-compliances occur or the programme is found to be ineffective.

The internal audit(s) could include a trial run or mock recall (refer to 6.21.3 Recall).

2.4.4 Internal audit procedures

(1) Observations made during internal audits and corrective actions taken must be recorded [RMP Spec 16 (1)].

(2) Ensure the following actions take place when ongoing or recurring non-compliances occur:

a) investigate to determine possible causes of non-compliance;
b) take appropriate corrective actions to regain control and prevent recurrence of the problem;
c) increase surveillance of the system; and
d) review the RMP or the relevant GOP programme and make necessary changes.

(3) Ensure a review of relevant parts of the RMP is carried out when:

a) a major change is made to a product, process or the premises; or
b) when there are indications (e.g. process failures, repetitive non-compliances, negative trends or unacceptable external verification audits) that certain programmes or procedures are ineffective.

Guidance

Review written procedures and update to ensure that they:

- are up-to-date with current legislation and standards; and
- reflect actual operations.

Review records for:

- completeness and accuracy of required information;
- appropriateness of corrective actions taken;
- any trends, new hazards, recurring problems; and
- compliance with documented control procedures.

Ensure the person performing the audit signs the records (or indicates in some other way) that the records have been subject to an internal audit.

Reality checks should include observations of:
- workers' performance and compliance with hygienic practices and process control procedures;
- compliance with established process parameters such as processing times and temperatures; and
- the hygienic status of the premises' internal and external environment, facilities and equipment.

Follow up all deficiencies found at previous audits using the corrective action system.

2.4.4.1 Ingredient and product testing

(1) Use product testing to verify compliance with relevant regulatory limits or operator-defined limits written in the RMP.

(2) Perform moisture content measurements using a suitably skilled person and documented methodologies.

(3) Operators must record all results of product tests [RMP Spec 20 (2)].

(4) Ensure samples are representative of the particular batch or lot of product or ingredient being tested.

(5) Ensure samples of product are hygienically collected by a person who has appropriate training and/or experience in hygienic sampling techniques.

Guidance
Document the product testing programme and include information on:
- products or ingredients to be tested;
- frequency of testing;
- number of samples;
- tests to be done;
- the identity of the suitably skilled person or laboratory that will perform the tests; and
- corrective actions.

Ensure any water testing is carried out by an MPI Recognised Laboratory accredited to ISO/IEC 17025 with the required tests in the laboratory's scope of accreditation.

2.4.4.2 Notification procedures

(1) Operators must notify 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 RMP [RMP Specs 13 (1)].

(2) Operators must document procedures for notifying the Director-General of any emerging, new or exotic biological hazards or new chemical hazards that come to the operator's attention in relation to the RMP without unnecessary delay [RMP Specs 13 (2)].

~~(3) Operators must follow the notification requirements if honey products are exported and subsequently found to have non-compliant tutin levels (Animal Products (Harvest Statement and Tutin Requirements for Export Bee Products) Notice 2010).~~

~~(4)~~(3) Operators must document procedures for notifying the recognised RMP verifying agency in writing, without unnecessary delay, of the following issues relating to the operation of the RMP:

a) any significant concern about fitness for intended purpose of any bee product;
b) where the cumulative effect of minor amendments necessitates the registration of a significant amendment to the RMP;

c) where the RMP is considered to be no longer effective;
d) where the premises are not or are no longer suitable for their use; and
e) where anything within the physical boundaries of the RMP is used for additional purposes or by other operators and the RMP has not adequately considered relevant hazards or other risk factors [RMP Spec 13 (3)].

Guidance
Guidance on notifying export non-compliances can be found on the MPI website or search on "ENC". This includes raising an export non-compliance (ENC) for export product where appropriate.

~~(5)~~(4) Operators must ensure their RMP is amended (except where they are done on a trial basis and the affected bee product is not traded) when:

a) making major alterations to the processing facilities or equipment and sometimes the boundaries;
b) relocating processing operations to a new physical address (except where this is already permitted for mobile premises);
c) processing animal material or animal product that is not covered by the RMP, except:
   i) where the product and process are similar, and
   ii) a documented risk factor identification and hazard analysis has shown that all risk factors associated with that animal material or animal product are already adequately addressed by the RMP.
d) setting up a new process or process modification that is not covered by the RMP, except:
   i) where the process or process modification is similar to existing processes; and
   ii) a documented risk factor identification and hazard analysis has shown that all risk factors associated with that process are already adequately addressed by the RMP.
e) making any other changes that introduce new risk factors, or adversely impact on existing risk factors;
f) merging 2 or more registered RMPs;
g) splitting a registered RMP into 2 or more RMPs; and
h) adding a business to a multi-business RMP except where the Director-General's approval under section 17A of the Act applies to a type of business, premises or place rather than to specific businesses [RMP Spec 22].

Guidance
If you need to amend your RMP, the amendment will either be classified as significant or minor. Information on amending an RMP can be found in the RMP Manual.

If you are considering more activities, check with export requirements e.g. OMARs if those activities can be undertaken within your RMP.

2.4.5 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for operator verification and notifications:

a) internal audit reports;
b) other information or evidence relating to operator verification activities (e.g. test results);
c) copies of any communication sent to MPI or to your verification agency; and
d) any corrective action(s) taken e.g. restoration of control, product disposition and prevention of recurrence.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

2.5 Corrective action

2.5.1 Purpose and scope

(1) To ensure if problems occur, they are managed appropriately (i.e. restoration of control, product disposition and prevention of recurrence).

2.5.2 General requirements and procedures

(1) Operators must ensure that corrective actions for any non-conformance or non-compliance include an assessment to determine the cause and extent of the issue and address:

a) immediate restoration of control;
b) identification and disposition of any affected product; and
c) prevention or recurrence of the problem [RMP Spec 11 (2)].

(2) Identify the root cause(s) of the problem and address these by the corrective actions.

(3) Ensure corrective actions are carried out in an effective and timely manner.

(4) Maintain a register for corrective actions, including follow-up checks e.g. internal audits, other operator verification activities, external audits.

(5) Categorise or rank defects based on their potential effect on product contamination and product safety.

(6) Operators must ensure compliance with requirements and procedures is regularly checked (e.g. monthly) by the responsible person at a frequency that will ensure consistent and ongoing effectiveness of the programme [RMP Specs 16 (1)].

Guidance
Refer to 6.21Non-Complying Product and Recall for further information on managing non-compliances and recall of affected products.

Refer to 2.4 Operator Verifications and Notifications.

Set time frames for performing corrective actions e.g. correct a minor defect within 6 months.

It is common practice to categorise defects into the following three categories: critical, major and minor defects. This assists in setting appropriate corrective actions. Refer to Guidance Table 1 Examples of Defects Categories, the Corresponding Appropriate Corrective Action and Suggested Timeframe below.

Examples of managing the risk to product caused by a defect could include:

- continually monitoring processing and/or product on production days to ensure the risk to product is minimal; or
- preventing defective equipment from being used until repair can take place.

Guidance Table 1: Examples of defects categories, the corresponding appropriate corrective action and suggested timeframes

Defect	Definition	Corrective Action
Critical	Will result in direct contamination of a product. For example: • dirty product contact surfaces; • condensation from an overhead structure directly above exposed products or product contact surfaces.	Correct immediately. Processing must cease if taking the corrective action will have a direct effect on product safety.
Major	May result in direct or indirect contamination of a product. For example: • dirty/contaminated surfaces which are handled by workers • residue build-up on door handles or equipment knobs; • dirty surfaces that are in close proximity to a product contact surface.	Correct at the first available opportunity during the day in which it occurs. Correct before the start of the next processing period, unless it can be shown that a further delay will not have an effect on product safety. Consider the combined effect of multiple major defects on product safety. Correct these defects where there is a direct effect on product safety with appropriate urgency.
Minor	Unlikely to result in contamination of a product. For example: • dirty surfaces that are not near a product contact surface and are unlikely to come into contact with exposed product, product contact surfaces, packaging or workers; • an isolated speck of product residue on a table leg, wall or drain.	Correct as the opportunity arises. Set a timeframe for correction of the defect.

2.5.3 Extenuating circumstances

(1) Ensure any defect is managed appropriately and risk to product is minimised where the defect cannot be corrected within the suggested timeframes above.

(2) Report the following to the verifier:

a) a description of the problem and any affected product;
b) a summary of the assessment made;
c) the decision on the disposition of the product; and
d) any corrective actions taken to prevent the recurrence of the non-compliance.

Guidance
Extenuating circumstances may include:
- unforeseen events such as floods, fires, and earthquakes;
- replacement equipment and parts not being immediately available;
- unavailability of contractors;
- boil water notice for council supplied water; and
- power failure.

2.5.4 Preventative actions

(1) Preventative actions to minimise the occurrence of non-conformance or non-compliance may include:

a) amending documented programmes to correct deficiencies;
b) increasing the frequency of inspections or internal audits;
c) revising supervision or training programmes when staff, visitors or contractors are not following GOP as required;
d) issuing warnings to repeat offenders; and
e) a series of escalating responses for repetitive non-conformances.

2.5.5 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for corrective action:

a) trend assessments of monitoring;
b) defect criteria decisions;
c) any corrective actions (including preventative measures) taken; and
d) any reports given to the verifier.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Part 3: Design, construction and maintenance of buildings, facilities and equipment

3.1 Overview

3.1.1 Scope

(1) To ensure that all buildings, facilities and equipment are designed, constructed, installed and operated in a manner that minimises contamination of product, packaging, other inputs, equipment, and the processing environment.

3.1.2 References applicable to design and construction

(1) A summary of additional references applicable to the design and construction of premises are listed below. This list is not extensive. Refer to your local council in the first instance for e.g. resource consent.

a) building requirements and codes;
b) drinking water standards;
c) health and safety; and
d) Resource Management Act.

3.1.3 Verification of compliance

(1) Operators must provide appropriate validation of design, construction and installation attributes that will enable effective verification of compliance with standards [RMP Spec 15 and HC Spec 2.2 (2)].

(2) This is particularly important where alterations and additions require professional expertise e.g. refrigeration systems, back flow prevention systems and water treatment systems.

3.1.4 Working space

(1) Provide adequate working space to allow for the following:

a) the hygienic performance of all operations;
b) personnel flow and access;
c) effective cleaning;
d) product flow;
e) equipment installation;
f) storage; and
g) access of materials.

3.1.5 Cross contamination

(1) Operators must design buildings and facilities to provide separation, by partition, location or other effective means, between operations (including waste disposal) that may cause contamination of bee products [AP Reg 9 and 10].

(2) Separation should be provided, whenever possible, between the following functions:

a) handling of unprocessed and processed product where there is a potential for cross contamination;
b) processing of different product types where necessary;
c) processing and packing; and
d) unprotected product and by-product storage and transportation.

(3) Premises layout should separate, as appropriate, high and low risk materials, processes and the personnel working within them.

(4) Design premises, where appropriate, so that personnel flows and access can be controlled to prevent cross contamination.

> **Guidance**
> Consider all points of cross contamination that may occur in the RMP premises and ensure that measures are in place to manage the hazards e,g. consider environmental risks from neighbouring properties.
>
> Common practices used to provide separation are typically categorised into the following:
> - **separation by distance** - to separate to such an extent so as to avoid any possible contact, splash, contamination etc., between specific functions, processes or personnel.
> - **separation physically** - to separate by floor to ceiling solid walls and doors, or to fully protect product/by-product by pipelines, enclosed vats, etc.
> - **separation by time** - to end one function or process prior to starting a different function or process, and if necessary to avoid contamination with a cleaning operation in between.

3.1.6 Process flows

(1) Design buildings and facilities to facilitate hygienic operations by means of an organised process flow from the arrival of the raw material at the premises to the finished food or by-product.

> **Guidance**
> Design buildings, services and equipment around the process flow path. Implement the principle of one-way-flow of food or by-products wherever possible.
>
> Without good sanitary design at the onset, food safety and sanitation programmes can be less effective and become compromised. Problems such as food poisoning, spoilage, insect infestations and foreign material contaminations are more likely to occur.

3.1.7 Site layout

(1) Ensure the layout of the site is suitable for the intended operations of the premises.

(2) Provide, where appropriate, adequate:

a) potable water and energy supply to ensure all activities can be carried out efficiently;
b) waste and effluent disposal systems; and
c) vehicle access ways, constructed and maintained so that they drain surface water and do not create dust and other environmental contamination.

3.1.8 Site considerations

(1) Consider the following factors in site selection:

a) fuel storage and handling facilities;
b) staff access and amenities;
c) winds;
d) future possible expansion;
e) flood plains;
f) neighbouring industries and facilities;
g) ventilation and process air intakes; and
h) vehicle access.

3.2 Building design and construction

3.2.1 Purpose and scope

(1) To ensure that all buildings and facilities are designed, constructed and maintained in a manner that prevents or minimises contamination of edible bee products.

3.2.2 General requirements and procedures

(1) Operators must ensure the premises, facilities, equipment and essential services are designed, constructed, located and operated in a manner that:

a) enables the suitability of any edible bee product to be maintained;
b) enables the fitness for intended purpose of any edible bee product to be achieved and maintained; and
c) minimises and manages the exposure of any edible bee product, packaging, equipment, and the processing environment to hazards and other risk factors [AP Reg 10].

(2) Obtain advice from a competent person on the design of new premises and alterations to existing premises that substantially affect the sanitary environment of the premises.

(3) Operators must ensure any material or interior surface finish used in the building, manufacture, or maintenance of facilities, equipment, or internal structures is:

a) impervious, non-absorbent, and free from depressions, pits, cracks, and crevices that may harbour contaminants:
b) easily cleaned and sanitised;
c) durable, resistant to fracture, and capable of withstanding effective cleaning and sanitising;
d) unaffected by any corrosive substance with which it is likely to come into contact; and
e) not a source of physical, chemical or microbiological contamination [HC Spec 2.2 (1)].

(4) Operators must ensure the sanitary design of facilities, equipment, and internal structures, that may affect the suitability for processing of bee products, or the fitness for intended purpose of any edible bee product [HC Spec 2.2 (2)].

(5) Operators must ensure premises, facilities, equipment and essential services are designed, constructed and maintained in a manner that prevents the harbourage and entry of pests [AP Reg 10].

(6) Seal or cover holes, drains and other places where pests are likely to gain access, with screens or similar materials (pest exclusion devices) that restrict the entry of pests.

(7) Keep internal and external areas of the premises clean and tidy, including during the off-season.

(8) Regularly check the external environment is kept free of any food and pest breeding sites (e.g. long grass, bird's nest, accumulated wastes and junk).

Guidance

Further guidance on the design and construction of facilities can be found in the Reference Manual for Honey Extracting Facilities and Food Safety Program of Capilano Honey Ltd., Australlia.

Ensure any material or exposed finish is free from defects e.g. chipped/peeling paint.

Refer to 6.8 Pest Control for more detailed information regarding managing pests in the processing area.

Stacking bee boxes above ground (for elevation) outside buildings assists in preventing contamination of the boxes.

3.2.3 Site locale

Guidance

Site

- consider potential sources of contamination when deciding where to locate the premises, as well as the effectiveness of any reasonable measures that might be taken to protect the product.

Site location needs to be away from:

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

Transport

- ensure vehicle access ways, and areas between and around buildings, are constructed and maintained so that they drain surface water, and minimise dust and other environmental contamination.

3.2.4 Processing areas

(1) Ensure the design and layout of the processing rooms facilitate inspection of operations.

(2) Ensure an orderly flow of:

a) product;
b) packaging; and
c) personnel.

Guidance

Acceptable materials

- plywood or gib board may be used for walls provided they are effectively sealed so that they are impervious and washable. Unsealed ply panels should not be used due to their tendency to swell and lift if penetrated by water;
- insulated panels are recommended for the construction of processing areas;
- laminates and melamine face sheeting are also suitable construction materials; and
- gloss enamel, epoxy or polyurethane paint will satisfy the requirement for sealing of surfaces.

3.2.5 Protrusions within the walls, ceilings or floors

(1) Ensure where fittings and services such as pipes, wiring, ducting and trunking pass through walls, ceilings or floors, are:

a) flashed and sealed to eliminate gaps on both the interior and exterior surfaces to prevent water seepage, and harbourage and entry of pests;
b) constructed to prevent accumulation of dust and contaminants; and
c) effectively cleaned at the frequency required for the function of the room or area.

(2) Ensure insulation materials on pipes within food areas and food support areas:

a) do not pose a risk to the safety of bee products; and
b) are able to be adequately cleaned under the normal conditions of use.

3.2.6 Floors

(1) Ensure floors are installed and maintained to eliminate all cracks, open joints, depressions or other low areas that would accumulate moisture or harbour contamination.

Guidance
Floors
Ideally floors subject to wet cleaning should be adequately graded and free-draining. A wet and dry vacuum cleaner and using a de-humidifier helps to ensure any wet floors dry sufficiently.

Acceptable materials and design considerations

- commonly used acceptable materials should be sealed concrete or other non-toxic substance impervious to liquids and acid resistant. Honey reacts with normal concrete and will break down the surface. Industrial welded vinyl when laid over a masonite base is also a suitable floor covering;
- floors should be smooth as a rough surface will trap small amounts of honey and water that will eventually go mouldy;
- as a safety precaution, excessively smooth floors should be avoided in areas subject to wet cleaning;
- ideally floors should be sloped so that water will run off to floor drains. Floor falls of 1 in 50 have been found to work well in wet processing areas. Wash areas normally have a 1 in 25 fall;
- floor junction coving to a radius of 80 mm has been found to work well in wet cleaning areas;
- suitable floor joint sealants that can be used are polyurethane or polysulfone epoxy mastic; and
- suitable drainage should be provided so that any discharge or overspill from processing areas goes directly into a drain rather than on the floor.

3.2.7 Windows

(1) Ensure windows are flush with the inside surface of the wall.

(2) Ensure glass windows are not used where glass could contaminate product if the window breaks.

(3) Windows that open should have mesh screens to prevent entry of insects.

Guidance
Slope window sills, with an inside ledge, downwards at an angle to prevent the build-up of dust and to facilitate effective cleaning.

Keep windows shut where dust could be an issue.

Angling a window ledge to at least 45° has been found to work well.

Using safety glass is a good alternative to standard glass.

3.2.8 Doors

(1) Install doors where their opening and closing from external surroundings or other areas of lower hygiene status (e.g. waste area) will not result in contamination of products, processing equipment and the processing environment.

(2) Ensure all doors opening from the exterior or by-product areas directly to food areas or food support areas are, as far as practicable, self-closing.

(3) Ensure doors are properly sealed to prevent water seepage, harbourage and entry of pests and contamination from external environments.

(4) Ensure door openings and passageways are designed and constructed so that unprotected food does not come into contact with the door jambs or walls.

(5) Minimise the time doors are opened for traffic to reduce contamination from areas of lesser hygiene.

Guidance
Doors

- doors in areas where processing and/or packing is carried out should not open directly to the outside environment. An ante-room is recommended for providing two doors between the processing or packing room and the outside;
- self-closing doors reduces the risk of contamination. An ante-room would be an acceptable substitute for a self-closing door;
- dedicated emergency exits are not considered doors; and
- air curtains in doorways are not regarded as doors and should not introduce contamination.

3.2.9 Plastic strips

(1) Ensure plastic strips used in doorways are:

a) installed with sufficient overlap to provide continuous coverage; and
b) maintained in a clean and good working condition.

Guidance
Use plastic strips in doorways as the only entry to food areas and food support areas provided they are fit for intended purpose and do not open directly to the exterior or to by-product or other non-product areas.

3.2.10 Stairs, decks and walkways

(1) Ensure where stairs, decks and walkways are located over exposed product or product contact surfaces, they are constructed of impervious material with solid treads and closed risers to prevent contamination of food by splash or fallout.

(2) Construct all stairs, decks and walkways to prevent the pooling of water and should be sloped to drain points.

Guidance
Try side curbs at least 150 mm high measured at the front edge of the treads, they have been found to work well.

Use open grid type stairs, decks and walkways where the process is fully enclosed and there is no danger of product being contaminated.

3.3 Essential services

3.3.1 Scope

(1) To ensure essential services are designed, constructed and maintained in a manner that minimises contamination of product.

(2) Refer to 3.4 Potable Water for potable water. It is an essential service but is described separately.

3.3.2 Lighting

(1) Operators must ensure lighting is of a sufficient intensity and quality to enable satisfactory performance of all operations [HC Spec 2.4].

(2) Ensure light bulbs, fixtures, skylights, or other glass are of the safety type, LEDs or otherwise protected e.g. covers to prevent contamination in the event of breakage, if over:

a) products;
b) exposed packaging material; or
c) equipment.

(3) Ensure illumination levels comply with the relevant provisions of AS/NZS 1680.2.4:1997 Interior lighting - Part 2.4: Industrial tasks and processes. Refer to Guidance Table 2 below.

Guidance Table 2: Acceptable lighting intensities

Facility	Lux
Staff rooms, changing rooms, locker rooms, cleaners' rooms, lavatories, measured at the floor	150
Stores and loading bays with infrequent access, measured for identification of labels	150
Stores with constant operation, breakdown, make-up, despatch measured at the floor aisles	300
Processing rooms, measured at working plane	500
Areas where product is inspected and prepared to inspection standards, measured at the working plane	750
Areas where quality control inspection is performed, measured at the working plane	1000

3.3.3 Ventilation

(1) Maintain adequate ventilation and air flow in the processing and storage areas to:

a) minimise air-borne contamination of product;
b) remove excessive heat, steam and condensation; and
c) minimise the entry of odours, dust, vapours, smoke or bees.

(2) Ensure ventilation systems are designed and constructed to ensure that air flows from:

a) food areas to non-food areas; and
b) finished food areas to non-finished food areas.

Guidance
Design ventilation systems to take into account factors such as:
- the size of the premises;
- the number of persons working within food areas;
- heat gain (e.g. from equipment or product load);
- water emission;

- relative humidity;
- condensation; and
- general climatic conditions.

Ensure air intakes are located and constructed so that contamination from exhaust stacks, roof-deposited debris (e.g. faecal material from wild birds) or other environmental contamination cannot be taken into the process area. Provide air intakes to food areas with an effective filtration stage.

Ensure filters are:

- capable of withholding particles that have the potential to cause contamination of the bee product and process environment; and
- readily removable for replacement or cleaning.

Choose the filter in accordance with the conditions of use. Consider the type of the product and process, and the size, nature and concentration of the particulate matter to be removed.

3.3.4 Water treatment systems

(1) Ensure automatic water chlorination systems are fitted with alarm devices that indicate when the chlorination systems has ceased to function correctly.

(2) Ensure UV light water disinfection systems are fitted with monitoring and alarm systems to automatically shut down the water supply to the UV water treatment unit in the event of:

a) power failure to the treatment unit;
b) lamp failure of the treatment unit; and
c) excessive water turbidity.

(3) Fit novel or alternative approved water treatment systems with an appropriate monitoring and alarm system.

3.3.5 Drainage

(1) Ensure drainage systems are designed, constructed and located to:

a) effectively remove solid and liquid waste;
b) prevent odours, pests, other objectionable material and storm water from entering the premises; and
c) prevent contamination of products, packaging and equipment from aerosols and splashes from drains.

(2) Ensure drains are positioned and of sufficient capacity (i.e. size and fall) to ensure liquid and solid waste is contained and rapidly removed to minimise the spread of waste across floors.

(3) Ensure effluent and sewage is contained and disposed of hygienically and by means that prevent the contamination of potable water supplies and food.

Guidance
Ensure channel drains are of sufficient size and suitable fall to allow self-draining and ease of cleaning.

Ensure the drainage system is also designed to accommodate the possibility of future alterations to room functions and process room layouts.

Drainage lines should not pass from dirty to clean processing areas. Consider the flow in the process flow design of the plant, so drains don't flow from areas of high contamination to areas of low contamination.

Ensure sewerage lines from toilets and urinals are not connected with any drainage lines within the premises and do not discharge into sumps from which any recovery for further processing is done.

To prevent the possibility of any sanitary drainage backing up and entering the premises, sewerage lines should either be:

- directed to an adequate septic system located at a safe distance from any processing building; or
- discharged into the local sewerage system at a point sufficiently remote from the premises.

3.3.6 Facilities

(1) Dedicated areas should be provided for the following:

a) storage and/or preparation of any ingredients if used in the manufacture of bee products including:

i) dried ingredients that may include propolis, pollen, fruit, green tea, etc.;
ii) wet ingredients that may include fruit concentrate, royal jelly, etc.

b) storage of cleaning equipment;
c) storage and/or preparation of maintenance compounds;
d) storage and/or make-up of packaging materials; and
e) storage of PPE when employees are not in processing areas.

(2) Provide hygiene facilities appropriate to the nature of the process.

(3) Ensure packaging material facilities are able to store packaging materials off the floor.

(4) Ensure wet cleaning facilities have an adequate supply of hot and cold potable water.

(5) Provide PPE at personnel entry points to bee product processing areas e.g. at wash hand basins.

Guidance
A dedicated area could be a room or simply a cupboard, dependent upon the requirements of the premises.

Steam and splash from wash water or cleaning chemicals are a potential source of contamination to bee products being processed, packed, stored or transported.

Ensure cold water is suitable for cleaning processing areas and equipment.

Hot water should be at least 60°C for sanitation.

Refer to 6.23 Storage for further information on storing packaging.

3.3.7 Rooms

(1) Operators must operate temperature-controlled processing rooms and equipment within their design capability and capacity. Ensure these rooms deliver any temperatures specified in legislation or in the RMP [HC Spec 2.3 (3)].

(2) Operators must ensure cleaning and sanitation facilities, and equipment, are provided to ensure that the hygiene of personnel, equipment and the premises or place can be maintained [AP Reg 11].

3.4 Potable water

3.4.1 Purpose and scope

(1) To ensure that adequate supply of potable water is available for hygienic operations so as to minimise contamination and maintain the fitness for intended purpose of edible bee products.

(2) Topics included are:

a) potable and non-potable water;
b) water reticulation management plan;
c) water management plan; and
d) water treatment.

3.4.2 General requirements and procedures

(1) Operators must ensure water that comes into direct contact or indirect contact with any edible bee product is potable water at the point of use [HC Spec 2.5 (1)].

(2) Operators must source potable water from:

a) a registered supplier (e.g. council supply); and
b) operator's own supply (e.g. water sourced from a bore, stream, river or roof) provided it complies with clause 3.4.2 (3) below.

(3) Additionally, operators that supply their own water must comply with the requirements of Schedule 1 of the current version of the Animal Products Notice: Specifications for Products Intended for Human Consumption. This includes completing the Water Supply Assessment Checklist (Appendix 1 of this Code) for water that comes into direct or indirect contact with any edible bee product [HC Spec 2.5 to 2.9 and Schedule 1].

(4) Where operators use an alternative water quality standard, they must:

a) determine the water quality standard by an analysis of hazards and other risk factors; and
b) ensure the suitability for processing or fitness for intended purpose of product is not adversely affected [HC Spec 2.5 (2)].

3.4.3 Use of potable water

(1) Ensure potable water is available and used for:

a) processing of products;
b) cleaning and sanitation;
c) personnel hygiene activities; and
d) any other activity wherein water comes into direct or indirect contact with any edible bee product.

(2) To ensure the safety and suitability of product and the hygienic operation of the premises, the following should be available:

a) an adequate supply, volume and pressure of potable water; and
b) appropriate facilities for its storage, distribution and temperature control.

3.4.4 Criteria for potable water

(1) Operators must ensure potable water meets these criteria at the point of use set out in Table 3: Quality of Potable Water [HC Spec Schedule 1 Part 1].

Table 3: Quality of Potable Water

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

3.4.5 Non-potable water

(1) Operators must determine if non-potable non-product contact water is fit for intended purpose:

a) by an analysis of hazards and other risk factors; and
b) taking into consideration the intended use of the water [HC spec 2.6 (2)].

(2) Operators must identify the use of non-potable water in the water management plan [HC Spec 2.9].

(3) Only use non-potable water, of a standard that does not risk the safety and suitability of the product and is satisfactory to the evaluator, in the following situations:

a) firefighting;
b) toilets and urinals;
c) cleaning paved areas, roadways, truck turning aprons, etc.;
d) conveying and washing of inedible material;
e) washing down sumps and external drains; and
f) facilities such as bulk stores.

(4) Ensure every water line conveying non-potable water is:

a) separate from potable water lines, unless the connection is required for firefighting purposes;
b) clearly identified at all outlets and any other place where identification is necessary; and
c) connected in a manner that prevents contamination of potable water supply.

3.4.6 Summary of requirements for water from different sources

Guidance Table 4: Summary of Requirements for Water from Different Sources

Source	Requirements
Town supply or other independent supply with no additional treatment[1] by operator	Management of reticulation system – clause 3.4.7
Town supply or other independent supply with additional treatment[1] by operator	Management of reticulation system – clause 3.4.7 Water management plan, including water sampling and testing – clause 3.4.8 and 3.4.10
Operator's own supply (e.g. water sourced from a bore, river, stream, roof)	Management of reticulation system – clause 3.4.7 Water management plan – clause 3.4.8 Water sampling and testing – clause 3.4.10 Assessment[2] and reassessment of water supply status – clause 3.4.10 and Schedule 1

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 Notice: Specifications for Products Intended for Human Consumption.

3.4.7 Water reticulation management plan

(1) Operators must implement a reticulation management plan for potable water used within your premises or place [HC Spec 2.8 (1)].

(2) Operators must ensure the reticulation management plan includes:

a) systems to ensure that water is reticulated throughout the premises in a manner to ensure 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 [HC Spec 2.8 (2)].

(3) Operators must ensure the water reticulation system is designed, installed and operated in a manner that prevents:

a) cross connections between potable water and non-potable water;
b) stagnant water (i.e. no dead ends or unused pipes in the system); and
c) back flow that may cause contamination of the water supply [HC Spec 2.8 (2)].

(4) Operators must maintain water pipes, storage tanks and facilities and other parts of the reticulation system in good condition [HC Spec 2.2 (2)].

(5) Flush the reticulation system (i.e. open taps 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.

(6) Check and flush your reticulation system, where processing is seasonal, before pre-season cleaning is carried out.

Guidance
Include in the documented reticulation management plan:
- an up-to-date plan/schematic of the reticulation system e.g. using a site plan; and
- procedures for systematic checks:
  - on all water reticulation pipe work, equipment and storage facilities;
  - on integrity of all backflow prevention devices and valves connecting potable and non-potable water reticulations; and
  - for evidence of leaks.

3.4.7.1 Procedures for non-complying water

(1) Operators must cease all operations requiring the use of potable water if:

a) the independent supplier (e.g. local council) advises the operator that the water is not fit for drinking without additional treatment [HC Spec 2.11 (2)];
b) the operator has reason to believe that the water is not fit for use and the operator has no other means described in the RMP to ensure the water is potable at the point of use [HC Spec 2.11 (2)];
c) water used is supplied by the operator and the operator fails to comply with any of the requirements of the water management plan clause 3.4.8 (including corrective actions) and has no other means described in the RMP to ensure the water meets the original standard at the point of use [HC Spec 2.11 (3)]; or
d) a 'boil water' notice is issued and the operator is not able to:

i) comply with it in respect of all potable water;
ii) treat the water to ensure that it is potable; or
iii) use an alternative supply which meets the standards [HC Spec 11.2].

Guidance
Base your water treatment on a worst case scenario. Contact a water consultant or your verifier to review your water management plan for the alternative supply to ensure that it is suitable.

The local council may issue a 'boil water' notice e.g. when *E. coli* persist in the water despite successive corrective actions, including disinfection. Local councils should inform processors in the event of a 'boil water' notice. This action is taken only when other forms of disinfection have not been effective. Refer to the Drinking Water Standards for New Zealand (DWSNZ).

Contact your verifier and advise them of the actions you have taken.

3.4.7.2 Handling and disposition of contaminated materials

(1) Operators must ensure when contamination with non-potable water occurs, the following actions are carried out:

a) affected edible bee product must not be used for human consumption [HC Spec 3.2 (2)];
b) affected product contact surfaces must be cleaned and sanitised prior to reuse [AP Reg 11]; and
c) affected packaging materials that cannot be effectively cleaned and sanitised must not be used for packing of any edible bee product [HC Spec 7.2 (4)].

3.4.8 Water management plan

(1) Operators must implement a water management plan for water supplied by:

a) an independent supplier and is subjected to any treatment by the operator; or
b) the operator solely for the operator's use; or
c) an alternative water quality standard [HC Spec 2.9 (1)].

(2) Operators must ensure the water management plan includes:

a) any additional treatment:

i) as required by the independent supplier or operator supplying potable water; or
ii) as determined through an analysis of hazards and other risk factors;

b) the water quality standard (including criteria) as determined through an analysis of hazards and other risk factors;
c) a water sampling and testing programme;
d) an action plan in the event of non-compliance with the water management plan; and
e) the requirements of the reticulation management plan described in [HC Spec 2.9].

(3) Operators must reassess each applicable potable water source that he or she supplies by completing the Water Supply Assessment Checklist (Appendix 1):

a) at least once every 3 years;
b) prior to using a new operator source of potable water (i.e. the source changes or a new source is added); and
c) within one month of any changes to the environment in or around the water source that may affect the potable water quality [HC Spec Schedule 1].

3.4.9 Water treatment

(1) Operators must ensure the water treatment system is installed and maintained in accordance with the manufacturer's instructions [HC Spec 2.2 (2)].

(2) Operators must document details of the water treatment in the water management plan including the following:

a) the type of water treatment;

b) parameters;
c) procedures for control, monitoring and testing;
d) acceptable limits;
e) a water sampling and testing programme for monitoring the effectiveness of the specific water treatment applied; and
f) corrective action procedures when the water source is found to be unsatisfactory based on the results of any tests done [HC Spec 9.2 (1)].

Guidance
Examples of water treatment that may be applied by the operator to an independent supply or their own supply include chlorination, UV treatment, heating, coagulation, flocculation and filtration.

Consult with a water treatment expert to determine the most appropriate treatment for the supply.

Discuss the types and frequency of the water testing, with the supplier of the particular treatment, necessary to:
- confirm the effectiveness of the treatment; and
- ensure that it does not adversely affect the quality of the water.

(3) Operators must in addition to having a water reticulation management plan, implement a water management plan if the water is solely for the operator's use [HC Spec 2.9 (1)].

(4) Additionally to the requirements given in 3.4.8 Water Management Plan, it must include:

a) an initial assessment of the water supply status by the operator by completing the Water Supply Assessment Checklist in Schedule 1 of the current version of the Animal Products Notice: Specifications for Products Intended for Human Consumption; and
b) documenting a water management plan if required. This can be simply done by completion of a separate section D1 for each problem identified in the checklist which documents the identified problem and what is being done to manage it [HC Spec 13.7].

Guidance
Check the copy of the Water Supply Assessment Checklist (is available in Appendix 1), and also provided on the MPI website as a separate document for ease of downloading and use. Use this checklist to determine whether the water source is secure or satisfactory, and if additional treatment and/or other corrective action should be applied by you.

Guidance on ways to keep roof water safe is provided in Water Collection Tanks and Safe Household Water, Ministry of Health, August 1999 (code 10148). Guidance on protecting bore and well water is provided in Secure Ground Water (Bores and Wells) For Safe Household Water, Ministry of Health, March 2000 (code 1129). Read Household Water Supplies (code 4602) for more information on water safety and tank installation, available from your local public health service or your local authority (council).

Contact a Health Protection Officer at your local public health service or an Environment Health Officer at your local council if you are concerned about your water supply. They will be able to recommend a local water testing laboratory.

3.4.10 Water sampling and testing

(1) Operators must ensure potable water at the point of use meets the criteria set out in Table 3: Quality of Potable Water. The minimum testing frequency required is given in Guidance Table 5: Frequency of Ongoing Testing [HC Spec Schedule 1 Part 1].

(2) Operators must ensure microbiological testing is done by an MPI Recognised Laboratory with the required analysis within the laboratory accreditation scope [HC Spec 2.10].

Guidance

Any water testing should be done by an MPI Recognised Laboratory accredited to ISO/IEC 17025 with the required tests in the laboratory's scope of accreditation.The testing laboratory needs to have at least accreditation to the international standard ISO/IEC 17025 (by IANZ) as a minimum.

Additionally there is a list of tests recognised by MPI: Consolidated List of Tests for Animal Products: meat, poultry, honey, seafood, dairy, live animals and germplasm.

Operators who use an independent water supply that is not further treated on site do not have to carry out water testing. They should consider using simple, low cost techniques such as monitoring free available chlorine levels and temperature to pick up any changes in water quality. Resources should be in place to take microbiological and chemical samples should these checks indicate a potential issue.

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 (e.g. identifying sampling points on the reticulation plan);
- ensure the sample bottle for chlorinated water supplies contain sodium thiosulphate to neutralise the residual chlorine in the water sample;
- ensure that samples are collected by trained personnel;
- have a documented procedure to ensure samples are taken, handled and transported so there is no significant change in the quantitative value of the determinants; and
- ensure that samples for microbiological analysis are analysed promptly.

If the laboratory cannot analyse samples within one 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.

(3) Operators must ensure water samplers are trained by or receive instruction on how to correctly sample water from the laboratory selected [HC Spec 2.10 (2)].

(4) Operators must ensure chlorine, pH and turbidity measurements are performed by a suitably skilled person using documented methodologies (including calibration procedures) and/or calibrated equipment [HC Spec 2.10].

(5) Operators with a secure water source are not required to test their water after the initial testing has been completed which confirms compliance with Guidance Table 5: Frequency of Ongoing Testing. Ensure all other water sources are subject to ongoing testing according to the frequency below.

Guidance Table 5: Frequency of Ongoing Testing

Type of operation	Microbiological testing	Turbidity testing	pH testing (for chlorinated water)	Chlorine testing (for chlorinated water)
Honey extractors, packers and processors that operate on a seasonal	1 test per year done before the start of the season *	1 test per year done before the start of the season *	1 test per year done before the start of the season *	Daily

Type of operation	Microbiological testing	Turbidity testing	pH testing (for chlorinated water)	Chlorine testing (for chlorinated water)
basis (i.e. 0 - 6 months during the honey flow)				
Honey extractors, processors and packers that operate for 6 months or more	1 test per 6 months	1 test per 6 months	1 test per 6 months	Daily

* Water testing must be undertaken and acceptable results obtained before pre-season cleaning of the premises, facilities and equipment [HC Spec Schedule 1 Part 1 Table 2]

3.4.11 Monitoring

(1) Regularly check procedure compliance.

3.4.12 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for water:

a) completed Water Supply Assessment Checklist (for operator supplied water);
b) water reticulation plan;
c) water management plan, if applicable;
d) plan/schematic of the reticulation system;
e) any water testing results; and
f) observations from monitoring, any water treatment applied, and any corrective action taken.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

3.5 Equipment

3.5.1 Purpose and Scope

(1) To ensure that all equipment is designed, constructed and maintained in a manner that minimises contamination of product.

3.5.2 General requirements and procedures

(1) Operators must ensure equipment is:

a) durable and capable of withstanding repeated exposure to normal cleaning and sanitising;
b) resistant to chipping, cracking, flaking, delamination and abrasion;
c) able to withstand exposure to heat, water and all products expected to be processed under normal operating conditions; and
d) corrosion resistant [HC Spec 2.2 (1)].

(2) Operators must provide cleaning and sanitation facilities and equipment to ensure that personnel hygiene, hygienic condition of equipment, vehicles, conveyances and premises can be maintained [HC Spec 2.3 (4)].

(3) Ensure all surfaces in direct contact with any product are inert to the product, cleaning materials and other substances that it is likely to be exposed to under normal conditions of use.

(4) Operators must use only approved maintenance compounds during processing operations and in the maintenance of processing areas, facilities and equipment [HC Spec 3.4 (1)].

Guidance
Refer to 6.7 Control of Maintenance Compounds for further guidance on chemical compounds.

Contact surfaces
- stainless steel (300 series or better) is the preferred material for equipment that comes into contact with honey and other edible bee products;
- cast iron is not recommended for product contact surfaces because it is readily corroded and surfaces become roughened and pitted, which makes cleaning difficult;
- galvanised metal is not recommended because the zinc coating wears off to expose the base metal which corrodes. In addition, the zinc coating is soluble in acidic food, and in acid and alkali detergents. Where galvanised metal is present in equipment and it is practical to do so, it may be coated with a food-grade protective coating;
- aluminium is not recommended. It has a tendency to warp, is susceptible to oxidation, and is also prone to corrosion;
- wood is not considered a suitable material for the construction of food machinery. Its porous nature allows products to penetrate the surface and once impregnated it cannot be cleaned effectively. Residual product provides a nutrient source for micro-organisms;
- copper and its alloys, such as bronze, and brass, should not be used for direct product contact. Acidic foods may dissolve and erode copper sufficiently to pose a food hazard;
- new equipment for direct contact use with honey and other edible bee products should be provided with a letter of guarantee from the supplier certifying its suitability for food use; and
- where appropriate, have internal corners or angles with a continuous smooth radius of at least 7 mm. A lesser radius may be used where necessary for proper functioning of parts or to facilitate drainage, provided that such areas can be readily cleaned.

3.5.3 Personal hygiene equipment

(1) Ensure hand washing units are:

a) sufficient in number to allow for effective hygiene;
b) located in areas that are readily accessible to all persons working in or entering a processing area;
c) located close to points of the process involving manual handling of the product; and
d) provided with warm potable water and approved soap.

(2) Additionally single use towels or other hand drying facilities that do not contaminate washed hands or the surrounding area should be provided adjacent to hand wash units.

(3) Provide for disposal of single use hand drying towels, where appropriate.

(4) Prohibit the use of roller towels and air dryers on the processing floor.

(5) Provide facilities for washing water proof clothing (e.g. boots, aprons, gloves).

(6) Ensure wash facilities are designed, constructed and located:

a) to suit the operator, the protective clothing that is worn and the equipment that is used; and
b) in a manner that minimises splashes onto surrounding areas, products and equipment.

Guidance
Sanitise taps and basins before use as part of your cleaning and sanitation programme.

It is recommended to have non-hand operable (e.g. foot, knee, sensor) taps for hand washing.

The recommended temperature range for warm potable water for hand washing is 38-44°C at the point of use.

3.5.4 Monitoring equipment

(1) Ensure monitoring equipment have the capability, accuracy and precision appropriate for:

a) the product, process, facility or equipment it is fitted to; and
b) the measurement being taken.

(2) Operators must ensure monitoring equipment is:

a) installed so measurements can be easily read;
b) able to take accurate readings of the relevant parameter (e.g. warmest temperature of the refrigeration equipment or facility and the coldest temperature of the heating equipment); and
c) adequately protected from physical and chemical damage.

(3) Calibrate measuring equipment that is used to carry out a critical measurement [HC Spec 6.2 (2)].

Guidance
Calibration requirements are described in 6.5 Calibration of Measuring Equipment. Determine any critical measurements when developing your RMP.

3.5.5 Motors, drives and pumps

(1) Ensure motors, drives and pumps, including vacuum pumps, associated with processing equipment are:

a) appropriately designed and managed; and
b) suitably maintained so that food grade lubricants and smoke do not cause contamination of the food or process.

(2) Ensure lubricants meet the requirements of 6.7 Control of Maintenance Compounds.

3.5.6 Cleaning equipment - hoses

(1) Equip the premises, where required, with an adequate number of hose connection points to enable effective cleaning.

(2) Provide appropriate facilities for the storage of hoses, where fitted, to ensure hose ends are free from contact with the floor.

(3) Ensure hose materials are:

a) not a source of contamination to any product;
b) able to be adequately cleaned and maintained under the normal conditions of use; and
c) kept in good condition.

3.5.7 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for equipment:

a) supplier guarantees or certificates.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

3.6 Amenities

3.6.1 Purpose and Scope

(1) To ensure design and construction of amenities (including toilets, wash rooms, locker rooms, change rooms, lunch rooms and cafeterias) are fit for intended purpose.

3.6.2 Lockers

(1) Construct any lockers provided for the storage of clothing and other personal belongings in the amenities so that:

a) there is adequate free space to allow for easy cleaning of lockers and their surrounding area; and
b) ~~no material can be stowed on top of the lockers or set flush with the walls~~lockers should be set flush with walls or ceilings so that no material can be stored on top of the lockers.

(2) Provide physical separation from other items when storing food area PPE in lockers.

(3) Provide dedicated facilities, where appropriate, for:

a) depositing dirty clothing;
b) storing clean clothing; and
c) laundering of dirty PPE on the premises or by contract arrangement.

3.6.3 Location of amenities

(1) Employees have access to amenities for:

a) eating; and
b) changing clothes and storing personal belongings; and
c) toileting and hand washing.

~~Where the RMP boundary extends to include e.g. amenities that are some distance from the processing operation or buildings, these amenities should be easily accessible for personnel to use without compromising personnel hygiene.~~

Part 4: Repairs and maintenance

4.1 Overview

(1) This Part covers the aspects of:

a) Programmed and non-programmed maintenance;
b) Building maintenance; and
c) Equipment maintenance.

4.2 Programmed and non-programmed maintenance

4.2.1 Purpose and Scope

(1) To ensure that premises, facilities and equipment are maintained in good working order.

4.2.2 Programmed maintenance

(1) Operators must inspect buildings, facilities and equipment routinely and systematically to identify and correct items that require preventative repair and maintenance [AP Reg 11 (1)].

(2) Ensure programmed maintenance is conducted at a time and in a manner that will not affect product safety and suitability.

(3) Ensure programmed maintenance only occurs during processing if the impact on product safety and suitability is managed appropriately.

Guidance
Ensure maintenance occurs at the end of the processing period. If this is not practicable, it should take place at a time that reduces the opportunity of contaminating exposed ingredients, packaging and product. This could be at a normal work break during processing.

A delay in completing programmed maintenance is acceptable in some situations (e.g. when parts are not available due to factors outside the operator's control) provided it does not affect product safety and suitability.

(4) Ensure the frequency of programmed maintenance so that buildings, facilities and equipment remain suitable for producing safe and suitable product.

(5) Consider how frequently maintenance checks need to be conducted (e.g. daily, weekly, or less frequently). Repetitive problems or breakdowns may indicate that the maintenance frequency needs to be increased, or equipment/facilities need replacing.

(6) Consider and appropriately manage any risk to product safety and suitability that construction and renovation activities may cause.

Guidance
Consider the impact of construction and renovation activities on product safety during the planning phase of these activities. Implement appropriate measures to prevent product contamination.

Increase the amount of contaminant monitoring in surrounding processing areas during construction or renovation. Processing should not occur in areas directly affected by construction and renovations.

Consider having lock out or tagging systems to protect against inadvertent operation and sign-off of any intrusive maintenance. Evidence of the completion of work e.g. electrical certification is advised.

4.2.3 Non-programmed maintenance (including emergency maintenance)

(1) Take all practical steps to ensure there is no adverse effect on product safety or suitability from non-programmed maintenance.

(2) Notify the supervisor immediately of any situation which requires non-programmed maintenance.

(3) Before any non-programmed maintenance work begins, ensure a suitably skilled person:
   a) assesses the potential of the work and associated activities to contaminate:
      i) product;
      ii) ingredients;
      iii) packaging;
      iv) equipment; and
      v) the processing environment;
   b) puts in place appropriate controls to protect these items where possible and minimise contamination.

(4) Consider the impact of the defect on product safety and suitability and assign it to one of three categories: critical, major or minor.

Guidance
It is common practice to categorise defects as:
- **critical -** a defect that would have a direct or immediate effect on product safety (e.g. damage to, or severe deterioration of a product contact surface, processing equipment failure, etc.);
- **major -** a defect that may result in a direct effect on product safety by introducing a conflicting hygiene status; and
- **minor -** a defect which is not expected to have any direct effect on product safety.

(5) Determine the urgency of which non-programmed maintenance should be undertaken when defects (e.g. breakdowns) occur:
   a) **critical defects**, operators should take all practical steps to ensure they are repaired immediately;
   b) **major defects** should be repaired at the earliest opportunity (i.e. at the end of the processing period); and
   c) **minor defects** should be repaired as the opportunity arises. The operator should set a date for correction of the defect.

Guidance
When determining the urgency of non-programmed maintenance, operators should consider the stage in processing, including the processing environment conditions.

Repairing a minor defect should be scheduled as part of programmed maintenance and corrected within 6 months of being raised, or sooner where possible.

4.2.4 Breakages (glass and other physical hazards)

(1) Ensure in the event of a breakage during processing, the operator should:
   a) isolate the affected area;
   b) notify the supervisor in charge of area of the incident;
   c) ensure any affected PPE is changed;
   d) use appropriate equipment to remove the breakage and clean the area;
   e) identify and isolate any affected product and apply appropriate disposition;
   f) assess the hygienic status of the affected area and confirm as acceptable prior to resuming processing; and
   g) document the issue and the corrective actions taken.

4.2.5 Temporary repairs

(1) Ensure temporary repairs:

a) do not affect the hygienic status of equipment, processing areas or the safety or suitability of product; and
b) are recorded on the maintenance system to be permanently repaired within an allocated time, as determined by the repair's impact on product safety and suitability.

Guidance
A temporary repair is acceptable to resolve an issue whilst allowing processing to continue in the short-term, when a permanent or complete repair cannot be made.

4.2.6 Approved maintenance compounds

(1) Using maintenance compounds within processing and support areas must be in accordance with manufacturers' directions and the conditions approved by MPI. Include compounds where there is potential for incidental product contact (e.g. sanitiser, lubricants, and surface treatment compounds).

Guidance
Refer to 6.7 Control of Maintenance Compounds for additional procedures.

4.2.7 External environment

(1) Operators must maintain external areas within the RMP boundary in a tidy condition to minimise potential sources of contaminants and harbourages for pests [AP Reg 11].

Guidance
Ensure roadways and car parks are tar sealed or concreted.

Ensure landscaped areas (e.g. shrubs, trees, grass) are not in close proximity to buildings where product is processed.

Unused equipment should be covered and stored on hard standings away from buildings where product is processed or stored. Storage on grassed areas may increase the likelihood of pest harbourage due to the difficulties of maintaining the grass height.

4.2.8 Records

(1) Refer to clause 4.4.7 Records.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

4.3 Building maintenance

4.3.1 Purpose and scope

(1) To ensure buildings are maintained to prevent being a source of contamination.

Guidance
Maintain roofs, gutters and drains to prevent build-up of debris that may lead to ponding, flooding, leaks and attract the harbourage of pests.

Coverings over windows, doors, vents and openings should be maintained to minimise the entry of pests.

4.3.2 Services

(1) Maintain on-site services that affect the production of safe and suitable product. This includes water reticulation systems, waste water and sewage systems, and electricity supply (where appropriate).

(2) Service maintenance should be part of the programmed maintenance schedule.

4.3.3 Processing areas, support areas and amenities

(1) Operators must maintain processing areas, support areas and amenities to:

a) allow for appropriate cleaning and sanitation to take place; and
b) ensure the integrity of the hygienic envelope [AP Reg 9 and 11].

Guidance
Examples of items that may affect product safety if poorly maintained include:

- exposed wood;
- openings to the outside environment such as windows, doors, and vents; and
- fixtures and fittings (e.g. cracks and crevices in ceilings, walls, floors, flaking paint, overhead leaks from pipes, equipment attachments).

4.3.4 Engineering and woodworking workshops, equipment and tools

(1) Prevent debris from engineering workshops (e.g. swarf, sawdust and other unwanted materials) from entering processing or support areas.

Guidance
This may be achieved by keeping doors closed, the use of swarf mats, boot washes etc.

(2) Operators must ensure equipment, tools and parts used for repairs and maintenance in processing and support areas are not a source of contamination [AP Reg 11].

(3) Implement a 'tools and parts reconciliation system' to ensure all tools taken into processing or support areas are accounted for once maintenance is complete.

(4) Remove and/or return tools to storage or a designated area (e.g. a shadow board) once maintenance or repair work is complete.

Guidance
Assess tools, tool kit and parts for their suitability for use in the intended environment. Where necessary clean and sanitise these before being taken into processing and/or support areas.

A reconciliation system could include tool kit monitoring, shadow boards, counting and recording the number in and out, verification and sign-off once maintenance is complete via e.g. a work order.

4.3.5 Records

(1) Refer to clause 4.4.7 Records.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

4.4 Equipment maintenance

4.4.1 Purpose and scope

(1) To ensure equipment is maintained and not a source of contamination.

4.4.2 General requirements and procedures

(1) Operators must maintain equipment to ensure it is not a source of contamination to product [HC Spec 2.3 (4)].

(2) Determine the frequency of maintenance based on:

a) the type of equipment;
b) its intended use;
c) frequency of use; and
d) manufacturer's recommendations (where available).

(3) Operators must regularly update the maintenance schedule (as a controlled document) to ensure the maintenance requirements for new or re-commissioned equipment is included [RMP Spec 19 (2)].

Guidance
Where manufacturer's recommendations are not available, maintenance frequencies should be based on the operator's knowledge of equipment performance, reliability and consistency.

Equipment maintenance checks should also include an assessment of:

- the equipment's overall condition and integrity (e.g. is it working properly);
- sources of physical contaminants (e.g. damaged, lost or worn parts, rust, loose flaking paint, loose parts on equipment prone to vibration, broken parts such as needles and blades etc.); and
- micro-organism harbourage sites (e.g. worn or frayed hoses, gaskets or belts, porous welds, product contact surfaces).

Repetitive equipment problems or breakdowns may indicate that the maintenance frequency should be reviewed and increased, or that the equipment needs to be replaced.

4.4.3 Damaged, decommissioned or idle equipment

(1) Store damaged, decommissioned or idle equipment in an appropriate way to ensure it does not become a source of contaminants or harbour pests.

(2) Ensure equipment that could be a source of contamination is:

a) physically isolated from processing lines and product; or
b) removed from processing areas.

(3) Clearly identify damaged or decommissioned equipment that remains in processing areas.

Guidance
Where possible, remove damaged or decommissioned equipment from processing areas. Decommissioned equipment may be stored outdoors, but should be placed on a hard standing (e.g. concrete, sealed or paved area) and covered.

It is recommended to operators that they document why equipment is decommissioned or damaged as these details can be helpful when determining the equipment's suitability for repair or re-commissioning.

4.4.4 Returning equipment to use (including re-commissioning equipment)

(1) Document a procedure to ensure that equipment returned to use (i.e. after repairs and maintenance, re-commissioning or having previously been idle) is not a source of contamination to the product.

(2) Ensure the procedure includes steps to:

a) thoroughly clean and sanitise equipment before being returned into a processing or support area;
b) revalidate previously validated equipment if the repairs and maintenance activity may affect its validation status; and
c) perform a pre-operational check before processing re-commences.

4.4.5 Maintenance personnel and contractors

(1) Ensure that maintenance workers, including contractors are:

a) competent to perform the required tasks;
b) trained to do their job without contaminating product (or if contamination occurs, able to follow appropriate product disposition procedures);
c) where possible, to minimise contamination of the surrounding environment; and
d) trained in, and adhere to hygienic requirements.

Guidance
Examples of minimising contamination of surrounding environment include:
- adequate clean-up upon completion of the work; and
- the use of dedicated tools or at least a sanitation step to minimise cross contamination.

Refer to 2.2 Personnel Health and Hygiene for further guidance.

Ensuring contractors are trained can be achieved in several ways, including:
- providing contractor inductions or refresher training;
- use of approved supplier databases; and
- having identification and supervision (where appropriate) whilst on site.

4.4.6 Monitoring

Guidance
For extractors and packers who operate on a seasonal basis, check compliance with requirements for design and construction before the start of each season. An example of a pre-season checklist is given in Appendix 2 (a copy of the checklist is available as a separate document on the MPI website for ease of downloading and use).

4.4.7 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for maintenance:

a) repair and maintenance activities and systems;
b) site plan with the RMP boundary; and
c) verification activities.

Guidance
Records may be kept as a daily diary, logbook, completed form or checklist.

Records should include the following:
- a maintenance schedule

- maintenance records or job sheets including:
  - when and how the defect breakdown was repaired;
  - who conducted the work;
  - who has signed-off that it was completed;
  - any findings/issues;
  - that appropriate equipment "return to use" procedures were followed;
- corrective action records (including details of affected product if applicable); and
- verification records.

Comprehensive maintenance records will assist the operator to verify that the repairs and maintenance programme is working correctly.

It may also be useful in the event of a food safety incident or trace back situation and may help to reduce the risk to the business.

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to 2.1 Document Control and Record Keeping requirements.

Part 5: Cleaning and sanitation

5.1.1 Purpose and scope

(1) To ensure the effective cleaning and sanitation of the premises, facilities and equipment to prevent or minimise the contamination of edible bee products.

5.1.2 General requirements and procedures

(1) Operators must ensure that all areas of their site (e.g. within the physical boundaries) of the RMP, including the facilities, support areas and equipment, are maintained in a clean and sanitary condition appropriate to the use of the area [AP Reg 11 (1)].

(2) Operators must use only approved maintenance compounds during processing operations or in the maintenance of processing areas, facilities and equipment [HC Spec 3.4 (1)].

(3) Any maintenance compounds used during processing operations must be approved for that purpose before use [AP Reg 11 (4)].

(4) Operators must develop and implement a written cleaning programme for all of the following:

a) processing areas;
b) storage areas;
c) freezers, chillers or cool rooms (if relevant), hot rooms;
d) equipment;
e) amenities; and
f) external areas of the premises [AP Reg 11].

(5) Ensure the cleaning programme includes the following information:

a) areas and equipment to be cleaned;
b) procedures for all cleaning and sanitising operations, including the cleaning method, frequency of cleaning and sequence of cleaning;
c) detergents/sanitisers to be used, their concentration, application method and contact time required;
d) the identity or positon of person(s) responsible for the cleaning activity;
e) methods and frequencies of monitoring and verification of the effectiveness of the cleaning and sanitation procedures; and
f) cleaning records forms or check sheets.

Guidance

Refer to 2.4 Operator Verification and Notifications.

Clean food processing areas, facilities and equipment in accordance to the cleaning programme. Frequency should be often enough to minimise or prevent cross contamination of product.

Regularly clean and sanitise other items that may contaminate products indirectly (e.g. handles of doors and refrigerators, taps, hand wash basins etc.).

The effectiveness of cleaning and sanitation can be verified by direct or indirect microbiological testing (e.g. using swabs) of the relevant environment and contact surfaces.

Operators may choose to incorporate existing documented information into their cleaning and sanitation programme by reference.

5.1.3 Cleaning methods

(1) Operators must carry out cleaning activities in a way that will minimise contamination of:

a) bee products;
b) ingredients;
c) product contact materials (e.g. packaging); and
d) previously cleaned areas, structures facilities or equipment [AP Reg 10 and 11].

(2) Train workers adequately on the handling of cleaning chemicals and the implementation of the cleaning programme.

(3) Use cleaning compounds in accordance with procedures given in 6.7 Control of Maintenance Compounds.

(4) Ensure the cleaning method is appropriate to:

a) the product and the operation;
b) the type of surface to be cleaned; and
c) the type and characteristics of the residual material or dirt to be cleaned off the surface.

Guidance
Care is required to avoid re-contamination. Cleaning from clean areas towards dirty areas can help minimise the spread of contamination e.g. example, walls should be washed before floors. However when hosing floors, high-pressure hoses can re-contaminate previously cleaned surfaces with waste water.

Most processing areas will require a wet cleaning routine.

Cleaning using a mixture of wet and dry methods may be suitable in some circumstances (e.g. support areas, packing areas that require occasional wet cleaning).

5.1.4 Wet cleaning

(1) Wet cleaning (e.g. water and steam) should be contained within the immediate area that is being wet cleaned to prevent wetting dry ingredients, packaging, products and dry product areas.

(2) If product is not removed from the wet cleaning area, the amount of water used should be limited to that necessary to complete the cleaning procedure and not be a source of contamination.

(3) All equipment and food surfaces that are wet cleaned should be free from residues and moisture before processing restarts.

5.1.5 Dry cleaning

(1) Dry cleaning is recommended for areas where dry materials are handled and stored including:

a) ingredient and packaging stores;
b) preparation areas for dry ingredients; and
c) outer packaging areas.

(2) Dry cleaning methods include brushing, scraping and vacuuming.

(3) Dry cleaning in areas with exposed ingredients or product is only appropriate where moisture level in products are below levels sufficient to support microbial growth.

5.1.6 Cleaning inspection

(1) Cleaning checks or inspections should be undertaken on a regular basis, as indicated in the cleaning and sanitation programme to:

a) ensure compliance with the cleaning and sanitation programme; and
b) check the effectiveness of cleaning by assigned personnel.

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

(3) If a pre-operational hygiene check shows a problem:

a) the source of the contamination should be fixed (immediately if there is a food safety risk); or
b) the frequency of cleaning should be increased sufficiently to manage the problem.

(4) Pre-operative hygiene checks of the area and equipment to be used should be completed before the product requiring the higher hygienic status is processed.

Guidance
For further guidance on pre-operative hygiene checks, refer to 2.4 Operator Verification and Notifications.

5.1.7 Equipment used for cleaning

(1) Ensure cleaning equipment should not be a source of contamination to bee products, ingredients, packaging and other material.

(2) Ensure cleaning equipment is:

a) used for cleaning purposes only;
b) stored in a hygienic manner when not in use; and
c) maintained in a good state of repair.

Guidance
Where possible, single use cleaning equipment is recommended. Multiple-use cleaning equipment (e.g. re-useable cloths, brushes, squeegees etc.) should be cleaned and sanitised daily or at a frequency to minimise cross contamination between cleaning activities.

Ensure equipment removed from a dry processing area for purposes of wet cleaning is dry prior to its return.

5.1.8 Pre-season cleaning and maintenance check for extraction premises

(1) Carry out a complete and thorough cleaning of the extraction premises, facilities and equipment before the start of each extraction season. Check all facilities, essential services (e.g. water, power) and equipment to ensure that they are in good working order ready for operation to commence.

(2) Keep records that these tasks have been completed. An example of a pre-season checklist is given in Appendix 2 (a copy of the checklist is available as a separate document on the MPI website for ease of downloading and use).

(3) Remove stored materials and items that may have been stored in the hot room, store room and extraction room during the off-season.

(4) Clean walls, floors, ceiling, windows, doors, light fixtures, sinks, fans, bee escapes and other fixtures with suitable cleaning agents so that they are visibly clean and free of honey and bee product residues, dirt, dust, moulds, insect parts and waste, and other debris.

Guidance
Check the condition of the floor and walls. They may need to be resealed.

Water tests to demonstrate potability are required before processing starts, refer to 3.4 Potable Water.

(5) Ensure all product contact surfaces, including equipment, containers and other implements, are:

a) washed with a suitable detergent, or plain water and sanitiser; and
b) rinsed, drained and allowed to dry.

(6) Clean and tidy external areas surrounding the buildings and access ways. Ensure they are free from any evidence of pest infestation or accumulated waste.

5.1.9 Cleaning during operations in the extraction, processing and packing areas

(1) Use wet cloths for the ongoing wiping of external surfaces of equipment to remove honey residue. Maintain the cloths in a clean and sound condition. Regularly replace water contained in buckets for rinsing wiping cloths.

(2) Wiping cloths should not be used for wiping contaminated surfaces such as the floor. They should be washed with detergent and sanitised daily.

Guidance

Sanitise wiping cloths by:

- soaking in an approved sanitiser;
- soaked in chlorinated water; or
- put through a laundry process.

(3) Clean up honey spills on the processing floor immediately. Spilt honey should not be used for human consumption. Provided it is not contaminated with any chemical substance, spilt honey may be used for animal consumption.

(4) Operators must clearly identify any contaminated honey as not for human consumption [HC Spec 8.2 (4)].

(5) Collect waste in identified waste containers and do not allow waste to accumulate where it can contaminate any edible bee product or product contact surfaces.

5.1.10 Cleaning at end of day in the extraction, processing and packing areas

(1) Remove products, packaging material and other materials from the area that may be contaminated during wash down. Store them in appropriate locations, or protect by covering them.

(2) Dispose of any waste collected during the day appropriately in designated waste bins.

(3) Clean floors by hosing or other effective means. Drain or remove water completely.

(4) Remove visible contamination on walls by hosing, wiping with clean wet cloths or by other effective means.

(5) Clean equipment, including the pricker/loosener, uncapper, extractor, sump, conveyors, and work tables whenever it is necessary to:

a) enable the effective performance of the particular task;
b) remove residual honey that is contaminated with a hazard;
c) remove the build-up of foreign matter (e.g. wax, insects, and other debris);
d) prevent pest contamination of the honey; and
e) satisfy commercial requirements (e.g. switching to organic).

(6) Clean external surfaces of all equipment so they are visibly clean and free of honey and bee product residues, dirt, dust, moulds, insect parts and waste, and other debris.

Guidance

Wipe with wet cloths or hose down external surfaces of equipment as necessary.

5.1.11 Cleaning of storage areas

(1) Stack and store packed products, raw materials, packaging and other materials in a tidy manner. Adequate space should be available to allow effective cleaning in the storage area.

(2) Clean up spills immediately.

(3) Remove and dispose of damaged packaged products and other materials as soon as possible.

(4) Keep dry stores dry and clean regularly by sweeping or vacuuming.

> **Guidance**
> Packed products, raw materials, packaging and other materials should be stored off the floor e.g. use clean pallets.
>
> Refer to 6.23 Storage for further details.

5.1.12 End of season cleaning and off-season maintenance

(1) Clean facilities, walls, floor, ceiling, windows, doors, light fixtures, fans, bee escapes and other fixtures with suitable cleaning agents so that they are visibly clean and free of honey and bee product residues, insect parts and waste, and other debris.

(2) Disassemble equipment as necessary, clean thoroughly by washing, and dry to ensure that there is no honey residue that may attract pests and allow mould growth.

(3) Do not store the following materials in the hot room, extraction room, or any other processing room:

a) poisonous chemicals (e.g. solvents, insecticides, paint, fuel);
b) items heavily contaminated with soil, dirt, waste and other contaminants;
c) any organic material (e.g. fruits) that may deteriorate and cause microbiological contamination and pest infestation; and
d) any other material that could leave residual contaminants after the pre-season cleaning.

(4) Maintain external areas in a tidy condition so as not to attract pests and allow infestation.

> **Guidance**
> Carry out maintenance work on facilities and equipment during the off-season to minimise disruption and the potential for contamination.

5.1.13 Cleaning of amenities

(1) Regularly clean amenities and maintain in a hygienic condition.

5.1.14 Maintenance of cleaning equipment

(1) Cleaning implements and equipment should be maintained in a hygienic condition and should not introduce any hazard or foreign object to any edible bee product, packaging or product contact surface.

5.1.15 Monitoring

(1) Regularly check compliance with documented procedures and the effectiveness of the cleaning programme.

5.1.16 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for calibration:

a) cleaning records.

> **Guidance**
> Records may be kept in a daily diary, logbook, record form or checklist.

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to clause 2.1 for Document Control and Record Keeping.

Part 6: Supporting systems

6.1 Receipt of incoming goods for processing

6.1.1 Purpose and scope

(1) To ensure that incoming goods (e.g. honey, ingredients, packaging, etc.) received for processing are fit for intended purpose.

(2) To ensure that all incoming goods are sourced, handled and stored according to requirements.

6.1.2 General requirements and procedures

(1) Develop and implement written procedures for the sourcing and purchase of goods (e.g. honey, ingredients, packaging, etc.) to ensure they comply with agreed specifications.

(2) The operator should ensure that ingredients are not changed in a formulation without input from a suitably skilled person.

(3) Operators must store, handle and transport all process goods, including ingredients, additives and processing aids, so as to minimise any potential contamination or deterioration [HC Spec 14.8].

(4) Check goods on arrival (reception/inwards goods) or prior to use to ensure they are:
a) clearly labelled and are fit for purpose; and
b) obtained from suppliers who are trading under appropriate legalisation (e.g. Food Act, APA).

Guidance
For packaging requirements refer to 6.3 Packaging.

The operator should have an appropriate supporting system for goods (ingredients, additives and processing aids).

Consider the following points as appropriate:
- develop specifications for the input that are appropriate to the hazards that are reasonably likely to occur and considering how the input will be used;
- develop a list of approved suppliers;
- on receipt of the input, check the information provided by the supplier such as certificates of analysis or supplier guarantees; and
- check samples of the input periodically against specifications.

6.1.3 Handling and storage

(1) Operators must store input materials:

a) away from inappropriate or potentially harmful chemicals;
b) in an area that is clean, tidy and free from pests;
c) at the appropriate temperature as per manufacturer's instructions e.g. ambient, chilled or frozen;
d) off the floor in closed containers or packs when not in use; and
e) with clear identification [HC Spec 14.8].

(2) Ensure materials and ingredients are:
a) moved to appropriate storage rooms as soon as possible after delivery;
b) held at appropriate temperatures to maintain their safety and suitability for their intended purpose;
c) protected against contamination or damage during storage;
d) stored on racks, shelves or pallets to ensure no contact with the floor;
e) kept separate from maintenance compounds and other hazardous materials; and

f) properly labelled or identified.

Guidance
When dealing with the use and storage of part containers the operator should:
- ensure that clean and/or dedicated utensils are used for dispensing inputs;
- store the opened container in accordance with any manufacturer's instructions;
- ensure that the goods e.g. ingredient is used within any use-by-date (including part containers) as per manufacturer's instructions; and
- dispose any goods that is no longer suitable for processing or if information that should be available with the input is lost (e.g. identity, storage instructions, shelf life, etc.).

6.1.4 Tutin

(1) Operators must comply and keep documentation to support the compliance option(s) selected under the Food Standard: (Tutin in Honey) 2016.

(2) Failure to comply with these requirements may result in non-compliance with human consumption and export requirements.

Guidance

Operators wishing to export honey must comply with the management of tutin affected honey.

The Harvest Declaration is an industry term for the Apiarist and Beekeeper Declaration~~Statement or "statement"~~ referred to in this Part.

Most of the requirements in Food Standard: (Tutin in Honey) 2016 and Animal Products Notice: General Export Requirements for Bee Products 2018 (GREX)~~Animal Products (Harvest Statement and Tutin Requirements for Export Bee Products) Notice 2010~~ are not repeated in this Code and it is important that all operators are familiar with them.

An explanatory guide to meeting the requirements can be found in the Guidance Document: Compliance Guide to the Food Standard: Tutin in Honey 2016.

6.1.5 Receipt of honey, pollen and other bee products

(1) Each consignment or lot of honey supers, pollen or other bee products destined for export with official assurances must not be processed without a correctly completed Harvest Declaration indicating that it is suitable for processing for human consumption [GREX 2 (1)(e)~~Animal Products (Harvest Statement and Tutin Requirements for Export Bee Products) Notice 2010 5 (1)~~].

(2) The beekeeper supplying honey must be listed with MPI for any export product requiring official assurances [GREX 2.2 (1)(d)~~OAS 7.4~~].

(3) Operators must ensure the Harvest Declaration includes complete, legible and correct information and signed/dated by the appropriate beekeeper/apiarist. The operator must also sign/date the Harvest Declaration [GREX 4.2.4].

(4) Verifiers are required to verify the evidence that the appropriate beekeeper/apiarist is in full compliance with the Biosecurity Act 1993 American Foul Brood (AFB) Pest Management Strategy.

(5) When an apiarist or beekeeper extracts honey from supers from her/his own apiary, a Harvest Declaration does not need to be completed. However the apiarist or beekeeper must keep **all equivalent records** of all the information required by the Harvest Declaration [GREX 4.2.3 (2)~~Animal Products (Harvest Statement and Tutin Requirements for Export Bee Products) Notice 2010 5 (3)~~].

Guidance

Check all Harvest Declarations at 'reception':
- have been received before processing;
- are correctly completed; and
- are truthful and accurate.

Honey with an incorrect Harvest Declaration should not be processed until the Harvest Declaration has been correctly completed.

Equivalent records include:
- ~~apiarist~~ beekeeper's registration numbers;
- lot/batch numbers;
- harvest dates; and
- all other information such as tutin, ACVM and AFB compliance statements.

Equivalent records could be kept in the form of e.g.an excel spreadsheet.

If an operator chooses to develop a customised form that covers multiple deliveries, then a procedure should be in place to prevent supers arriving on site from being processed until that form (with all the product details) is available at the site to confirm eligibility of the product.

Export operators should refer to clause 4.2.3 of the GREX for an example of a Harvest Declaration.

Operators/beekeepers who elect to hold equivalent records, as required to be held on a Harvest Statement, should ensure that the "equivalent records" they hold will meet audit scrutiny.

A system should be in place for any honey from ~~local unregistered apiarists~~beekeepers not on the MPI beekeeper listing register to be held separate and only consigned for local market sales.

Verifiers will check at least one Harvest Declaration (or equivalent records), or transfers, at every routine RMP verification visit.

(6) When the Harvest Declaration indicates that the honey, pollen, or other bee product is not suitable for processing for human consumption (i.e. the statement has a 'No' answer or is in error for any reason), it may not be eligible for an official assurance.

(7) Operators must ensure each consignment or lot of honey supers, pollen, or other bee product is clearly identified so that it can be easily linked to the Harvest Declaration [AP Reg 18 (1)].

(8) Operators should have procedures for handling, identifying and separating honey that is ineligible for processing e.g. awaiting a corrected Harvest Statement.

6.1.6 Imported bee products and ingredients

(1) Before receiving any imported products / ingredients into the processing premises, the operator should obtain sufficient information from the overseas supplier to ensure the products / ingredients are fit for purpose.

(2) Checks should be made on arrival of imported products / ingredients at reception. The nature and extent of the monitoring will depend on the type(s) of products / ingredients received.

Guidance

Search on the MPI website for Import Health Standards for the importation of products and ingredients under the Biosecurity Act 1993. Also there are dedicated web pages on Food Imports for additional information.

6.1.7 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for incoming materials;
a) list of suppliers;
b) raw material, inputs and ingredient specifications;
c) Harvest Declarations;
d) any supplier guarantees or certificates of analysis;
e) any supplier audit reports; and
f) incoming goods checks and delivery documentation.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

6.2 Allergen management

6.2.1 Purpose and scope

(1) To ensure that those operators who process food products containing allergens and who also process products that are labelled "allergen free" manage the risk of allergens.

(2) Allergens refer to those substances in FSC 1.2.3 and Schedule 9.

6.2.2 General requirements and procedures

Guidance
This section applies to operators who process products containing allergens and who also process products that are allergen free.

Royal jelly is a known allergen – Food Standards Code 1.2.3-3.
Pollen and propolis are known food allergens – Food Standards Code Schedule 9.
Bee venom stings are known to cause an allergic reaction for some people.

"VITAL® decision making tool" is a tool that can be used to assist in allergen labelling. This tool and other useful information are available on the Allergen Bureau website at: http://www.allergenbureau.net/.

(1) Where appropriate, document procedures to manage allergens throughout the process from reception to load out. Ensure any allergens are included in HACCP analysis.

(2) Where appropriate, document cleaning procedures to minimise the possibility of cross contamination of allergens to products that are not intended to contain that substance.

(3) Cleaning procedures should include, as appropriate:

a) the cleaning of all surfaces, equipment, utensils, clothing and hands (personnel) that may have come in contact with products that contain allergens;
b) change-out of PPE;
c) management and clean-up of spills;
d) cleaning of hidden or static areas and dismantling of equipment to remove residues; and
e) evidence that the cleaning regime is effective in removing the allergens in question.

(4) Ensure that all relevant personnel have knowledge of:

a) the consequences of consumption of allergens by susceptible consumers; and
b) GOP in the management of allergens specific to:

i) their premises;
ii) types of products processed; and
iii) their roles and responsibilities.

(5) Document all formulations including ingredients, compound ingredients, substitute ingredients, additives and processing aids, and have knowledge of:

a) the presence of any allergens;
b) those that are derived from allergens; and
c) those that have a high likelihood of having been cross contaminated with allergens (i.e. may contain traces of allergens).

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

(7) Production and/or cleaning schedules should be managed to ensure that cross contamination of allergens does not occur i.e. products that do not contain allergens should be processed first.

(8) Ensure that if a product does not contain the same allergen as a previously processed product then a full clean down occurs, including the changing of PPE that may contaminate the product.

(9) Provide separation, by partition, location or other effective means to minimise the opportunity for cross contamination of allergens to non-allergenic products.

(10) The nature of the separation should be based on a thorough investigation of the products, processes, premises and equipment design and construction.

(11) Ensure reworked products containing allergens is not included in products that would otherwise be free of that substance.

Guidance
Consider cross contamination during storage and processing. Store possible inputs and products containing allergens separately where possible. Where this is not possible, store in sealed packaging or air tight containers etc. for segregation.

6.2.3 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for allergen management~~;~~:

a) the name and address of suppliers of raw materials and ingredients;
b) details about the supplied item, including the batch number, quantity, delivery date and allergen status;
c) the supplier status of any approved suppliers;
d) production records indicating the type, formulation and quantity of the finished products manufactured, the production or manufacturing dates and batch numbers, the use of any reworked products, and any repacking done;
e) an inventory system either electronic or hard copy that allows finished products to be traced;
f) load in and load out checks; and
g) the name and address of the person or company to which the batch of products are delivered to.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

6.3 Packaging

6.3.1 Purpose and scope

(1) To ensure that packaging materials used for containing edible bee products are fit for their intended purpose.

6.3.2 General requirements and procedures

(1) Packaging materials including outer packaging (e.g. transportation outers and wraps) must be stored and handled in a manner that minimises contamination of the packaging or products [HC Spec 14.8 (1)].

(2) Product contact packaging should be:
- a) checked on arrival to ensure it is intact, clean, clearly labelled, and matches the order;
- b) stored in a clean dry area, away from chemicals;
- c) protected from contamination when not in use;
- d) free from contaminating substances and objectionable odours; and
- e) clean, unused and undamaged at point of use.

(3) Do not take outer packaging materials (e.g. transportation outers and wraps), that product contact packaging is delivered or stored in, into food processing areas.

(4) Regularly check ongoing compliance with documented procedures.

6.3.3 Packaging process

(1) Ensure packing operations and equipment:
- a) are not a source of contamination; and
- b) minimises contact of the product with the outside of the packaging.

(2) Operators must handle products with damaged packaging in a manner that will minimise:
- a) the exposure or spillage of the product (e.g. products can be wrapped and sealed);
- b) contamination or deterioration of the product; and
- c) contamination of other products and the storage area [HC Spec 7.2 (4)].

(3) Repacking of product with damaged packaging should occur in a manner that minimises contamination.

(4) Any product that has been detrimentally affected as a result of the packaging damage should be dealt with in accordance with the requirements of 6.21Non-Complying Product and Recall.

Guidance
Use packaging that is fully sealed to prevent liquids from leaking out.

Confirm seals where leak proof (or similar) packaging integrity is claimed. The frequency of checks should be based on performance. Evidence of good seal formation can result in fewer checks. Increase the frequency if there is a trend of increasing seal failures until the problem is resolved.

6.3.4 Packaging specifications

(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, which applies equally to coatings and linings and cartons where these are the direct product contact surface;
- b) comply with the requirements specified in the current “Australian Standard: Plastics materials for food contact use”, 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 [HC Spec 7.2 (1)].

(2) Operators must ensure the type and composition of the packaging must be appropriate for its intended use [HC Spec 7.2 (2)].

(3) If the packaging is damaged such that the suitability for processing of bee product or the fitness for intended purpose of bee product may be affected, the bee product must be:

a) handled in a manner that minimises contamination and the damage to the packaging rectified; or
b) appropriately disposed of [HC Spec 7.2 (4)].

(4) Operators must retain records (e.g. supplier guarantees) that the composition of the packaging material complies with relevant legislation [HC Spec 9.2 (1)].

Guidance
The Food Standards Code does not specify details of materials permitted to be added to or used to produce food packaging materials. However, packaging when used should not cause food to be unsafe or tainted.

Therefore, it is the responsibility of food manufacturers and sellers to ensure their products are safe and that they comply with relevant legislation. In practice, packaging suppliers will need to ensure their products are suitable for the intended use. Compliance with recognised international food standards such as those of the European Union (EU) or the United States Food and Drug Administration (FDA) would be reasonable evidence that materials are suitable for food use.

Ensure packaging materials are of sufficient strength and durability to protect the products from exposure to contaminants that may be encountered during normal operations and in the distribution chain.

Discuss with suppliers how the packaging is to be used, for example, whether it is to be used for frozen or chilled products, whether it needs to be microwavable etc. This will need to be taken into consideration by the supplier when the supplier guarantee is given.

6.3.5 Metal drums

(1) Operators must ensure all metal drums, including new, reused and reconditioned drums, are coated or lined with a food grade coating to ensure it is appropriate for its intended use [HC Spec 7.2 (2)].

(2) The drum coating should:

a) provide a barrier between the metal surface of the drum and honey;
b) be inert;
c) not impart any flavour to honey;
d) be suitable for acidic foods such as honey; and
e) be resistant to delamination, flaking or peeling.

(3) Know the lining coating of any drum used for honey (i.e. new, reconditioned or re-used) and the standards they comply with.

(4) Operators must ensure reused drums that have contained other foods such as fermented honey, sucrose, glucose, or orange juice are thoroughly washed and dried, in such a manner as to remove all residues of the food material, before using for honey [HC Spec 7.2 (5)].

(5) Drums that have been used to contain non-food materials (e.g. petroleum products, food additives and other chemicals) should not be re-used for honey.

(6) Operators must check drums for damage, deterioration and contaminants prior to use to ensure that they are suitable for containing honey [HC Spec 7.2 (2)]. Do not use badly dented drums.

(7) Check the internal surface of drums have no cracks, rust, delaminated coatings, and other defects or damage that may impact on the safety and suitability of honey.

(8) Store empty and full drums in a manner that prevents deterioration of the drums, and the entry of water and contaminants into the drums.

(9) Ensure drums have properly fitted bungs that prevent the entry of moisture and other contaminants.

(10) Handle drums and transport in such a manner that prevents dents and other forms of damage.

(11) Operators must ensure potable water is used for washing of drums [HC Spec 2.5 (1)].

(12) Dry drums completely after washing and before being sealed with a bung.

Guidance

The internal lining should be approvable by the US FDA under Code of Regulations 175.300. Where products are to be eligible for export to the EU, all packaging materials should be compliant with the EU OMAR requirements for packaging. A specification or letter confirming the suitability of the lining should be provided by the drum supplier.

For drums that are to be reused, a heavy duty lining, such as a food grade epoxy phenolic lining (Coat G), is recommended. Note that some open-top drums used for containing other foods (e.g. anhydrous milk fat) are designed to be used with bags. Therefore, the lining of the drum and gasket of the lids may not be suitable for contact with honey.

Care should be taken when purchasing imported drums. Some imported closed-head drums have been used for chemicals and oils. These drums are difficult to recondition to a standard suitable for food use.

Drums should have tightly fitted bungs. Bungs should be sealed with a cap to indicate the product hasn't been interfered with. Loose bungs indicate that water and other contaminants could have entered the drums. For closed-head drums, it is common industry practice to use a torch to view the inside of the drum. A mirror should be used to check underneath the lid.
Dents can lead to cracking or delamination of the internal lining, and weakening of seams.

~~IBCs are not easily identifiable as being food or non-food grade. The source of IBCs should be checked and any recycled IBCs tracked.~~

For storage of drums refer to 6.23 Storage.

Washing and drying of drums

To facilitate drying, washed drums may be dried in hot boxes or rooms. Alternatively a hot air gun can be used.

6.3.5.1 Other bulk containers and recycled containers

(1) Operators must ensure other bulk containers (e.g. Pallecon, Ecobulk) are not a source of contamination to edible bee products [HC Spec 7.2 (5)]. This includes appropriate cleaning of containers before use to ensure they are not a source of contamination.

(2) Recycled bulk containers (e.g. drums, IBCs, pallecons etc.) should be identified so that they can be tracked. This ensures that you continue to use containers that you own and have evidence of their suitability for bee products. Containers like IBCs are not easily identifiable as being food or non-food grade visually.

6.3.5.2 Plastic packaging

(1) Plastics for food contact use must comply with the current US Code of Federal Regulations, Title 21 or be manufactured in accordance with the Australian Standard for Plastic Materials for Food Contact Use AS 2070-1999 [HC Spec 7.2 (1)]. Plastic materials included in this Australian Standard are:

a) polyethylene;
b) polyvinyl chloride compound (PVC);
c) styrene plastics material;
d) acrylonitrile plastics material;
e) polypropylene; and
f) poly vinylidene chloride compound (PVDC).

Guidance
Check the requirements for any other countries such as the EU for requirements for plastics if appropriate.

Letters of guarantee from suppliers are necessary for plastics. Non-food grade plastic can contain lead (extrusion die lubricant) or toxic plasticizers which can contaminate honey.

(2) Protect packaging materials during transport to the premises and during storage, against dust, pest and other contaminants, and physical damage.

6.3.5.3 Glass jars

(1) Ensure metal lids are coated or lined with a food grade material suitable for an acidic food such as honey.

(2) Protect glass jars during transport to the premises and during storage, against dust, pest and other contaminants, and physical damage.

Guidance
Store glass jars in an inverted position.

(3) Ensure glass jars are handled in a manner that does not cause any breakage or other damage.

(4) Remove broken glass and discard immediately. Thoroughly check to ensure that all broken pieces are removed.

6.3.6 Reusable packaging

(1) Operators must ensure reused and recycled packaging is not a source of contamination to edible bee products [HC Spec 7.2 (5)].

(2) Operators must ensure labels present on reusable packaging are up to date [HC Spec 8.4 (1)].

(3) Clean and sanitise reusable packaging (e.g. plastic dixies, bins etc.) which have been in direct contact with product.

(4) After cleaning and sanitising, ensure reusable packaging is dried and cooled to at least room temperature (25°C) by the operator before use.

(5) Ensure that the reusable packaging is not damaged (e.g. no sharp edges that may rip packaging) and remains suitable for re-use.

6.3.7 Process gases

(1) Process gases, e.g. the use of nitrogen in bee venom processing, must meet the current FSC 1.1.1-15.

~~6.3.7~~6.3.8 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for packaging:

a) a register of packaging and/or packaging supplier contact details;
b) any supplier statements or guarantees for product contact packaging and containers; and
c) records of any problems detected and any corrective action taken (including restoration of control, product disposition and prevention of recurrence) [RMP Spec 20 (2)].

Guidance
Records may be kept in a daily diary, logbook, record form or checklist.

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to 2.1 Document Control and Record Keeping.

6.4 Inventory control and traceability

6.4.1 Purpose and scope

(1) To ensure that bee products are correctly identified sufficiently at receipt, processing, storage and sale for inventory control purposes and to allow for traceability in the event of a recall.

6.4.2 Inventory control

(1) Operators must document an inventory control programme for product and records [HC Spec 9.2 (3)].

(2) Operators must maintain inventories for all raw materials (e.g. incoming honey, pollen, starter honey, imported products / ingredients) and finished products, including any non-compliant materials and products [HC Spec 9.2 (3)].

(3) Clearly identify non-complying products and the reasons for non-compliance in the inventory.

(4) Operators must ensure there must be a system in place for the identification of raw materials and products, and documentation that will allow any finished product to be traced:

a) back to the supplier and the apiaries that the bee product was sourced from; and
b) to the next person or company that the product is transferred to i.e. for further processing, packing, or storage; distributed to; or sold to [AP Reg 18 (1)].

Guidance
Operators intending to export with an official assurance should check the requirements for inventory control, transport conditions etc., which may include the need to undertake load out checks. Refer to OMARs and/or OAS.

6.4.3 Traceability

(1) All operators must have a tracking system that:

a) allows for the identification of all raw materials, ingredients and products (including imported) throughout the entire production chain (i.e. from reception of incoming materials, through processing or manufacturing (including starter honey), to dispatch of products); and
b) enables the movement of the 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 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 product [AP Reg 18 (1)].

(2) Identify and track rework to finished product.

(3) All outgoing products must be clearly labelled and accompanied by appropriate documentation to ensure traceability of the batch [HC Spec 8.2 (3) and 8.3 (1)].

(4) The operator must have procedures to track inputs through processing so that products can be quickly and effectively identified and isolated in the event of that a problem occurs [HC Spec 9.2 (3)].

Guidance
It is recommended that the operator maintain a "one step forward, one step backward" traceability system. This allows the identification of where inputs and other materials have been received from and where the products have been dispatched to.

Record the identification of all inputs (e.g. batch code or lot identification) released to processing each day. The more precisely an input can be traced to a specific product, the less product will be affected in the event that it needs to be held or recalled.

6.4.4 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for inventory control and traceability, as appropriate;
- a) the name and address of suppliers of raw materials and ingredients;
- b) details about the supplied item, including the batch number, quantity and delivery date;
- c) the supplier status of any approved suppliers;
- d) production records indicating the type, formulation and quantity of the finished products manufactured, the production or manufacturing dates and batch numbers, the use of any reworked products, starter honey and any repacking done;
- e) an inventory system (either electronic or hard copy) that allows finished products to be traced;
- f) load in and load out checks; and
- g) the name and address of the person or company to which the batch of products are delivered to.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

6.5 Calibration of measuring equipment

6.5.1 Purpose and scope

(1) To ensure that measuring equipment that is used to carry out critical measurements function as intended.

(2) Measuring equipment includes the following:

- a) temperature measuring/recording devices;
- b) timing devices;
- c) scales;
- d) metal detectors;
- e) water activity meters;
- f) pH meters;
- g) flow meters; and
- h) other instruments.

(3) It is recommended that calibration is also applied to equipment used in monitoring GOP parameters (e.g. refrigeration temperatures) and product parameters (e.g. product weight).

6.5.2 General requirements and procedures

(1) Operators must ensure measuring equipment (whether stand-alone or integrated) that is used to provide critical measurements:

a) have the accuracy, precision and conditions of use appropriate to the task performed;
b) are calibrated:
   i) against a reference standard (i.e. shows traceability of calibration to a national or international standard of measurement); or
   ii) (if no such standard exists) be calibrated on a basis that is documented in, or incorporated by reference into, the RMP; and
c) are uniquely identified (e.g. by using serial numbers, indelible tags or other permanent means of identification) to enable traceability of the calibrations and to identify the calibration status [HC Spec 6.2 (1)].

6.5.3 Calibration programme

(1) The operator must document a calibration programme that includes minimum frequencies of calibration for each piece of measuring equipment used to provide critical measurements, or used as reference standards, taking into consideration the following (as appropriate):

a) the stability of the piece of equipment;
b) the nature of the measurement; and
c) the manufacturer's instructions [HC Spec 6.2 (2)].

(2) 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 [HC Spec 6.2 (3)].

(3) Ensure reference standards (e.g. reference thermometer or reference weights) have a current calibration certificate before they can be used.

(4) Ensure equipment used for making critical measurements (i.e. for monitoring critical limits), including reference thermometers, metal detectors and scales:

a) are calibrated by an accredited agency; or
b) have assurance or guarantee of the instrument's accuracy provided by the equipment manufacturer.

Guidance
The calibration programme should also:

- identify whether the measuring equipment is used for taking critical measurements or not;
- identify the person or agency who will perform the calibration;
- indicate the maximum error allowed before corrective action is taken (e.g. ±1°C, ±1g);
- indicate how the calibration date and any correction factor will be affixed to the measuring device;
- include the corrective actions to be taken when a measuring device;
  - is damaged or provides inconsistent or inaccurate readings; and
  - identification and disposition of any product produced when the device was out of order.

Weighing of bee venom should be considered a critical measurement as bee venom is normally sold as a measured dose and is known to cause allergic reactions in some people.

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

The Weights and Measures Act is administered by the Ministry for Business, Innovation and Employment (MBIE) and applies to all products sold by weight or by a measure e.g. kilograms.

MBIEs Trading Standard team enforces these rules. Further information can be found at the website www.consumerprotection.govt.nz and using the search term: "Trade Measurement".

Use a reference thermometer only for checking working thermometers.

(5) Routine in-house checks of measuring equipment should be carried out against reference standards at regular and established frequencies by suitably skilled personnel.

6.5.4 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for calibration:

a) identification, location and calibration status of equipment;
b) calibration schedules;
c) certificates of accuracy or calibration; and
d) in-house calibration records.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

6.6 Labelling and identification of bee products

6.6.1 Purpose and scope

(1) To ensure that bee products are correctly identified and labelled and meets the requirements.

6.6.2 General requirements and procedures

(1) Develop and implement written procedures for retail packs to ensure that:

a) labels are designed to meet regulatory requirements;
b) all information printed on labels or packaging are correct and accurate;
c) any claims on product labels are accurate and evidence is available to support the claims;
d) the correct label is applied to each product unit;
e) labels are stored in a manner that maintains them in good condition;
f) damaged or obsolete labels are disposed of appropriately;
g) rework is identified and tracked to finished product;
h) "one step forward, one step backward" traceability is maintained; and
i) inventory control is maintained.

(2) Products must be labelled in a manner that enables traceability to be maintained [HC Spec 8.2 (2)].

6.6.3 Products packaged for retail sale

(1) Products packaged for retail sale must be labelled in accordance with the requirements of the Food Standards Code, Fair Trading Act 1986 and Weights and Measures Act 1987.

Guidance
For further information and guidance:

- go to the MPI website and search using "Labelling";
- A Guide to Food Labelling or the Food Standards Code; or
- A Guide to New Zealand Honey Labelling.

The MPI and FSANZ labelling guides provide detailed information on what a food label needs to include.

To ensure eligibility for export with an official assurance, unlabelled retail packs and bulk honey should be identified with the following information:

- the RMP number of the premises where the honey was packed;
- product description i.e. the word "honey";
- country of origin; and
- the product's batch code.

Refer to the Animal Products Notice: Official Assurances Specifications for Animal and Animal Products 2017 (OAS).

6.6.4 Allergens

(1) Warning and advisory statements for allergens must be included in labels on retail packs for royal jelly, pollen and propolis. These are described in the FSC 1.2.3 and Schedule 9.

Guidance
For guidance on using warning and advisory statements information is available on the Food Standards website e.g. Warning and Advisory Statements and Declarations User Guide.

Bee venom: consumers should be made aware of the possibility of allergic reactions if the product is consumed by those who are allergic to bee stings e.g. through labelling. Bee venom products are normally sold as dietary supplements, not as food.

For information specific to dietary supplements refer to the New Zealand Bee Products Warning Statements – Dietary Supplements) Food Standards 2002.

6.6.5 Product labelling for further processing

(1) Honey held in bulk form should be identified or accompanied with sufficient information (e.g. included in inventory control system) to allow the operator to inform the receiver of the product in the next step of processing.

~~6.6.5~~6.6.6 Labelling of transportation outers

(1) Operators must ensure labelling is provided on transportation outers and state:

a) the product name or description;
b) storage directions, where necessary to maintain the product as fit for intended purpose; and
c) lot identification [HC Spec 8.2 (3)].

(2) The label of the transportation outer, or accompanying documentation, of any bee product that is not intended for human consumption but has the appearance of, or could be mistaken for, product that is intended for human consumption, must clearly indicate that the bee product it contains is not intended for human consumption [HC Spec 8.2 (4)].

(3) If the status of honey or other bee product's fitness for intended purpose changes, and the 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 [HC Spec 8.4 (1)].

(4) If honey or bee products are downgraded and are 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 processing or as being fit for human consumption must be removed or defaced at the consigning premises [HC Spec 8.4 (2)].

(5) Any false or misleading labelling on reused or recycled packaging resulting from previous uses must be removed or defaced at the consigning premises [HC Spec 8.4 (1)].

(6) Operators must document an inventory control programme for bee products and maintain records [HC Spec 9.2 (3)].

Guidance

Warning statements about allergens are not required on transport outers. Including the product "Name" is sufficient to identify it for e.g. drums of product being sold to another operator (FSC 1.2.1 Division 4).

Refer to the OAS for information on requirements for export with an official assurance e.g. having procedures to ensure compliance with any export requirements.

Refer to clause 6.4 Inventory Control and Traceability.

~~6.6.6~~6.6.7 Labelling and accompanying documentation changes

(1) If the status of the material's suitability changes, labelling must be changed or replaced to reflect this [HC Spec 8.4 (1)].

(2) If product is downgraded and is no longer intended to be traded for human consumption, any labelling must be removed or defaced at the consigning premises on:

a) the transportation outer;
b) accompanying documentation;
c) inspection legends; and
d) any other identification of the product as being suitable for processing for human consumption [HC Spec 8.4 (2)].

(3) Any false or misleading labelling on reused or recycled packaging resulting from previous uses must be removed or defaced at the consigning premises [HC Spec 8.4 (3)].

~~6.6.7~~6.6.8 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for labelling:
a) label checklists;
b) verified translations of labels; and
c) copies of the labels.

Guidance

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

6.7 Control of maintenance compounds

6.7.1 Purpose and scope

(1) To ensure the proper use and storage of chemicals to prevent or minimise the contamination of edible bee products, packaging, equipment, or processing environment.

(2) Chemicals include maintenance compounds used for cleaning, sanitation, fumigation, pest control and the repairs and maintenance of equipment.

6.7.2 General requirements and procedures

(1) Operators must only use MPI approved maintenance compounds:

a) during processing operations;
b) in the maintenance of processing areas; and

c) in facilities and on equipment [HC Spec 3.4 (1)].

(2) The operator must develop written procedures for storage, handling and use of maintenance compounds [AP Reg 11 (3)].

(3) Any maintenance compounds used during processing operations must be approved for that purpose before use [AP Reg 11 (4)].

(4) The operator must label all (decanted) containers of approved maintenance compounds with the name(s) of the maintenance compound as approved or as they appear in the list of approved maintenance compounds contained in specifications [HC Spec 3.4 (2)].

(5) The operator must store approved maintenance compounds in containers that are:

a) clearly labelled;
b) not likely to be mistaken for food; and
c) not used for storing of food [HC Spec 3.4 (2)].

(6) Product and packaging contaminated by a maintenance compound, which adversely affects its fitness for intended purpose, must not be used for human or animal consumption [HC Spec 3.4 (1)].

6.7.3 Approved maintenance compounds

(1) The operator must maintain a current register (list) of maintenance compounds on the premises [HC Spec 9.2 (3)].

Guidance
MPI approval of a maintenance compound, and the associated conditions, only relate to minimising the risk of contamination of animal material or product. The approval does not relate to the efficacy of the compound. Operators should approach their supplier for this information.

Other chemicals such as printing inks and label solvents can be used within processing areas. Refer to the MPI Approved Maintenance Compounds (Non-Dairy) Manual for a list of MPI approved maintenance compounds. Search using the terms “approved maintenance compound” on the MPI website.

The inventory or list should contain any rodent or pest control compounds.

Refer to 6.4 Inventory Control and Traceability.

6.7.4 Storage of maintenance compounds

(1) Store maintenance compounds in a designated area (e.g. shelf, cupboard, room) and keep separate from edible bee products, ingredients, packaging and any unapproved maintenance compounds.

(2) The designated area(s) should be identified on the site plan.

(3) Keep maintenance compounds in sealed labelled containers when not in use.

(4) Clearly identify all containers and implements used for measuring or pouring of maintenance compounds (e.g. labelled as ‘For Chemicals Only’) to ensure no secondary use of these containers.

Guidance
Store maintenance compounds that are “in-use” or for “immediate use” in processing and support areas, but only in quantities necessary for immediate use.

Refer to 6.23 Storage for further information on storing maintenance compounds.

6.7.5 Handling of maintenance compounds

(1) Train personnel in the correct access, handling and use of maintenance compounds and provide access to documented directions.

(2) Ensure all containers or tools (e.g. measuring cylinders, jugs, scoops, funnels) used for measuring or pouring maintenance compounds are:

a) used for that purpose only (e.g. labelled 'for chemical use only'); and
b) not used for measuring food or ingredients.

6.7.6 Use of maintenance compounds

(1) All maintenance compounds must be used according to the directions of the manufacturer and used in a way that does not adversely affect the safety or suitability of bee products (the conditions of the MPI approval) [AP Reg 11 (4)].

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

(3) The handling or use of maintenance compounds should be by (or under the supervision of) suitably trained or experienced personnel.

(4) Clean equipment and other product contact surfaces by thorough washing after exposure to any maintenance compound.

6.7.7 Non-approved maintenance compounds

(1) Non-approved maintenance compounds may be used in staff rooms, kitchens, yards, etc.

(2) Manage non-approved maintenance compounds by:

a) maintaining inventory (list) control;
b) storing them separately from approved chemicals; and
c) clearly identifying them as not to be used in processing or storage areas.

Guidance
Non-approved maintenance compounds within an RMP boundary may not be permissible for export premises. Check overseas market access requirements for each individual country exported to.

6.7.8 Disposition of contaminated materials

(1) Dispose of empty chemical containers in accordance with manufacturer's instructions.

(2) Empty chemical containers should not be re-used for any other purpose within the premises.

(3) When chemical contamination occurs, the following actions must be carried out:

a) affected products must be considered unfit for human or animal consumption [HC Spec 3.2 (2)];
b) affected food contact surfaces must be cleaned and sanitised prior to reuse [AP Reg 11]; and
c) affected packaging materials that cannot be effectively cleaned and sanitised must not be used for packing of any edible bee product [HC Spec 7.2 (4)].

6.7.9 Monitoring

(1) Regularly checked compliance with documented procedures and the approved maintenance compounds list (for changes).

6.7.10 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for maintenance compounds:

a) inventory or list of current chemicals used and held in the premises;
b) any chemical information sheets provided by the supplier, including instructions for handling and use;
c) material safety data (MSD) sheets;
d) site plan;
e) personnel training records; and
f) monitoring and corrective action records.

Guidance
Records may be kept in a daily diary, logbook, record form or checklist.

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to 2.1 Document Control and Record Keeping requirements.

6.8 Pest control

6.8.1 Purpose and scope

(1) To ensure the effective control of pests so as to prevent or minimise the contamination of edible bee products, packaging, other inputs, equipment, and the processing environment.

(2) Pests include rodents, birds, insects (including bees), dogs and cats.

6.8.2 General requirements and procedures

(1) The operator must develop and implement a pest control programme with effective procedures that:

a) appropriately and adequately control pests;
b) minimises the exposure of material, ingredients, products, packaging, equipment and the processing environment to hazards associated with pests; and
c) minimises contamination from maintenance compounds by managing their use [AP Reg 11(1) to (3)].

(2) Include in the programme (but is not restricted to):

a) who is responsible for the pest management activities;
b) how buildings are pest-proofed, (e.g. self-closing doors, fly screens, drain traps);
c) external areas within the RMP boundary;
d) how pests are killed and prevented from breeding;
e) how pesticides and pest management equipment (including rodent bait stations, electric insect killers, traps, etc.) are used in the control of pests;
f) the methods used to monitor the presence of pests and the effectiveness of pest control; and
g) the corrective actions to be taken when pests are detected, including disposing of any contaminated things, including dead pests.

6.8.2.1 Prevention of infestation and access of pests

(1) Keep buildings and storage facilities (including water storage tanks) in good repair and condition to prevent pest access and to eliminate potential breeding sites.

(2) Keep holes, drains and other places where pests are likely to gain access sealed, or provided with screens or similar materials that prevent the entry of pests.

(3) Keep unscreened external doors closed at all times when not in use.

(4) Keep internal and external areas of the premises clean and tidy. Regularly check the external environment and keep free of any food source and breeding sites (e.g. long grass, bird's nest).

(5) Do not permit dogs, cats and other mammalian pests entering processing, packaging and storage areas.

(6) Keep waste materials in covered pest-proof containers, and regularly collected and disposed of.

> **Guidance**
> Use mesh screens on windows, doors, ventilators and other openings in the processing and packing areas that may be kept open during operations, to prevent the entry of insects, birds, and other pests.
>
> Spray areas that are likely to attract flies and other insects, as necessary.
>
> Seal or concrete roadways and car parks.
>
> Ensure landscaped areas, e.g. shrubs, trees, grass are not in close proximity to buildings where product is processed.
>
> Cover and store unused equipment on hard standings away from buildings where product is processed or stored. Storage on grassed areas may increase the likelihood of pest harbourage due to the difficulties of maintaining the grass height.

6.8.2.2 Use of pesticides

(1) Handle, use and store pest control chemicals (rodenticides and insecticides) according to the control procedures given in 6.7 Control of Maintenance Compounds.

(2) Ensure where there is evidence (e.g. varroa treatment strips) of potential contamination of bee products due to failure(s) by beekeepers to adhere to label use or approval condition requirements as required under ACVM, the suspect affected product must be considered unfit for human consumption until such time as laboratory analysis ensures that (varroa) treatment residues in the affected products do not create residue violations.

> **Guidance**
> Some ACVM registered varroicides have clear label statements that prohibit the use of honey for human consumption if the varroa treatments are present in honey supers during the time bees are collecting nectar and pollen. Ensure that relevant varroa treatment strips are not used in contravention to ACVM label use or approval conditions requirements.

(3) Remove edible bee products and exposed packaging from the spraying area or kept protected (e.g. covered) prior to the use of chemicals which may result to their contamination. Clean equipment and other product contact surfaces by thorough washing after exposure to any chemical (i.e. after spraying with insecticide is completed).

6.8.2.3 Use of rodent boxes, bait stations and insect traps

(1) Locate pest traps (including rodent boxes, bait stations and electric insect traps) where they do not present a risk of contamination to the product e.g. not directly above product conveyers or walkways.

(2) Do no locate bait stations inside any processing area.

(3) The operator should:

a) identify the location of marked rodent bait stations and electric insect traps on a site or building plan, or other suitable record; and
b) document changes to equipment locations.

(4) Only use rodenticides in bait stations.

(5) Regularly check bait stations for the following:

a) correct location as indicated in the plan or record;
b) presence of bait;
c) evidence of pest activity (e.g. nibbled bait, bait missing, droppings); and
d) boxes are in good working condition and numbering is easily legible.

Guidance
Numbering bait stations may make identifying them on a site or building plan easier.

Always read and follow the label directions for rodenticides. All agricultural chemicals should be considered toxic to humans unless there is evidence to show they are not.

Secure rodenticides within bait stations.

(6) Insect traps, which include ultra-violet lamps, pheromone traps and any form of attractant device, should:

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

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

Guidance
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. Ensure that the person or agency responsible is competent to perform the task.

6.8.2.4 Handling and disposition of contaminated materials

(1) Ensure where there is evidence of contamination from pests (excluding bees) or residues, the following actions are carried out:

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

(2) Ensure that honey is not extracted from honey supers where varroa treatments have been used in a way that could contaminate the honey e.g. not following the ACVM label use or approval conditions.

6.8.2.5 Monitoring

(1) Regularly check ongoing compliance with documented procedures and the effectiveness of the pest control programme.

6.8.3 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for pest control:

a) details of the contracted pest control person or agency, if applicable;
b) observations from monitoring, including any evidence of pests;
c) location of bait stations (e.g. a site plan);
d) list of approved chemicals used;

e) name, amount and point of use of any pesticides used; and
f) any corrective action taken (including restoration of control, product disposition and prevention of recurrence).

Guidance
Records may be kept in a daily diary, logbook, record form or checklist.

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to 2.1 Document Control and Record Keeping.

6.9 Extraction of honey

6.9.1 Deboxing and uncapping

(1) Deboxing must be done in a manner that will minimise transfer of contamination from boxes to combs [HC Spec 14.8 (1)].

(2) Uncapping equipment (i.e. knives, blades, prickers, hoses, clamps) must be used in a manner, e.g. in a hygienic and good working condition, that minimises contamination [HC Spec 14.8 (1)].

(3) When the uncapper is defective, uncapping must cease until the problem is fixed [AP Reg 10 (b)].

Guidance
Visually inspect honey combs to ensure that contaminated combs are removed and excluded from processing. Exclude combs from processing that have the following condition:
- infested with wax moth larvae;
- contain dead brood (bee larvae);
- with signs of rodent infestation (e.g. faecal pellets, urine odour); or
- had varroa strips attached to the frames.

6.9.2 Extraction

(1) The extractor must be clean and dry before the start of extraction [HC Spec 14.8 (1)].

(2) Do not allow the build-up of wax, caramelised honey, and foreign matter (e.g. wax, dirt, dead bees) in the extractor.

(3) Cover the extractor with a lid when not in use (e.g. overnight) to prevent the entry of pests and to prevent steam and water from contaminating honey.

(4) Honey that has been spilt onto the processing floor must not be used for human consumption [HC Spec 14.8 (1)]. Provided it is not contaminated with any chemical substance, spilt honey may be used for animal consumption.

(5) Any contaminated honey must be clearly identified as not intended for human consumption [HC Spec 8.4 (1)].

(6) Return extracted (wet) frames to the super and then to storage/transport as appropriate.

Guidance
The frequency for cleaning the extractor should take into consideration the volume of honey processed, design of the equipment, quality of honey, and other technical and commercial requirements. Refer to 5 Cleaning and Sanitation.

For mobile extraction, refer to 6.11 Mobile Extraction.

Product that is graded as not fit for human consumption, despite any further processing, cannot be re-graded as fit for human consumption.

Maintain inventory control e.g. the operator should record the quantity of honey produced after separating the wax and prior to packing.

6.9.3 Transfer of honey through the sump tank

(1) Remove wax and other debris from the sump tank at least daily.

(2) Construct and locate sump tanks in such a manner that prevents contamination of the honey from water (including splashes from the floor), condensates, dust and other contaminants.

(3) If honey that is separated from cappings is collected, it must be added to the sump or honey tank in a hygienic manner.

Guidance
Ensure the sides of the sump tank if sunk into the floor extend above the floor height to prevent floor dust and other contamination entering the honey. For example the minimum height of the sides could be between 150 mm and 300 mm above floor level.

6.9.4 Straining/filtering

(1) Strainers and filters must be made of material that is suitable for food [AP Reg 10].

(2) Ensure the mesh size of the strainer or filter is suitable for the type of material that is being filtered from honey.

(3) Strainers or filters must be maintained in good condition and must not be a source of contamination [AP Reg 10].

6.9.5 Holding of extracted honey in tanks

(1) Holding tanks must be clean and dry before being filled with honey to minimise contamination [HC Spec 14.8 (1)].

(2) Tanks containing honey must be protected from the entry of bees and other insects, condensates, dust and other contaminants [HC Spec 14.8 (1)].

6.9.6 Filling and storage of honey into drums or other bulk containers

(1) Honey must be filled into drums or other bulk containers in a manner that prevents contamination of honey [HC Spec 14.8 (1)].

(2) Full drums or other bulk containers must be sealed with tightly fitted bungs or lids to prevent contamination [HC Spec 14.8 (1)].

(3) Permanently mark or identify full drums or other bulk containers so that it can be easily linked to the relevant Harvest Declaration.

(4) Store full drums or other bulk containers in accordance with requirements given in 6.23 Storage.

Guidance
Formatted adhesive labels showing the product details has proved to be a better method of marking/identification than using a spirit marker as they reduce the amount of errors and particularly if product is exported.

6.10 Mobile extraction

(1) Mobile extraction takes place on an apiary site using an extraction unit. Most mobile extraction is undertaken in an enclosed environment e.g. trailer unit which helps ensure the final product is suitable for export. Any vehicle or trailer number should be recorded in the RMP.

(2) Bees should be removed from frames prior to entering the extraction unit. Steps should be taken to ensure the immediate surrounds of the mobile extraction unit are appropriate and are not a source of contamination.

(3) Where extraction is undertaken on an apiary site, the frames can be immediately returned to the hives.

(4) Extracted honey should be immediately drummed off. Drums should be removed to a storage site or transported for further processing to an RMP premise.

(5) Filtering of honey is to be undertaken within 48 hours of extraction to remove any bees, wax and other foreign material unless the length of time between extraction and filtration is validated and approved by MPI.

(6) Potable water used for mobile extraction unit is from a regulated source and meets the standards in 3.4 Potable Water. On-board holding tanks may be used. Each water source is recorded.

(7) Mobile units are not expected to have toilet facilities and alternative arrangements should be made. Refer to 3.6 Amenities.

(8) For waste refer to 6.22 Waste.

Guidance

An enclosed environment can include a specially designed trailer, horse float, etc. and other such mobile vehicles.

Honey produced using e.g. the 'Revolutionary Beekeeping Field Extractor' is not eligible for export to the EU. This type of extraction is not covered in this Code.

6.11 Processing of honey

6.11.1 Purpose and scope

(1) To ensure that honey (including liquid, creamed and comb honey) is processed in a manner that minimises its contamination and deterioration, and maintains its fitness for intended purpose.

6.11.2 Procedures for the processing of honey

6.11.2.1 Receiving and holding of supers

(1) When the loading bay is located inside the building, measures must be taken to prevent contamination of materials, products, and the processing environment from dust, dirt, bees and other insects, fumes, and other environmental contaminants during the entry and exit of vehicles, and during unloading of supers [HC Spec 14.8 (1)].

(2) Supers must be transported on clean trucks and covered during transport in a manner that minimises dust, engine fumes and other road-based contamination [HC Spec 16.3 (1)].

(3) Honey supers that are infested (e.g. wax moth), excessively dirty, or contaminated with faecal material (e.g. bovine, rodent or bird faeces) must not be accepted for processing until the contamination is removed [AP Reg 6 (1)].

(4) Full honey supers must be stored in a suitable storage area or hot room [HC Spec 14.8 (1)].

(5) Supers that are not stored in a room or will not be processed immediately must be protected from moisture and contamination from dust, dirt, bees and other insects, fumes and other environmental contaminants [HC Spec 14.8].

(6) Minimise the entry of live bees into the storage area, hot room or extraction room.

Guidance
Ensure processing rooms that open to the loading bay area have a door that is kept closed unless when vehicles enter and exit, and during unloading of honey supers.

Beekeepers should implement hygienic practices for the handling, storage and transport of honey supers to minimise contamination of the supers which consequently impacts on the microbiological load of honey.

Protect full or empty supers during storage from contamination from pests, wastes, and environmental contaminants.

6.11.3 Processing of liquid and creamed honey

(1) The external surface of stored honey drums must be clean (e.g. washed in an appropriate manner) to minimise contamination of honey as it is removed from the drum [HC Spec 14.8 (1)].

(2) Honey must be transferred into vats or tanks in a hygienic manner [HC Spec 14.8 (1)].

(3) Creaming tanks must be protected from the entry of bees and other insects, condensates, dust and other contaminants [HC Spec 14.8 (1)].

(4) Creaming tanks, including the mixer blade mechanism, must be in good mechanical condition and must not be a source of contamination (e.g. metal fragments, lubricants) [HC Spec 14.8 (1)].

(5) Starter honey must not be a source of contamination and must be mixed into the product in a hygienic manner [HC Spec 14.8 (1)].

Guidance
Tanks should have lids.

For discrete batches (i.e. not continuous batches), starter honey is an intermediate product and export eligibility requirements apply to it if the honey is intended for export. Although the E-Cert system does not require listing the source, operators should still ensure that starters:

- are recorded;
- traceable to origin; and
- show correct country eligibility status for the intended market of the final batch.

Any starter honey that has an uncertain origin or traceability to country eligibility is lost should be diverted to domestic honey and not used for export.

6.12 Processing of flavoured honey

(1) Confirm recipe and amounts of ingredients weighed out.

(2) Honey must be transferred into vats or tanks in a hygienic manner [HC Spec 14.8 (1)].

(3) Add dry ingredients into a small portion of honey as a ‘pre-mix’ to assist blending.

(4) The pre-mix honey must not be a source of contamination and must be mixed into the product in a hygienic manner [HC Spec 14.8 (1)].

(5) Blend the pre-mix into the main batch of honey. The blending should be validated (refer to 6.20 Process Development and Validation).

(6) At the end of blending, check a sample and complete batch records as necessary.

Guidance

Labelling:
Generally ingredients lists are not required for a single ingredient food such as honey. An ingredients list (in descending order of ingoing weight) is required when other ingredients are added. For further information refer to FSC 1.2.4.

The name of the product is required to reflect the nature of the product e.g. lemon flavoured honey.

If ingredients are added to honey, each ingredient should be assessed to determine the need for directions for its use for health or food safety reasons.

6.13 Processing of comb honey

(1) Combs that are infested, travel stained, dirty, contaminated with faecal matter, or contain brood or fermented honey must not be processed into comb honey [AP Reg 6].

(2) Inspect comb honey using a light source or similar device to detect any remaining wire or other foreign matter.

(3) Only chemicals approved as fumigants for comb honey must be used for fumigating combs to kill wax moth [HC Spec 3.4].

(4) Honey combs must be adequately packed or protected during freezing to ensure that contamination from other sources is prevented [AP Reg 9].

(5) Comb honey processors must ensure comb honey meets the specific requirements for comb honey contained within the Food Standard: Tutin in Honey.

Guidance

Comb honey poses a greater risk from tutin because it is eaten directly off the comb, increasing the chance of consuming honey with a high concentration of tutin. ~~Comb honey processors must ensure comb honey meets the specific requirements for comb honey contained within the Food Standard: Tutin in Honey.~~

New foundation and comb should be used for producing comb honey.

Some premises have a metal detector to eliminate any comb honey pack contaminated with metal.

Freezing to kill wax moth may be done off-site (i.e. outside the boundaries of the operator's RMP) provided the freezing operation is undertaken in a premises covered by an RMP under the APA.

Movement of comb honey to and from a premises to freeze the honey must be supported by E-Cert if export eligibility is to be maintained.

6.13.1 Packing and labelling

(1) All equipment/machinery must be operated to minimise and manage the exposure of bee products to any risk factors [AP Reg 10 (b)].

(2) Inspect containers (e.g. jars, drums) for damage (e.g. broken glass, dents) and foreign objects prior to filling.

(3) Segregate and dispose of defective retail packs appropriately in designated bins. Recycle defective drums if appropriate.

(4) The label on a package of honey must meet the general labelling requirements under the APA and the Food Standards Code [AP Reg 19].

(5) A system must be in place for the identification and inventory of labels, segregation and removal of obsolete labels, and the prevention of incorrect labelling of products [HC Spec 8.4].

> **Guidance**
> Collect, identify and store retention samples of product for the required time period for testing and examination, if required.
>
> Refer to 6.6 Labelling and Identification of Bee Products.

6.14 Processing of pollen

6.14.1 Purpose and scope

(1) To ensure that pollen is processed in a manner that minimises its contamination and deterioration, and maintains its fitness for intended purpose.

6.14.2 Receipt of pollen

(1) Pollen must also be free from the presence of dead bees, wax, insect parts, wood, dust and other foreign matter [AP Reg 6].

(2) The operator must ensure that pollen received for processing is fit for intended purpose i.e. free from:

a) mould – it is not fit form human consumption and must be discarded; and
b) contamination from rodent droppings and pests such as cockroaches and ants.

~~(3)(1) Pollen must also be free from the presence of dead bees, wax, insect parts, wood, dust and other foreign matter [AP Reg 6].~~

> **Guidance**
> Collect pollen every 3 to 4 days and before any significant rain. In wet weather, pollen which becomes damp may start to grow mould and rot after 4-5 days. Keep pollen containers out of the sun to prevent 'sweating' and clumping of pellets, and to minimise microbiological growth.
>
> Processors of pollen should require their suppliers to have an effective pest control system in place at the hive and storage facilities to minimise contamination of pollen from pests. The presence of rodent droppings indicates that there is a hole in the trap or hive and the entrance to the trap is too large, or gear is being contaminated during winter storage.

6.14.3 Freezing of pollen

(1) Place fresh pollen in a freezer without unnecessary delay especially if the pollen is wet.

(2) Contamination of the pollen must be prevented during freezing. Pollen must be properly packed and identified [AP Reg 9].

(3) The freezer must have the capability to quickly freeze pollen to the required temperature [AP Reg 10].

(4) The pollen must be loaded in the freezer in such a manner that allows effective freezing of the product [AP Reg 10].

Guidance
Freezing will prevent microbial growth and spoilage, and kill wax moths and pollen mites. Pollen should be frozen at -18°C for at least 48 hours to destroy wax moth.

6.14.4 Drying of pollen

(1) Drying of pollen must be done in a manner that minimises the contamination of the product and the growth of any microorganism present in the product [AP Reg 9].

(2) Dry pollen to a final moisture content sufficient for the preservation of the product considering its intended packaging and storage conditions.

Guidance
Pollen is generally dried to < 8% moisture content.

6.14.5 Cleaning of pollen

(1) Dried pollen must be cleaned to ensure that the product is free of all foreign matter such as dead bees, wax, insect parts, wood, dust, and other contaminants [AP Reg 9].

Guidance
Cleaning small quantities of pollen can be achieved using a simple birdseed cleaning unit which uses a vacuum cleaner for the air supply. Sieves can also be used.

Large quantities may need to be processed in a commercial seed-cleaning machine. These contain vibrating riddles or screens which sift out the pollen into different sizes. They also have an air current to remove the dust and fine debris.

6.14.6 Storage of pollen

(1) Store pollen intended for human consumption in a deep freeze or as dried pellets in air tight containers at room temperature.

6.14.7 Labelling of pollen

(1) The label on a package of pollen must meet the general labelling requirements under the APA and the Food Standards Code [AP Reg 19].

6.15 Processing of propolis

(1) Raw propolis is often received still on mats retrieved from the hives. These can be stored until processing.

~~(1)~~(2) Processing often consists of freezing the propolis mats and scraping off the propolis.

(3) Then the propolis is stored and/or packaged.

~~(2)~~(4) Whilst there are no regulatory requirements for label warnings or advisory statements during processing is still advisable to identify and manage propolis as an allergen during the processing steps.

(5) Propolis can be sold as a dietary supplement depending on how it is sold (refer to Dietary Supplements Regulations 1985).

6.16 Beeswax processing

(1) Beeswax is commonly used by beekeepers to make foundation sheets (moulds), some in cosmetics and other uses.

(2) It is commonly rendered from the cappings removed during honey extraction. Rendering is often achieved by using hot water.

~~(1)~~(3) Wax then needs to be cooled and stored in dry conditions.

6.17 Royal jelly collection and processing

(1) Royal jelly is produced by stimulating colonies to produce queen bees outside the conditions in which they would naturally do. The existing queen is removed from the hive. Often collection is done by using movable frames and collecting royal jelly from individual queen cells.

(2) The beekeeper should monitor the hive for new queen development in order to anticipate removing the frames before the new queen fully develops.

(3) The frames should be brought quickly into the extraction room and the cells cut to remove the queen larvae with a pair of forceps.

(4) The royal jelly is extracted by emptying each cell with e.g. a spatula and by sucking out with e.g. a pump. It is then filtered to eliminate fragments of wax and larvae.

(5) The royal jelly should be put into food-grade containers to reduce exposure to air and refrigerated immediately (refer to 6.23.6 Refrigerated Storage).

(6) The start-up procedure includes:

a) taking frames from storage and checking them;
b) making any repairs or replacements as required;
c) wiping down walls, windows and ceilings;
d) sanitising stainless benches and wiping them down before starting;
e) cleaning floors; and
f) sterilising the royal jelly pump and rinsing before use.

(7) The shutdown procedure includes:

a) sterilising the royal jelly pump and put back into storage;
b) hot washing and sterilising walls, windows and ceilings;
c) sanitising stainless benches and wiping them down;
d) cleaning floors; and
e) stripping down frames, cleaning with a hot wash and putting into storage.

Guidance

Royal jelly:

- can be sold in its fresh state, unprocessed (except for being frozen or cooled), mixed with other products, or freeze-dried;
- should be refrigerated 0-5˚C;
- can be classed as a dietary supplement depending on how it is sold; and
- is an allergen (refer to 6.2 Allergen Management).

6.18 Bee venom collection and processing

(1) Bee venom collection includes shocking the bees to sting a surface, e.g. glass, and the venom is then collected by scraping.

(2) Bee venom is stored refrigerated (refer to 6.23.6 Refrigerated Storage) and kept in dark containers e.g. glass bottles.

(3) Where glass is used, a breakage procedure should be developed.

(4) The flow diagram and HACCP analysis does not cover the processing of bee venom beyond freeze drying. The final product is normally sold in the form of a dietary supplement (refer to Dietary Supplements Regulations 1985).

Guidance

Bee venom stings are known to cause allergic reactions in people (refer to 6.2 Allergen Management). Whilst there are no regulatory requirements regarding warning or advisory statement under the APA, operators should ensure any of these products carry such advice for the protection of the consumer.

Bee venom processing beyond freeze drying would need to be evaluated.

6.19 Product design and formulation

(1) All products should be designed and formulated to produce product that is safe and meets any nutritional requirements of the intended consumer, considering its intended purpose and use.

(2) Product formulations or recipes should be developed by a suitably skilled person who:
- a) has technical knowledge and experience in developing formulations;
- b) is familiar with regulatory standards and requirements, including permitted levels of ingredients and additives;
- c) a good understanding of nutritional requirements; and
- d) a good understanding of the effect of any change in the formulation on product characteristics, nutritional content, process parameters, labelling, shelf-life, etc.

(3) The following should be taken into consideration when developing a product:
- a) the type of product;
- b) the intended purpose and use of the product;
- c) any nutritional requirements;
- d) how the product will be distributed through the supply chain, and handled, stored and used by the retailer;
- e) the source and suitability of raw materials, ingredients and packaging;
- f) the hazards associated with the raw materials and ingredients, including microbiological loading;
- g) the manufacturing process;
- h) any applicable regulatory or operator-defined limits, product or process criteria;
- i) the shelf-stability and shelf-life of the product; and
- j) for export, the eligibility of the product for the intended overseas market.

(4) The manufacturer should have a system for managing activities and incidents that may impact on formulations and recipes, such as:
- a) recipe changes;
- b) changes in suppliers of ingredients;
- c) changes in equipment or process parameters;
- d) use of different brands or alternative ingredients; and
- e) use of rework materials.

(5) Records of product formulations should be kept.

(6) Shelf-life should be established, taking into account the product formulation, process, packaging and subsequent storage conditions. The manufacturer should be able to explain the basis for the established shelf-life and provide supporting records, if necessary.

Guidance
Shelf-life can be determined based on:
- scientific literature;
- industry guidelines;
- company's experience and historical records; and/or
- shelf-life trials.

Formulated product processes are not covered in depth in the Code and will require a customised RMP i.e. will need an evaluation step.

6.20 Process development and validation

(1) Manufacturing processes for each product or product group should be:

a) developed based on the application of HACCP and designed to consistently achieve any applicable regulatory and/or operator-defined limits;
b) documented in the RMP, including the procedures at key process steps and product and process parameters and criteria; and
c) validated by a suitably skilled person; and revalidated whenever there is a change to the process or product that could impact on the product's safety and stability.

(2) Validation should cover the aspects of the process summarised in Table 6: Scope of Process Validation below.

Table 6: Scope of process validation

The manufacturer should be able to demonstrate that:	Examples of evidence
Operator defined limits, including process parameters at CCPs and product criteria, are appropriate to the product and its intended use and scientifically valid.	(a) published scientific literature; (b) New Zealand or internationally recognised code of practice; (c) industry agreed criteria; (d) expert's opinion; or (e) reports of validation studies.
Process equipment, e.g. freeze driers: (a) have the correct capability; (b) are correctly installed and set up; and (c) are fitted with calibrated measuring devices at the correct location (e.g. the slowest heating point of a cooler).	(a) commissioning reports; or (b) evidence of compliance to equipment manufacturer's instructions regarding installation and setup, such as an installation checklist. For simple equipment actual demonstration of the equipment's operation by the manufacturer may suffice.
Established process parameters, including critical limits at CCPs (e.g. heating parameters, drying parameters), and product criteria (e.g. water activity a_w) are consistently met.	For existing businesses and processes - process monitoring data, historical records. For new businesses or new processes – results of validation trials (refer to RMP Manual).
Personnel responsible for control and monitoring at key operational steps (particularly CCPs) are adequately trained or have the correct competencies.	Training records.

Note: Refer to the guidance document What is Validation? and the RMP Manual.

(3) Records of all aspects of the validation work must be kept [AP Reg 20 (2)].

(4) Keep the following records for validation where applicable:

a) product formulations;
b) validation report;
c) commissioning reports;
d) process parameters evidence;
e) equipment calibration/installation evidence;
f) monitoring data;
g) training records; and
h) any corrective action taken (including restoration of control, product disposition and prevention of recurrence).

Guidance

Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Refer to 2.1 Document Control and Record Keeping.

~~6.20~~6.21 Non-complying product and recall

~~6.20.1~~6.21.1 Purpose and scope

(1) To ensure the correct handling and disposition of non-complying products, including the recall of products from distribution and sale.

~~6.20.2~~6.21.2 General requirements and procedures

(1) Ensure that non-complying product is appropriately managed.

(2) Document procedures for the identification, handling, storage and disposition of any non-complying product. The procedures should facilitate the traceability and inventory control of any non-complying products.

(3) This should include determining whether any other product has been detrimentally affected as a result of the non-compliance and taking appropriate actions to manage this.

(4) Handle and store non-complying products in a manner that prevents:

a) contamination and deterioration of other products; and
b) contamination of the storage environment.

(5) Non-complying products should be:
a) clearly identified;
b) separated from other products;
c) recorded in inventory (unavailable for loadout); and
d) held within the premises until disposition is determined by a suitably skilled person or, in certain cases, by MPI.

(6) The disposition of any non-complying product must be determined by a suitably skilled person considering various factors, such as:
a) product safety and suitability;
b) the amount of product affected;
c) whether the products have been released for distribution or not;
d) whether the products can be reprocessed; and
e) any instructions from MPI or the RMP verifier [RMP Spec 15 (1)(c)].

(7) The RMP operator must notify the RMP verifier without unnecessary delay, when there is any significant concern about the safety or suitability of any of their products [RMP Spec 13 (3)(a)].

Guidance

Appropriate actions of any non-complying products may involve one or a combination of the following, depending on the nature and extent of the problem:

- restricted release of products;
- re-grading of products for an alternative use (e.g. feeding to bees);
- reworking;
- reprocessing to ensure that the product conforms to the requirements;
- rejection (disposition); and
- withdrawal or recall of products which have been distributed for sale.

Guidance on managing non-compliances can be found on the MPI website or search on "ENC". This includes raising an export non-compliance (ENC) for export product where appropriate.

~~6.20.3~~6.21.3 Recall

(1) Where, due to the nature of the bee product, it is possible to recall it from trade, distribution or from consumers, the operator must document their own recall procedure, including:

a) the criteria for deciding when a recall will be initiated; and
b) how retrieval and disposition of the relevant bee product will be managed [RMP Specs 14 (1)].

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

a) the Director-General; and
b) the RMP verifier or recognised RMP verifying agency [RMP Spec 14 (2)].

(3) Ensure a product recall plan is periodically tested using a 'trial run' or mock recall exercise. A trial run or mock recall should be undertaken no matter the size of the business.

(4) A trial run or mock recall~~This~~ can be considered as a validation of the product recall plan. Document as a procedure as part of the product recall plan itself. It is recommended that product recall plans be validated annually or more frequently if appropriate and the effectiveness reviewed.

Guidance
In a recall, the removal of the product from consumers should be seen as the initial corrective action. Address the prevention of a recurrence subsequently.

For further information refer to MPI's Recall Guidance Material for guidance on recall procedures, or go to the MPI website and search on "recall'. There are a number of documents available on the MPI website relating to recall including a hazard/risk analysis form for deciding if you need to conduct a recall, newspaper recall notice templates, checklist for conducting a recall, etc.

A trial run or mock recall could be undertaken as part of an internal audit (Operator Verification).

The Food Safety Law Reform Act 2018 stipulates that 133B Tracing and Recall applies to all businesses that trade in food.

~~6.20.4~~6.21.4 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for non-complying product:

a) inventory or list of non-complying products;
b) records of assessment and disposition of non-complying products;
c) records of any recall activities, including mock recalls;
d) inventory records; and
e) any correspondence with the verifier or MPI.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

~~6.21~~6.22 Waste materials

~~6.21.1~~6.22.1 Purpose and scope

(1) To ensure that waste materials are effective managed and are not a source of contamination to products, processing areas, equipment or personnel

~~6.21.2~~6.22.2 General requirements and procedures

(1) The operator must effectively manage waste material to minimise pest activity, offensive odours and contamination of product, processing areas, equipment or personnel [AP Reg 11 (1)].

(2) Waste material must be:

a) conveyed to a waste area in a timely manner;
b) kept under controlled conditions to ensure that it will not be mistakenly or fraudulently released as suitable for processing or fit for human consumption;
c) kept in covered pest-proof containers (if receptacles are kept outside or are not in continuous use inside); and
d) regularly collected and disposed of in a manner that ensures that it will not become a source of contamination to other bee products [HC Spec 3.2 and 3.3].

Guidance
Waste management applies to all areas within the physical boundaries of the site, including facilities, support areas and the external environment.

Empty drums, IBCs, jars, etc. should be discarded or disposed in a way that prevents access by robbing bees e.g. double bagging used jars, etc. This prevents the spread of e.g. any AFB spores, etc.

~~6.21.3~~6.22.3 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for waste;

a) general hygiene check of processing areas, facilities and external environment; and
b) pest control records.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

~~6.22~~6.23 Storage

~~6.22.1~~6.23.1 Purpose and scope

(1) To ensure a storage environment that will maintain the intended state of preservation and prevent contamination so that products and materials remain fit for purpose.

~~6.22.2~~6.23.2 General requirements and procedures

(1) Operators must establish and carry out effective procedures to:

a) ensure appropriate and adequate maintenance, cleaning and sanitation;
b) manage waste; and
c) control pests [AP Reg 11 (1)].

(2) Operators must ensure that maintenance compounds are stored, handled and used in a manner that minimises contamination [AP Reg 11 (3)].

(3) Identify products and materials at all times.

(4) Store products and materials to:

a) minimise deterioration;
b) minimise damage to packaging;
c) facilitate effective cleaning; and
d) facilitate effective inventory control.

(5) Clean up spills immediately.

(6) Storage areas used to store or contain bee products that is not suitable for processing or not fit for human consumption but is suitable or fit for some other purpose must:

a) be kept under controlled conditions so it is clearly identified in a manner that will ensure that it will not be mistakenly or fraudulently released; and
b) not be sources of contamination to other product that is intended for human consumption [HC Spec 3.2 (1) and (2)].

(7) Discard any stored raw material or ingredient when:

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

Guidance
Storage for receipt of raw materials etc. is covered in 6.1.3 Handling and Storage.

Records of the storage location of bee products, raw materials and ingredients should be maintained.

Refer for 5.1.5 Dry Cleaning for cleaning a storage area.

Products not intended for export should be identified so that they cannot be mistaken for export eligible product. For export refer to the Code of Practice for Cold and Dry Stores available on the MPI website.

~~6.22.3~~6.23.3 Packaging

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

(2) If the packaging is damaged such that the suitability for processing of bee product for intended purpose may be affected, the product must be:

a) handled in a manner that minimises contamination and the damage to the packaging is rectified; or
b) appropriately disposed of [HC Spec 7.2 (4)].

Guidance
Assembled cartons should be protected from dust by covering the top layer of cartons or inverting the topmost carton.

Return unused containers and packaging to the store providing the packaging is re-wrapped to minimise contamination from dust and pests.

~~6.22.4~~6.23.4 Drums, IBCs and other bulk containers

(1) Stack and store bulk honey ~~drums~~containers, empty ~~drums~~ containers and other materials in a tidy manner.

(2) Ensure ~~drums~~ containers have properly fitted bungs etc. that prevent the entry of moisture and other contaminants.

(3) Remove and dispose of damaged ~~drums~~ containers as soon as possible.

(4) Handle and transport ~~drums~~ containers in such a manner that prevents dents and other forms of damage.

Guidance

Store empty and full ~~drums~~ containers under cover (i.e. inside a building or shed) whenever possible. This prevents:

- rusting which weakens ~~the~~ a drum structure;
- contamination on the outside of the ~~drums~~ containers (e.g. dirt, dust, and other debris) which can be transferred to the honey during subsequent processing; and
- entry of moisture and other contaminants.

Empty ~~drums~~ containers that are stored outside should be held on their side and pyramid stacked with the bung etc. facing away from the prevailing weather. They should be stored under some form of cover or under shade to prevent huge changes in temperature within the ~~drum~~container. Changes in temperature or a big temperature gradient within the ~~drum~~ container will create a vacuum and allow air and moisture to be sucked into the ~~drum~~container.

Store empty and full ~~drums~~ containers off the ground (e.g. use pallets).

~~Drums~~ Containers should not be dropped or thrown around to prevent dents which ~~can~~ could lead to cracking or delamination of the internal lining and weakening of seams.

~~6.22.5~~6.23.5 Storage of waste materials

(1) Storage areas used for waste which contain bee products that are not suitable for processing, or not fit for human consumption but is suitable for fit for some other purpose, should:

a) be clearly identified; and
b) not be sources of contamination to other product that is intended for human consumption.

(2) Keep waste materials in covered pest-proof containers and regularly collect and dispose of.

(3) The operator should ensure that non-complying product is appropriately managed.

Guidance

Refer to 6.21 Non-complying Product and Recall.

~~6.22.6~~6.23.6 Refrigerated storage

(1) Any chilling of product should be conducted without unnecessary delay and in a manner that minimises deterioration e.g. venom, pollen.

(2) Ensure any operator defined temperature is reached as quickly as necessary to maintain the fitness for purpose of the product.

6.23.7 Packing / re-packing in a store

(1) Packing / re-packing means making / breaking up small consignments and placing into cartons for individual customer consignments but does not include packing / re-packing of bee products into other contact packaging.

(2) Bee products are packed / re-packed (product not exposed) stored and dispatched with minimal risk to the product by:

a) having a designated area where the 're-packing' process is undertaken;
b) the area being clean (refer to 5.1.5 Dry Cleaning for Cleaning a Storage Area).
c) personnel being suitably attired;
d) product designed for 're-packing' being managed via the inventory system; and
e) all re-packaged product being appropriately labelled (refer to 6.6 Labelling and Identification of Bee Products for Labelling Information).

(3) Any 're-packed' bee product found to be packaged incorrectly will be:

a) segregated from other products;
b) identified as non-conforming / non-complying product (e.g. by labelling, status changed in the inventory system); and
c) 2.5 Corrective Action followed.

(4) Records of 're-packed' bee product compliance to requirements can be made on the Loadout Check Sheets.

~~6.22.1~~6.23.1 Monitoring

(1) Regularly check compliance with documented procedures and the effectiveness of storage procedures.

~~6.22.2~~6.23.2 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for storage:

a) inventory records e.g. Inventory Ledgers;
b) pest control e.g. Pest Control Registers, Pest Control Checklists;
c) load outs e.g. Loadout Check Sheets;
d) records of cleaning and maintenance of stores e.g. Cleaning Schedules, Cleaning Forms;
e) any refrigeration/temperature records e.g. Automatic Temperature Recorder Checks; and
f) corrective actions e.g. Corrective Action Register.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

~~6.23~~6.24 Transport

~~6.23.1~~6.24.1 Purpose and scope

(1) To ensure that bee product maintains its status as suitable for processing and to minimise hazards, including transport between premises or places operating under an RMP.

~~6.23.2~~6.24.2 General requirements and procedures

~~6.23.2.1~~6.24.2.1 Transport in your RMP

(1) Transport should be included in your RMP as a supporting system where you are transporting your own products i.e. use your own truck(s). This means transport will be included in verification audits and operator verification activities as part of your RMP.

(2) Alternatively you may register a transport regulated control scheme (RCS) or a transport RMP.

Guidance
Having transport in your RMP allows for bee product to be transferred using your own listed vehicles. However transfers of bee products can only be from or to your own premises.

For example:
- The beekeeper can collect 2 drums of honey from a RMP registered third party extractor in his ute, and take them back to his RMP registered storage facility, if he has this activity covered by his transport system under his RMP.

- 2 weeks later, the beekeeper can take the 2 drums of honey in his ute from his storage facility to a RMP registered third party packer.
- He can then pick up the finished product in his ute from the packer, and take it back to his RMP registered storage facility.
- However, the beekeeper cannot collect the 2 drums of honey from the RMP registered 3rd party extractor and deliver them straight to the RMP registered 3rd party packer.

~~6.23.2.2~~6.24.2.2 Design and construction of transportation units

(1) Transportation units and loading equipment must be designed, constructed, equipped and operated to:

a) maintain the status of bee products as suitable for processing and fit for intended purpose; and
b) minimise hazards and other risk factors [HC Spec 16.2 (1) and (2)].

~~6.23.2.3~~6.24.2.3 Operation

(1) Transportation units and loading equipment must be kept clean and maintained in good working condition [HC Spec 16.3 (1)].

(2) Bee 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:

a) separated from the source of contamination; or
b) protected in a manner that prevents cross contamination [HC Spec 16.4 (1)].

(3) The operator should check that e.g. truck decks are clean before loading of any product and that segregation is appropriate.

(4) The operator must ensure that:

a) hygienic handling practices are followed by persons involved in the transportation of bee products; and
b) any exposed bee products is not handled by any person with any condition or illness [HC Spec 16.3 (2) and (3)].

(5) The taking of any samples must be carried out in such a manner that contamination of that bee product is minimised [HC Spec 16.4 (3)].

(6) The transport operator must ensure that persons transporting bee products are aware of the relevant specifications and are adequately trained [HC Spec 16.4 (6)].

Guidance
Transport of enclosed water-tight containers such as drums and pallecons is acceptable on open trucks. Finished products in bags, cartons or other packaging that is susceptible to water damage should be carried in a manner so as to protect from moisture. If open trucks are used, water-tight tarpaulins or other suitable covers should be used to protect product.

Refer to 2.2 Personnel Health and Hygiene for further guidance on conditions or illness that could affect the safety or suitability of bee products.

~~6.23.2.4~~6.24.2.4 Refrigerated transport

(1) Refrigerated transport units must be designed, constructed and equipped to ensure that the specified temperatures are achieved and maintained throughout transportation [HC Spec 16.2 (3)].

(2) Temperature-measuring devices used to measure critical temperatures must be calibrated and located to measure the internal temperature of a transportation unit at the warmest point [HC Spec 16.2 (4)].

(3) Transportation units must be:

a) operated so that the required product temperature is maintained throughout transportation; and
b) loaded within the designed refrigeration capacity [HC Spec 16.2 (1)].

(4) Bee products must be maintained at their preservation temperatures, or alternative temperature or cooling condition specified in the RMP during transportation [HC Spec 16.4 (2)].

(5) Records demonstrating the maintenance of the preservation temperature or condition during transportation must be kept [HC Spec 16.4 (2)].

(6) The determination of bee product temperature must be carried out in such a manner that contamination of that bee product is minimised [HC Spec 16.4 (3)].

(7) The transport operator must have a documented contingency plan to deal with any failure to maintain preservation temperatures during transportation, including:

a) immediate notification to the person who has responsibility for the bee product; and
b) corrective actions to prevent recurrence [HC Spec 16.4 (5)].

Guidance
Refer to 6.5 Calibration of Measuring Equipment.

~~6.23.3~~6.24.3 Transport operators subcontracted for transporting your product

(1) When transporting bee products intended for export with official assurances, transport service operators must register and operate under a relevant transport regulated control scheme (RCS) or registered risk management programme (RMP) [Animal Products (Transport of Export Animal Products and Handling at Point of Export) Notice 2009].

(2) It is the operator's responsibility to ensure where subcontractors are used (included under the RMP) they hold an RCS or RMP.

(3) The operator should:

a) ensure the sub-contractor is aware of their responsibilities with respect to transport of bee products;
b) check that transporter's vehicle is clean before loading e.g. decks, canopies; and
c) clean the load contact surfaces if required before transport.

Guidance
The operator should use a signed agreement with the sub-contractor to ensure they will comply with relevant requirements.

Where sub-contractors are used for transport and included under your RMP, only a sub-contractor that directly collects the product from your premises can be covered under your RMP. If that sub-contractor then transfers product to a 3rd party for subsequent transport of goods, that 3rd party either:
(a) operates their own RMP; or
(b) registers under the Transport RCS; or
(c) is covered under the receiving RMP operator's RMP.

~~6.23.4~~6.24.4 Records

(1) Keep records to demonstrate compliance with the requirements [RMP Spec 20 (2)].

(2) Keep the following records for transport:

a) list of own transport vehicles including registration or fleet number;
b) delivery or consignment records;
c) records of cleaning and maintenance of transportation units;
d) any refrigeration/temperature records;
e) load in and load out checks e.g. Loadout Check Sheets; and
f) subcontractor related documents such as:

i) copies of signed agreements; and
ii) evidence of their RCS or RMP registration.

Guidance
Refer to the RMP Operators Resource Toolkit for examples of forms and procedures.

Part 7: HACCP application

7.1 Introduction

7.1.1 Purpose of this document

(1) To ensure the correct application of hazard analysis so as to minimise any hazards that are likely to be present.

7.1.2 Hazard

(1) A hazard is a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

a) biological hazards include pathogenic microorganisms (e.g. *Clostridium* spp, *Bacillus* spp). Microorganisms that are non-pathogenic are not considered as hazards. For example, yeast causes fermentation of honey and, therefore, is an undesirable organism in honey, but it is not considered a hazard because it does not cause illness;
b) chemical hazards include heavy metals, pesticides, veterinary medicines, allergens and biotoxins (e.g. tutin in honey). Some food additives may also be hazardous if present in excessive or toxic amounts; and
c) physical hazards are objects that may cause illness or injury. Examples of these hazards are glass, metal fragments and plastic.

(2) Hazards may occur in the product as a result of:

a) an input (e.g. raw material, ingredients, packaging);
b) the process itself; or
c) direct or indirect contamination from "other sources" (e.g. personnel, water, pests, wastes, equipment, internal and external environs).

7.1.3 Chemical residue monitoring

(1) Monitoring and surveillance of a range of chemicals from random and targeted bee products is regularly conducted by MPI. The primary objectives are:

a) to provide confidence to export markets; and
b) to confirm that the control of substances is working as designed e.g. through Harvest Declarations.

(1) Chemical residues such as amitraz have been found but not on a regular basis and below harmful levels during 2014-2016. It is important to consider chemical residues (from agricultural chemicals and veterinary medicines) as a hazard in the hazard analysis.

7.1.4 Tutin in honey

(1) Tutin is a chemical hazard:

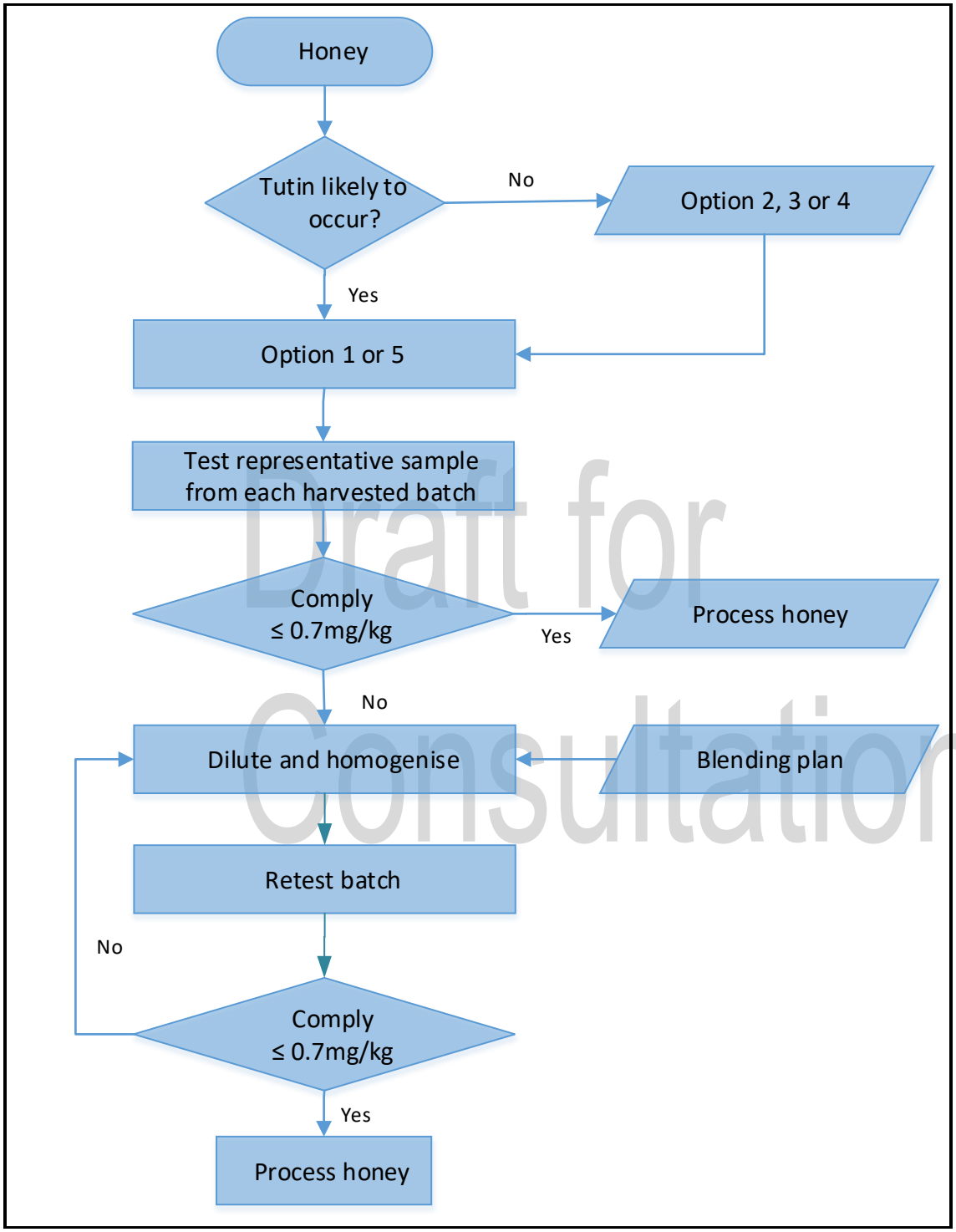
a) with a maximum level of 0.7mg/kg in all honey; ~~and~~
b) cut comb honey individual samples must be less than 0.01mg/kg; and
c) box section comb honey cannot be tested for compliance with the tutin standard.

(2) Options on how tutin is managed is described in the Food Standard: Tutin in Honey 2016 and the Guidance Document: Compliance Guide to the Food Standard: Tutin in Honey 2016.

(3) The decision on whether tutin is likely to occur i.e. options 1 and 5 (Food Standard: Tutin in Honey) is a CCP for extraction of honey. The steps of dilution / homogenisation and testing have been included in the process flow charts to be followed when options 1 and 5 apply. Refer to Figure 2: Guidance Decision Tree for Tutin in Honey.

Guidance
The regulatory level of 0.7mg/kg of tutin has no safety margin and levels greater than 0.7mg/kg can cause people to experience poisoning symptoms. Therefore the tutin levels in this Part are normally described as ≤0.7mg/kg.

Figure 3: Guidance decision tree for tutin in honey



7.1.5 Good operating practice (GOP)

(1) GOP should be developed and documented prior to HACCP application. The HACCP approach used in this Code is based on the expectation that these systems are effectively being implemented.

7.1.6 General requirements and procedures

(1) An RMP must specify any uncontrolled hazards that are likely to be present in bee products leaving the physical boundaries of the RMP and the operator must be able to justify that this is appropriate considering the intended use of the product [RMP Spec 10].

(2) Your RMP must contain sufficient procedures to ensure that:

a) bee product subject to the RMP is fit for its intended purpose and that it complies with the programme; and
b) legislative requirements (including regulatory limits) are met [RMP Spec 11 (1)].

Guidance
Refer to 1.4 Documentation of GOP for further information about procedures.

(3) The procedures must cover:

a) good operating practice (GOP);
b) identifying, controlling, managing, eliminating, or minimising risk factors [APA 17 (2)];
c) conduct a hazard analysis (as defined by Codex below);
    i) determine the Critical Control Points (CCP);
    ii) establish critical limits;
    iii) establish a system to monitor control of the CCP;
    iv) establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control;
    v) establish procedures for verification to confirm that the HACCP system is working effectively; and
    vi) establish documentation concerning all procedures and records appropriate to these principles and their application.
d) any corrective action procedures that are to be applied in the event of loss of control, including:
    i) how control will be restored;
    ii) how any affected bee product will be identified, controlled or disposed of;
    iii) any measures to be taken to prevent recurrence of the loss of control; and
    iv) where the loss of control is due to unforeseen circumstances and there is no specific corrective action already documented, 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 RMP verifier without unnecessary delay [RMP Spec 11].

(4) An RMP must specify the following for each identified critical control point:

a) the justification for its identification; and
b) the critical limits to be met and the justification for those limits [RMP Spec 11].

(5) An operator whose products and processes are adequately covered by the HACCP application in this document can use this for developing their RMP. The relevant HACCP sections of this Code can be copied into the RMP, or they can be incorporated into the RMP by reference. The operator may need to make some changes in the HACCP application to ensure that it accurately reflects the products and processes covered by their RMP.

(6) The operator is required to apply these HACCP principles to the process, including all inputs. The operator is **not** required to carry out hazard identification and analysis for “other sources” (e.g.

personnel and environmental sources), which are expected to be controlled by GOP (supporting systems).

(7) Applying these principles is discussed in detail in the RMP Manual.

7.1.7 HACCP application for products and processes not covered by this code

(1) Carry out your own HACCP application if the one given in this document does not adequately cover your product or process. Use the HACCP approach and format ~~shown here~~in this Code as a guide or pattern for your own application.

~~(1) This Code covers the following processes for HACCP:~~

~~a) Extraction of honey;~~
~~b) processing of liquid and creamed honey; and~~
~~c) processing of pollen.~~

(2) The HACCP application must be documented, and supported using information such as historical company records, technical publications or information provided by MPI [RMP Spec 9].

(3) The person or people involved in this activity must have the appropriate knowledge and skills regarding HACCP, the product and the process [RMP Spec 15 (1)].

7.2 HACCP application for the extraction, processing and packaging of ~~honey~~bee products

7.2.1 Scope

Guidance Table 7: Scope of the HACCP application

Components	Description/Details
Material being processed	Blossom honey or honeydew honey
Products	• Bulk honey[1] • Liquid honey[2] • Creamed honey [3] • Flavoured honey • Comb honey [4] • Pollen • Propolis • Beeswax[5] • Royal jelly • Bee venom
Process	• From receipt of supers to dispatch of packed ~~honey~~product • Key processing operations: 1) Extraction[6] 2) Processing ~~of liquid or creamed honey (including heating, straining, creaming, blending)~~ 3) Cutting of comb honey 4) Packing 5) Storage ~~5)~~6) Dispatch

1. Bulk honey is the common term used in New Zealand for honey obtained by extraction, settling or straining, and with or without minimal heating. Bulk honey is usually packed in drums or IBCs.

2. Liquid honey is extracted honey that has been processed to make it completely liquid and free from visible crystals.

3. Creamed honey is extracted honey that has been processed by controlled crystallization.

4. Comb honey is honey presented in its original comb or portions thereof.

5. Beeswax is commonly used to create moulds or fed to bees and thus a hazard analysis has not been included in this Code.

6. Extraction is the removal of honey from the comb by centrifugal force, gravity, crushing, straining or other means. Mobile extraction is also included.

7.2.2 Product descriptions

Product	Extracted honey (including mobile extraction)	Bulk honey	Liquid or creamed honey
Intended consumer	Humans (general public)	Humans (general public)	Humans (general public)
Intended use of product that leaves RMP	Further processing and packing to bulk honey	Further processing and packing to liquid/creamed honey or other honey products	Ready-to-eat Ingredient for preparation of other foods
Regulatory limits[1]	FSC 1.4.1 Sch 19-6 – Tutin 0.7mg/kg	FSC 1.4.1 Sch 19-6 – Tutin 0.7mg/kg	FSC 1.4.1 Sch 19-6 – Tutin 0.7mg/kg
Other regulatory requirements specific to honey	Honey composition FSC 2.8.2 – • reducing sugars ≥ 60% • moisture ≤ 21%	Honey composition FSC 2.8.2 – • reducing sugars ≥ 60% • moisture ≤ 21%	Honey composition FSC 2.8.2 – • reducing sugars ≥ 60% • moisture ≤ 21%
	Food Notice: Maximum Residues Levels for Agricultural Compounds Sch 1[4]	~~Animal Products Notice: Contaminant Specifications 2016: specified chemical substances in honey ≤ maximum permissible~~ Food Notice: Maximum Residues Levels for Agricultural Compounds Sch 1[2]	Food Notice: Maximum Residues Levels for Agricultural Compounds Sch 1[2]~~Animal Products Notice: Contaminant Specifications 2016: specified chemical substances in honey ≤ maximum permissible levels~~[4]
	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]
Labelling	Labelling of transportation outers Part 6.6 of this Code	Labelling of transportation outers Part 6.6 of this Code	• Labelling of retail packs as specified in the FSC • Labelling of transportation outers Part 6.6 of this Code

Guidance Table 8: Intended use and consumer of products and product requirements

Product	Flavoured honey	Comb honey	Dried pollen
Intended consumer	Humans (general public)	Humans (general public)	Humans (general public)
Intended use of product that leaves RMP	Ready-to-eat	• Ready-to-eat • Ingredient for preparation of other foods	• Ready-to-eat • Ingredient for preparation of other foods and dietary supplements
Regulatory limits[1]	FSC 1.4.1 Sch 19-6 – Tutin 0.7mg/kg	FSC 1.4.1 Sch 19-6 – Tutin 0.7mg/kg	None
Other regulatory requirements specific to honey	Honey composition FSC 2.8.2 – • reducing sugars ≥ 60% • moisture ≤ 21% Characterising ingredient FSC 1.2.10	Honey composition FSC 2.8.2 – • reducing sugars ≥ 60% • moisture ≤ 21%	Fit for purpose
	Food Notice: Maximum Residues Levels for Agricultural Compounds Sch 1[2]	Food Notice: Maximum Residues Levels for Agricultural Compounds Sch 1[2]~~Animal Products Notice: Contaminant Specifications 2016: specified chemical substances in honey ≤ maximum permissible levels[4]~~	
	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]
Labelling	• Labelling of retail packs as specified in the FSC including an ingredients • Labelling of transportation outers Part 6.6 of this Code	• Labelling of retail packs as specified in the FSC • Labelling of transportation outers Part 6.6 of this Code	• Labelling of retail packs as specified in the FSC and advisory statement as per Sch 9 • Labelling of transportation outers Part 6.6 of this Code

Guidance Table 8: Intended use and consumer of products and product requirements

Product	BeeswWax[3]	Royal jelly	Bee venom
Intended consumer	Humans (general public)	Humans (general public)	Humans (general public)
Intended use of product that leaves RMP	• Further processing into products for pharmaceutical use and manufacture of cosmetics • Further processing into comb foundation	Further processing into products for pharmaceutical use	Further processing into products for pharmaceutical use and manufacture of cosmetics
Regulatory limits[1]	None	None	None
Other regulatory requirements specific to honey	Fit for purpose*	Fit for purpose*	Fit for purpose*
	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of bee products must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of bee products must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of bee products must comply with the HC Spec 13.45[3]
Labelling	• Labelling of retail packs as specified in the FSC[1] • Labelling of transportation outers Part 6.6 of the Code	• Warning statement as specified in the FSC 1.2.3 • Labelling of transportation outers Part 6.6 of this Code	• Labelling of retail packs as specified in the FSC[1] • Labelling of transportation outers Part 6.6 of this Code

Guidance Table 8: Intended use and consumer of products and product requirements

Product	Propolis	Split honey, downgraded honey (e.g. fermented)[4]
Intended consumer	Humans (general public)	Animals
Intended use of product that leaves RMP[1]	Further processing into products for pharmaceutical use	Feed to bees and other animals e.g. horses
Regulatory limits	None	Fit for purpose
Other regulatory requirements specific to honey	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]	• A Harvest Declaration must be provided for every consignment and comply with the GREX • Every consignment of honey must comply with the HC Spec 13.45[3]
Labelling		Labelling of transportation outers Part 6.6 of this Code Labelled as "Not for Human Consumption"

1. Regulatory limits are limits that are essential to be met for food safety and are established by MPI under the APA and FSC.

2. Every consignment of honey must be provided with a Harvest Declaration as required in the GREX. This statement confirms the controls applied by the beekeeper that are intended to minimise the risks to human health from agricultural chemicals (e.g. pesticides, herbicides) and plant toxins, including tutin.

Note: Where the operator is exporting, additional labelling requirements may be described within the export requirements (OMARs).

3. BeeswWax may also be further processed into products that are not for human or animal consumption (e.g. candles, floor wax, furniture wax).

4. It is common practice in the New Zealand honey industry to downgrade honey that does not meet certain commercial requirements (e.g. burnt, fermented honey, etc.) for e.g. fed to bees or used for stock feed.

* If the product is made as a dietary supplement then the Dietary Supplement Regulations 1985 need to be met.

7.2.3 Hazard analysis and CCP determination

7.2.3.1 Identification of hazards from inputs

(1) Hazards associated with each input are identified, considering any supplier agreements / guarantees / certificates and requirements given in the Code.

Table 9: Hazard identification

Inputs	Description/specification	Biological hazard (B)	Chemical hazard (C)	Physical hazard (P)
Honey and honey supers[1]	Accompanied by Harvest Declaration	Bacterial spores (e.g. *Bacillus* spp., *Clostridium* spp.)[2]	Plant toxins (e.g. tutin)[3] Chemical residues (e.g. pesticides)[4]	Wire, wood, and nails from wooden frames Plastic from plastic frames
~~Seed~~ Starter honey	Produced under an RMP (may be own product or purchased from another supplier)	Bacterial spores (e.g. *Bacillus* spp., *Clostridium* spp.)[2]	Plant toxins (e.g. tutin)[3] Chemical residues (e.g. pesticides)[4]	None
Fresh or frozen pollen	Accompanied by Harvest Declaration	Bacterial pathogens from rodent droppings, insect fragments and wastes, dusts and other contaminants	Chemical residues (e.g. pesticides)[4] Allergen	Wood, metal pieces (e.g. staples, wire, etc.)
Imported products / ingredients	Food grade Accompanied by supplier information	Depending on the imported product / ingredient	Depending on the imported product / ingredient	Depending on the imported product / ingredient
Flavourings	Food grade, export eligible if necessary Single food or compound food e.g. lemon, ginger Accompanied by supplier information including micro test reports as appropriate	Depending on the food product	Depending on the food product	Depending on the food product
Drums / IBCs etc.	Suitable for use as food contact material as specified ~~Meets the drum requirements given~~ in 6.3	Micro contamination from left over honey or other food	~~None~~Chemical residues from recycled containers can occur	None

Inputs	Description/specification	Biological hazard (B)	Chemical hazard (C)	Physical hazard (P)
	Packaging ~~Section 8 of Part 2~~ of the Code	residues from recycled containers can occur		
Plastic containers	Suitable for use as food contact material as specified in ~~Section 8 of Part 2~~6.3 Packaging of the Code.	None	None	Plastic pieces are occasionally found in container consignments
Glass jars	Suitable for use as food contact material as specified in 6.3 Packaging ~~Section ? of Part ?~~ of the Code.	None	None	~~Glass fragments~~Pieces of broken glass are occasionally found in glass containers; jars can also break during handling and processing
Nitrogen tanks	Suitable for use as a food contact material as specified in 6.3 Packaging of the Code			

1. Generally, only new foundations and combs are used for producing comb honey.

2. Vegetative forms of bacterial pathogens (e.g. *Salmonella* spp., *Listeria monocytogenes*) have not been detected in honey. However, bacterial spores (e.g. *Bacillus* spp, *Clostridium* spp) can occur in honey. Although these spores will not grow in honey, when it is used as an ingredient in another food, the bacterial spores from honey could be introduced to and grow in that food.

3. The Food Standard: Tutin in Honey 2016 describes 5 options for managing tutin in honey to ensure tutin level is ≤0.7mg/kg.

4. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.

7.2.4 Process descriptions and hazard analyses

(1) The products listed in 7.2.1 Scope are described here in the form of process flow diagrams and hazard analysis tables as appropriate, noting:

a) the process flow diagrams show the key steps based on a generic process; and
b) process steps and their sequence may differ for each premises.

(2) The operator may need to make some changes in the HACCP application to ensure that it accurately reflects the products and processes covered by their RMP (operators must ensure that their process is accurately reflected in their RMP [RMP Spec 11]).

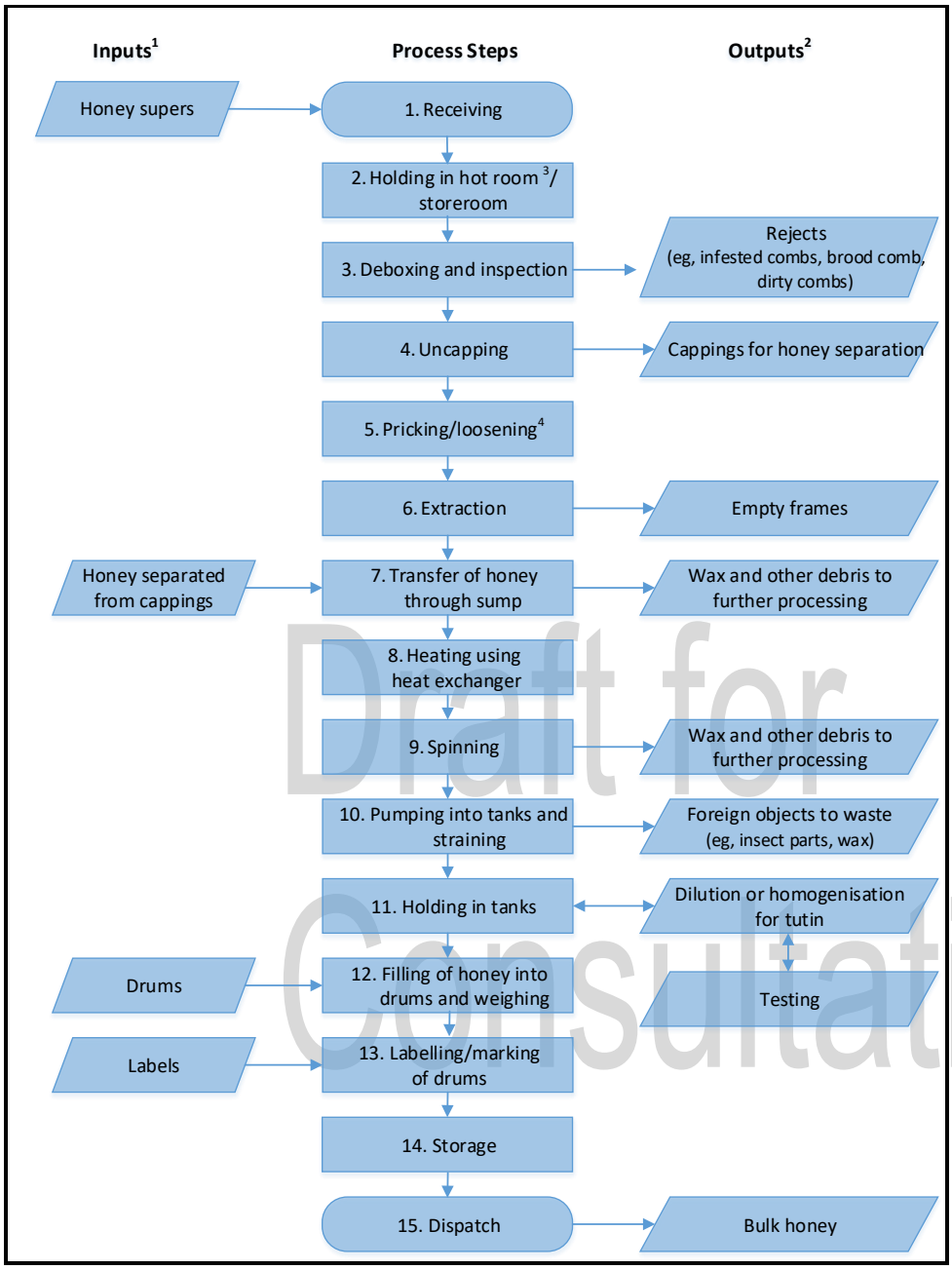
(3) An operator should review their HAACP at least annually as part of operator verification (refer to 2.4 Operator Verification and Notifications).

7.2.5 Flow diagrams available in Word format

(1) The flow diagrams of processes have been provided in a Word format for operators to amend to their individual situations as needed. These are located in the RMP Operators Resource Toolkit.

7.3 Extraction of honey

Figure 4: Generic process flow diagram for the extraction and mobile extraction of honey



1. An input is any material, additive, processing aid, ingredient, or packaging that is added or used for the production or processing of a food product.
2. An output is any material or product resulting from any operation under an RMP.
3. Some extractors do not use a hot room, particularly during warm summer days and when only a few boxes of honey are to be extracted (i.e. honey is extracted immediately after harvesting from the hives). Mobile extractors are unlikely to use a hot room.
4. Thixotropic honeys, such as manuka, can only be extracted when a pricker/loosener is used to loosen the contents of each honey cell before extraction.

7.3.1.1 Process step hazard analysis and CCP determination

Guidance Table 10: Hazard analysis and CCP determination for the extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Supers	B – Bacterial pathogens	Bacterial spores (e.g. *Bacillus* spp*, Clostridium* spp) may occur[1]	No	No	
		C – Tutin toxin	Reported incidence of tutin in NZ honey[2]	Yes – Harvest Declarations confirming beekeeper controls and options 1-5[1]	Yes	1
		C – Chemical residues	Residues may occur in honey e.g. natural, weed killers, etc.[3]	Yes – Harvest Declarations confirming beekeeper controls	No	
2. Holding in hot room / storeroom	Supers	B – Bacterial pathogens	Hazard carried over from previous step	No		
3. Deboxing	Supers	B – Bacterial pathogens	Micro contamination from boxes (e.g. dirt, insect larvae, rodent excretions) can occur	Yes – GOP: visual inspection of combs; removal of defective and infested combs; and hygienic practices may prevent contamination	No	
4. Uncapping	Combs	B – Bacterial pathogens	Micro contamination from the cappings (e.g. dirt, dust, dead bees, brood, pollen and other foreign matter) ~~is likely to~~can occur	Yes – GOP: hygienic practices; and maintenance of uncapping knife may prevent contamination	No	

Guidance Table 10: Hazard analysis and CCP determination for the extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
		P – Foreign objects	Foreign objects from the cappings (e.g. dirt, dust, dead bees, brood and other foreign matter etc.) can occur	Yes – GOP: hygienic practices may prevent contamination	No	
5. Pricking / loosening	Combs – uncapped – capped	B – Bacterial pathogens	Micro contamination from the pricker/loosener can occur	Yes – GOP: cleaning of pricker/loosener may prevent contamination	No	
6. Extraction	Uncapped or pricked combs	B – Bacterial pathogens	Micro contamination from the comb and frames ~~is likely to~~can occur	Yes – GOP: removal of damaged and dirty combs/frames; and cleaning and maintenance of equipment may prevent contamination	No	
		P – Foreign objects	Wood pieces, wire fragments and nails from wooden frames, and plastic from plastic frames can occur	Yes – GOP: maintenance of frames may prevent the hazards; and straining of honey	No	
7. Sump	Extracted honey	B – Bacterial pathogens	Micro contamination from the sump and surroundings can occur	Yes – GOP: cleaning of sump; regular removal of debris; and covering of sump may prevent contamination	No	

Guidance Table 10: Hazard analysis and CCP determination for the extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: removal of debris from the sump will remove some physical hazards	No	
	Honey separated from cappings	B – Bacterial pathogens	Honey separated from cappings can have higher micro levels	Yes – Excluding cappings ~~honey~~ from honey ~~cappings~~ will minimise micro contamination of honey	No	
8. Heating	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
		P – Foreign objects	Hazard carried over from previous step	No		
9. Spinning	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: most physical hazards are removed when honey is passed through the spinner	No	
10. Pumping into tanks and straining / filtering	Extracted honey	B – Bacterial pathogens	~~Hazard carried over from previous step~~Micro contamination from equipment can occur	~~No~~Yes – GOP: hygienic practices and cleaning of equipment will minimise contamination	No	

Guidance Table 10: Hazard analysis and CCP determination for the extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: any remaining physical hazards are removed by the strainer/filter [3]	No	
11. Holding in tanks	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: hygienic practices and cleaning of equipment may prevent contamination~~No~~	No	
12. Filling into drums and weighing	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
	Drums	B – Bacterial pathogens	Micro contamination from left over honey or other food residue can occur	Yes – GOP: mainly new drums are used Compliance with drum cleaning / drying requirements may prevent contamination Suppliers guarantee or certificate on file	No	
		C – Chemical residues	Chemical residues from re-used drums can occur	Yes – GOP: compliance with drum requirements; track recycled containers	No	
13. Labelling / marking of drums	Bulk honey	B – Bacterial pathogens	Hazard carried over from previous step	No		

Guidance Table 10: Hazard analysis and CCP determination for the extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
14. Storage	Bulk honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
15. Dispatch	Bulk honey	B – Bacterial pathogens	Hazard carried over from previous step[1]	No		
		C – Tutin toxin	Hazard carried over from step 1 ≤0.7mg/kg[2]	Yes – GOP: inventory, load out and transport is monitored by supporting systems~~No~~	No	
		C – Chemical residues	Residues ~~may~~ can occur in honey[3]	No	No	

1. Vegetative forms of bacterial pathogens (e.g. *Salmonella* spp., *Listeria monocytogenes*) have not been detected in honey. However, bacterial spores (e.g. *Bacillus* spp, *Clostridium* spp) can occur in honey. Although these spores will not grow in honey, when it is used as an ingredient in another food, the bacterial spores from honey could be introduced to and grow in that food.

2. The Food Standard: Tutin in Honey 2016 describes 5 options for managing tutin in honey to ensure tutin level is ≤0.7mg/kg.

3. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.

4. If the operation has no steps for removing foreign matter (e.g. spinner or other strainer device), bulk honey produced from this operation is likely to contain foreign matter, including objects that may be considered as physical hazards (e.g. wire, stones). The operator who will further process or pack the bulk honey must ensure that these hazards are eliminated by their process [RMP Spec 11 (1)].

Guidance Table 11 CCP summary for the extraction process of honey

CCP No.	Process step	Hazard	Critical limits	Monitoring procedures / tools	Corrective actions	Verification procedures	Validation	Records
1	Receiving	C – Tutin toxin	Tutin level is ≤0.7mg/kg	Receipt of incoming goods procedures	Hold any ineligible product and determine disposition	Product testing Internal audit External audit HACCP review	Blending equipment (where appropriate)	Harvest Declaration or equivalent records Tutin test results Blending plan

Guidance Table 12: Hazard analysis and CCP determination for the mobile extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Supers	B – Bacterial pathogens	Bacterial spores (e.g. *Bacillus* spp, *Clostridium* spp) may occur[1]	No	No	
		C – Tutin toxin	Reported incidence of tutin in NZ honey[2]	Yes – Harvest Declarations confirming beekeeper controls and options 1-5[2]	Yes	1
		C – Chemical residues	Residues may occur in honey e.g. natural, weed killers, etc.[3]	Yes – Harvest Declarations confirming beekeeper controls	No	
2. Deboxing	Supers	B – Bacterial pathogens	Micro contamination from boxes (e.g. dirt, insect larvae, rodent excretions) can occur	Yes – GOP: visual inspection of combs; removal of defective and infested combs; keeping the mobile extraction unit fully enclosed; hygienic practices and suitable immediate surrounds; and maintenance of equipment may prevent contamination	No	

Guidance Table 12: Hazard analysis and CCP determination for the mobile extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
3. Uncapping	Honey frame	B – Bacterial pathogens	Micro contamination from the comb and frames can occur	Yes – GOP: removal of damaged and dirty combs / frames; keeping the mobile extraction unit fully enclosed; hygienic practices; and maintenance of uncapping knife may prevent contamination	No	
4. Frame tank scraping / pricking	Honey frame	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: regular cleaning and removal of debris may prevent contamination	No	
		P – Foreign objects	Foreign objects include wood, wire, nails, plastic	Yes – GOP: regular maintenance will minimise contamination	No	
5. Extraction	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: regular cleaning of equipment may prevent contamination	No	
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: maintenance of frames may prevent the hazards	No	

Guidance Table 12: Hazard analysis and CCP determination for the mobile extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
	Frame empty comb	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: regular cleaning of equipment may prevent contamination	No	
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: maintenance of frames will minimise the hazards	No	
6. Sump	Extracted honey	B – Bacterial pathogens	Micro contamination from the sump and surroundings can occur	Yes – GOP: regular cleaning of pump and removal of debris may prevent contamination; and keeping the mobile extraction unit fully enclosed.	No	
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: removal of debris from the sump will remove some physical hazards	No	
7. Pumping into wax spinner	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: regular cleaning of sump; removal of debris; and enclosed sump may prevent contamination	No	

Guidance Table 12: Hazard analysis and CCP determination for the mobile extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
		P – Foreign objects	Hazard carried over from previous step[4]	Yes – GOP: removal of debris from the pump housing and hosing will remove some physical hazards	No	
8. Wax spinner	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: regular cleaning of pump and removal of debris may prevent contamination		
	Cappings	P – Foreign objects	Hazard carried over from previous step	No		
9. Pumping into strainer / filling tank	Extracted / separated honey	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: regular cleaning of pump and removal of debris may prevent contamination	No	
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: regular cleaning of pump and removal of debris may prevent contamination	No	
10. Straining / filling tank	Extracted / separated honey	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: hygienic practices and cleaning of equipment may prevent contamination	No	

Guidance Table 12: Hazard analysis and CCP determination for the mobile extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
		P – Foreign objects	Hazard carried over from previous step	Yes – GOP: any remaining physical hazards are removed by the strainer / filter	No	
12. Filling into drums and retail packaging	Extracted honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
	Drums and retail packaging	B – Bacterial pathogens	Micro contamination from left over honey or other food residues from recycled containers can occur	Yes – GOP: mainly new drums are used. Compliance with drum cleaning / drying requirements may prevent contamination Supplier guarantee or certificate on file	No	
		C – Chemical residues	Chemical residues from re-used drums can occur	Yes – GOP: compliance with drum requirements	No	
13. Labelling/ marking of drums and retail packaging	Bulk honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
14. Storage	Bulk honey and retail packaging	B – Bacterial pathogens	Hazard carried over from previous step	No		
15. Dispatch	Bulk honey and retail packaging	B – Bacterial pathogens	Hazard carried over from previous step[1]	No		

Guidance Table 12: Hazard analysis and CCP determination for the mobile extraction process of honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
		C – Tutin toxin	Hazard carried over from step 1 ≤0.7mg/kg[2]	Yes – GOP: inventory, load out and transport is monitored by supporting systems	No	
		C – Chemical residues	Residues may occur in honey[3]	No	No	

1. Vegetative forms of bacterial pathogens (e.g. *Salmonella* spp., *Listeria monocytogenes*) have not been detected in honey. However, bacterial spores (e.g. *Bacillus* spp, *Clostridium* spp) can occur in honey. Although these spores will not grow in honey, when it is used as an ingredient in another food, the bacterial spores from honey could be introduced to and grow in that food.

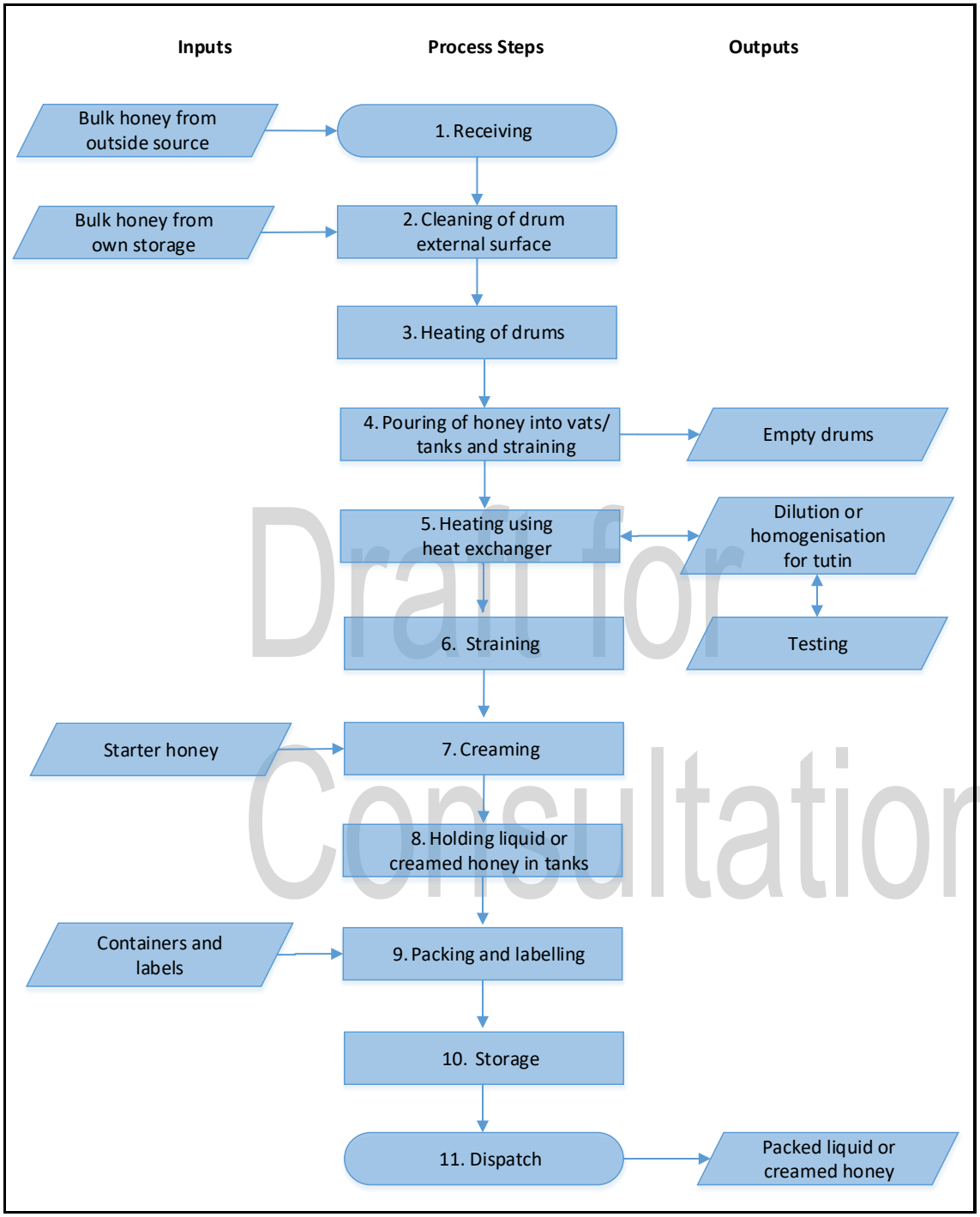
2. The Food Standard: Tutin in Honey 2016 describes 5 options for managing tutin in honey to ensure tutin level ≤0.7mg/kg.

3. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.

4. If the operation has no steps for removing foreign matter (e.g. spinner or other strainer device), bulk honey produced from this operation is likely to contain foreign matter, including objects that may be considered as physical hazards (e.g. wire, stones). The operator who will further process or pack the bulk honey must ensure that these hazards are eliminated by their process [RMP Spec 11 (1)].

7.4 Liquid and creamed honey processing

Figure 5: Generic process flow diagram for processing of liquid and creamed honey



Guidance Table 13: Hazard analysis and CCP determination for the processing of liquid and creamed honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Bulk honey[1]	B – Bacterial pathogens	Bacterial spores (e.g. *B. cereus, Clostridium* spp) may occur in honey[1]	No		
		C – Tutin toxin	Reported incidence of tutin in NZ honey[2]	Yes – Harvest Declarations confirming beekeeper controls and options 1-5[2]	Yes	1
		C – Chemical residues	Residues may occur in honey[3]	Yes – Harvest Declarations confirming beekeeper controls	No	
2. Cleaning of drum external surface	Bulk honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
3. Heating in hot room	Bulk honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
4. Transfer of honey into vats / tanks and straining	Bulk honey	B – Bacterial pathogens	Micro contamination from equipment can occur	Yes – GOP: hygienic practices and cleaning of equipment may prevent contamination	No	
5. Heating using heat exchanger	Honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
6. Filtering	Honey	B – Bacterial pathogens	Hazard carried over from previous step	No		

Guidance Table 13: Hazard analysis and CCP determination for the processing of liquid and creamed honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
7. Creaming	Honey	B – Bacterial pathogens	Micro contamination from equipment can occur	Yes – GOP: hygienic practices and cleaning of equipment may prevent contamination	No	
	Starter honey	B – Bacterial pathogens	Bacterial spores (e.g. *B. cereus, Clostridium* spp) can occur in honey[1]	No		
8. Holding in tanks	Liquid or creamed honey	B – Bacterial pathogens	Micro contamination from equipment can occur	Yes – GOP: hygienic practices and cleaning of tanks may prevent contamination	No	
9. Packing and labelling	Honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
	Glass jars and lids	P - Glass	Pieces of broken glass are occasionally found in glass consignments; jars can also break during handling and processing	Yes – GOP: supplier agreements; visual inspection; correct handling procedures; and correct equipment set-up may prevent contamination	No	
	Plastic containers	P - Plastic pieces	Plastic pieces are occasionally found in container consignments	Yes – GOP: supplier ~~agreement~~guarantee or certificate on file; visual inspection; and correct handling procedures may prevent contamination	No	

Guidance Table 13: Hazard analysis and CCP determination for the processing of liquid and creamed honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
10. Storage	Packed honey	B – Bacterial pathogens	Hazard carried over from previous step	No		
11. Dispatch	Packed honey	B – Bacterial pathogens	Hazard carried over from previous step[1]	No		
		C – Tutin toxin	Hazard carried over from step 1 <0.7mg/kg[2]	Yes – GOP: inventory, load out and transport is monitored by supporting systems~~No~~	No	
		C – Chemical residues	Residues may occur in honey[3]	No		

1. Vegetative forms of bacterial pathogens (e.g. *Listeria monocytogenes*) have not been detected in honey. However, bacterial spores (e.g. *Bacillus* spp*, Clostridium* spp) can occur in honey. Although these spores will not grow in honey, when it is used as an ingredient in another food, the bacterial spores from honey could be introduced to and grow in that food.

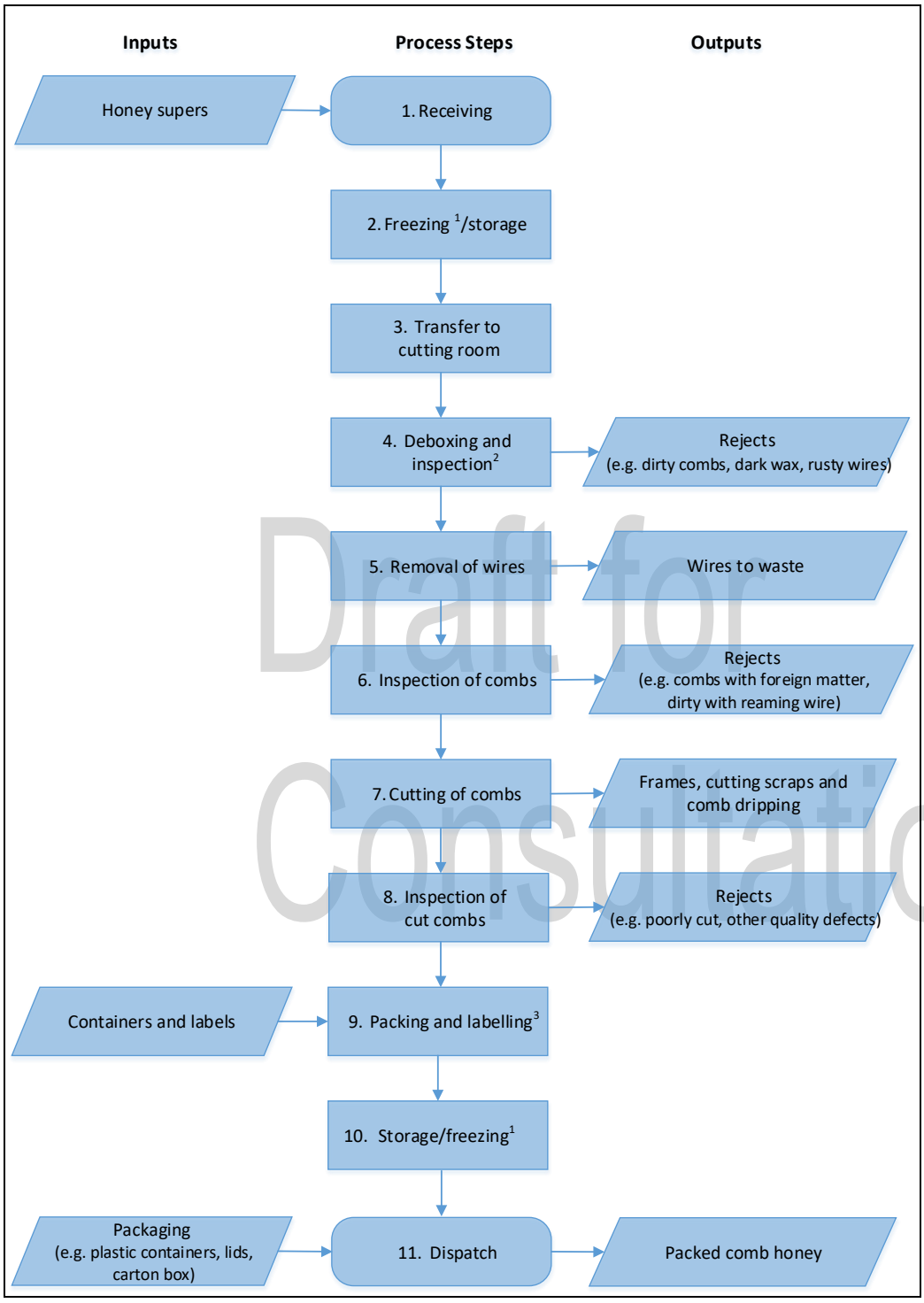
2. The Food Standard: Tutin in Honey 2016 describes 5 options for managing tutin in honey to ensure tutin level ≤0.7mg/kg.

3. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.

4. It is assumed in this hazard analysis that the bulk honey received has undergone a process which has eliminated any physical hazards (e.g. by straining). Bulk honey that has not undergone effective spinning and/or straining after extraction is likely to contain foreign matter, including objects that may be considered as physical hazards (e.g. wire, stones). The operator who will further process or pack this type of bulk honey must ensure that the relevant physical hazards are identified in their hazard analysis and controlled by their process (e.g. by filtering) [RMP Spec 11 (1)].

7.5 Comb honey processing

Figure 6: Generic process flow diagram for processing of comb honey



1. Freezing is used for killing wax moth. Wax moth is not a food safety risk.
2. The number and location of inspection steps will vary for each premises.
3. Some operators have a metal detector.

Guidance Table 14: Hazard analysis and CCP determination for the processing of comb honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Supers	B – Bacterial pathogens	Bacterial spores (e.g. *B. cereus, Clostridium* spp) can occur in honey supers[1]	No		
		C – Tutin toxin	Reported incidence of tutin in NZ honey[2]	Yes – Harvest Declarations confirming beekeeper controls and options 1-5[2]	Yes	1
		C – Chemical residues	Residues can occur in honey [3]	Yes – Harvest Declarations confirming beekeeper controls	No	
2. Freezing / storage	Supers	B – Bacterial pathogens	Hazard carried over from previous step	No		
3. Transfer to cutting room	Supers	B – Bacterial pathogens	Hazard carried over from previous step	No		
4. Deboxing and inspection	Supers	B – Bacterial pathogens	Micro contamination from boxes (e.g. dirt, insect larvae, rodent excretions) can occur	Yes – GOP: visual inspection of combs; removal of defective and infested combs; and hygienic practices may prevent contamination	No	
5. Removal of wires	Combs	B – Bacterial pathogens	Hazard carried over from previous step	No		
		P - Wire	Broken wire can be left inside the comb	Yes – GOP: correct techniques will minimise occurrence of broken wires	No	

Guidance Table 14: Hazard analysis and CCP determination for the processing of comb honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
6. Inspection of combs	Combs	B – Bacterial pathogens	Hazard carried over from previous step	No		
		P - Wire	Broken wire can occasionally be left inside the comb	Yes – GOP: inspection using a light box and rejection of affected combs	No	
7. Cutting of combs	Combs	B – Bacterial pathogens	Hazard carried over from previous step	No		
8. Inspection of cut combs	Combs	B – Bacterial pathogens	Hazard carried over from previous step	No		
9. Packing and labelling	Combs	B – Bacterial pathogens	Hazard carried over from previous step	No		
	Plastic containers	P – Plastic pieces	Plastic pieces are occasionally found in container consignments	Yes – GOP: supplier guarantee or certificate on file~~agreement~~; visual inspection; ~~of containers will prevent contamination.~~and correct handling procedures may prevent contamination	No	
10. Storage	Packed comb honey	B – Bacterial pathogens	Hazard carried over from previous step	No		

Guidance Table 14: Hazard analysis and CCP determination for the processing of comb honey

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
11. Dispatch	Packed comb honey	B – Bacterial pathogens	Hazard carried over from previous step[1]	Yes – GOP: inventory, load out and transport is monitored by supporting systems	No	
		C – Tutin toxin	Hazard carried over from step 1 <0.7mg/kg[2]	Yes – GOP: inventory, load out and transport is monitored by supporting systems	No	

1. Vegetative forms of bacterial pathogens (e.g. *Salmonella* spp., *Listeria monocytogenes*) have not been detected in honey. However, bacterial spores (e.g. *Bacillus* spp, *Clostridium* spp) can occur in honey. Although these spores will not grow in honey, when it is used as an ingredient in another food, the bacterial spores from honey could be introduced to and grow in that food.

2. Comb honey poses a greater risk to human health from tutin because it is eaten directly off the comb, increasing the chance of consuming honey with a high concentration of tutin. The Food Standard: Tutin in Honey 2016 describes 5 options for managing tutin in honey to ensure tutin level <0.7mg/kg, including having a limit of 0.01mg/kg if cut comb honey is tested to comply with option 1 or 5. Generally, comb honey processors impose stricter controls for sourcing of honey supers for comb honey production to minimise the risk to human health from tutin.

3. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives, and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.

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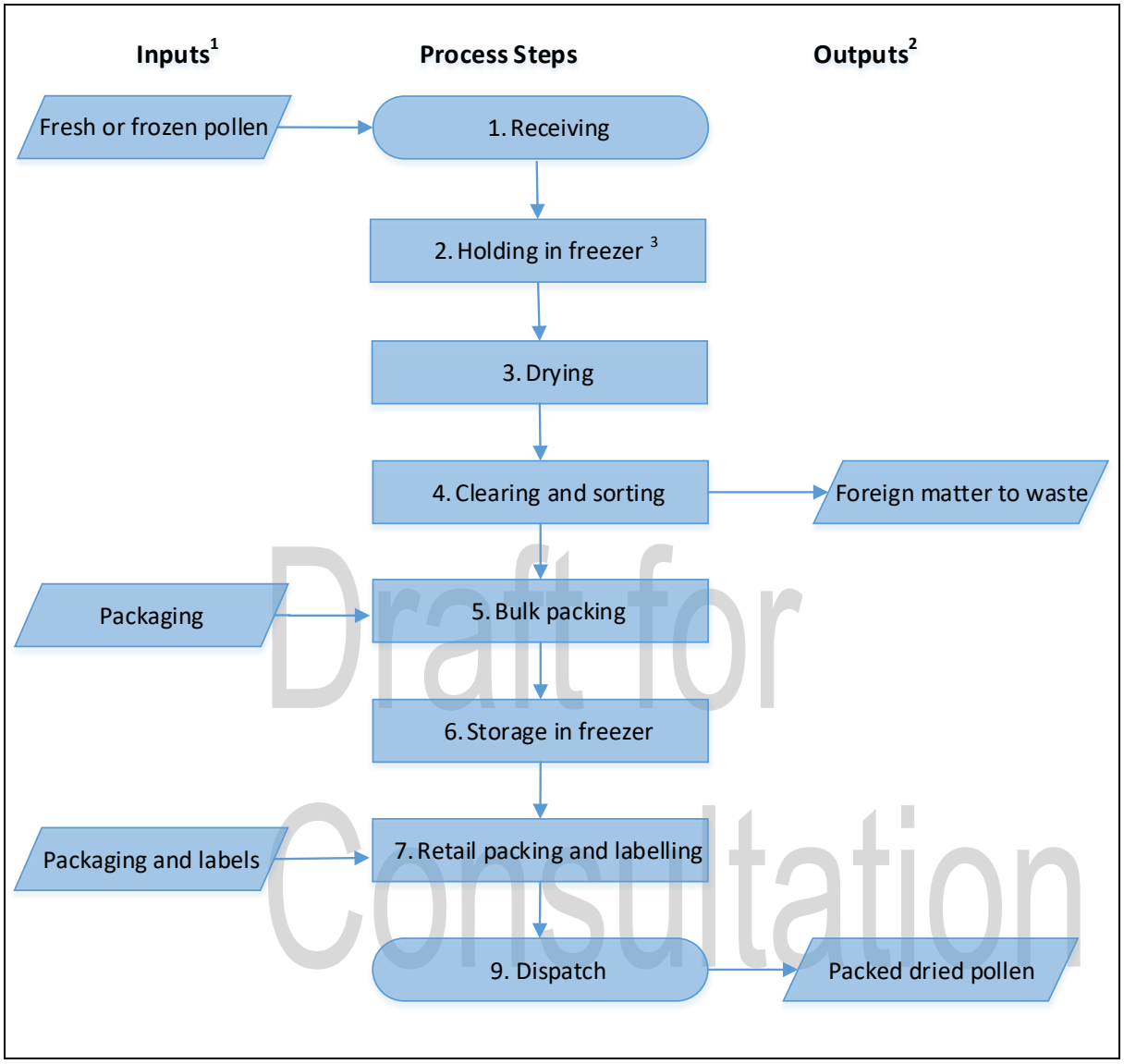
7.6 Dried pollen processing

Figure 7: Generic process flow diagram for the processing of dried pollen



1. An input is any material, additive, processing aid, ingredient, or packaging that is added or used for the production or processing of a food product.
2. An output is any material or product resulting from any operation under an RMP.
3. Freezing destroys pollen mites but pollen mites are not a food safety risk.

Guidance Table 15: Hazard analysis and CCP determination for the processing of dried pollen

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Fresh or frozen pollen	B – Bacterial pathogens	Bacterial pathogens may be present in fresh pollen from contaminants such as rodent droppings, insect parts and wastes, dust	Yes – Supplier agreements and inspection for contaminants at receipt can prevent contamination	No	
		C – Chemical residues	Residues can occur in pollen[1]	Yes – Harvest Declaration confirming beekeeper controls	No	
		C - Allergens	Pollen is known to cause severe allergic reactions in certain people[2]	No		
2. Holding in freezer	Pollen	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: proper freezing ~~will~~ may prevent micro growth[3]	No	
3. Drying	Pollen	B – Bacterial pathogens	Hazard carried over from previous step	Yes – Proper drying may reduce micro levels and prevent micro growth[3]	No	
4. Cleaning and sorting	Dried pollen	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: effective cleaning and removal of dust, insect and other physical contaminants can reduce micro levels[3]	No	
5. Bulk packing	Dried pollen	None				

Guidance Table 15: Hazard analysis and CCP determination for the processing of dried pollen

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
	Packaging	B – Bacterial pathogens~~None~~	Micro contamination from left over pollen or other food residues from recycled containers can occur	Yes – GOP: new packaging used; supplier guarantee or certificate on file	No	
		C – Chemical residues	Chemical residues can occur from recycled packaging	Yes – GOP: new packaging used; supplier guarantee or certificate on file	No	
6. Storage in freezer	Dried pollen	None				
7. Retail packing and labelling	Dried pollen	C - Allergens	Hazard carried over from step 1[2]	No. Labelling will not control the hazard but it will minimise the risk to the consumer	No	
	Packaging	~~None~~B – Bacterial pathogens	Micro contamination from left over pollen or other food residues from recycled containers can occur	Yes – GOP: new packaging used; supplier guarantee or certificate on file	No	
		C – Chemical residues	Chemical residues can occur from recycled packaging	Yes – GOP: new packaging used; supplier guarantee or certificate on file	No	
8. Storage	Packed dried pollen	C – Allergens	Carried over from previous step[2]	No		

Guidance Table 15: Hazard analysis and CCP determination for the processing of dried pollen

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
9. Dispatch	Packed dried pollen	C - Allergens	Carried over from previous step[2]	~~No~~Yes – GOP: inventory, load out and transport is monitored by supporting systems		

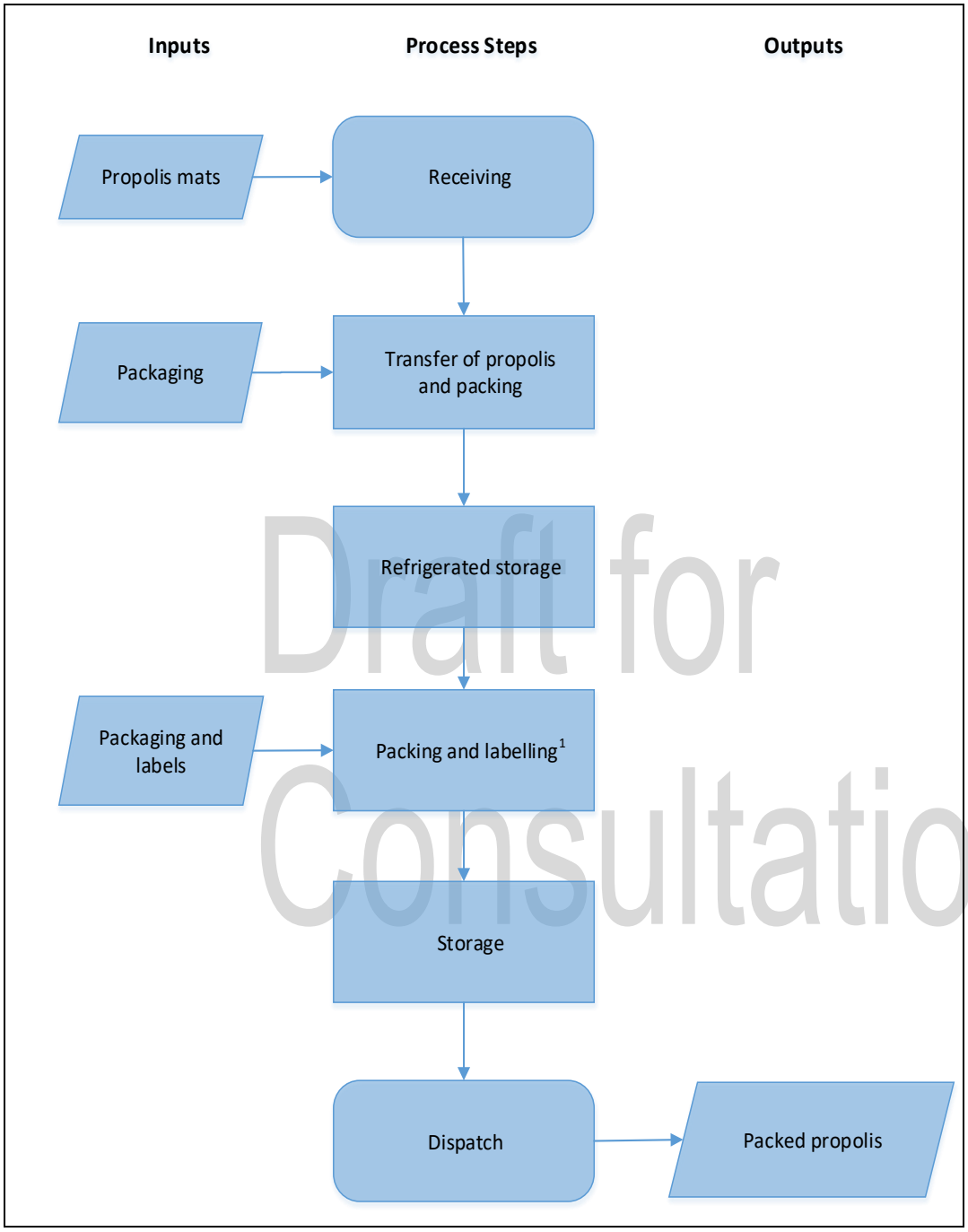
1. The control of chemical residues involves effective beekeeping practices which is confirmed through the Harvest Declaration as required by the Animal Products Notice: General Export Requirements for Bee Products 2018 (GREX). There is insufficient data, at present, to confirm the levels of chemical residues in New Zealand pollen. The level of any chemical residue is not going to increase during pollen processing, thus, they have not been considered further in succeeding steps.

2. The Report of the New Zealand Bee Product Warning Scientific Review Working Group (1999) concluded that management of risks from allergens in bee pollen should be limited to ingredient labelling of all products containing bee pollen. The FSC 1.2.3 requires that the label on a package of bee pollen must include an advisory statement to the effect that the product contains bee pollen which can cause severe allergic reactions.

3. There is insufficient information, at present, on the impact of certain process steps (e.g. freezing, drying, cleaning) on the microbiological load in bee pollen. Limited industry data suggests that proper collection of pollen, application of GOP during processing and the thorough removal of physical contaminants minimises the microbiological load in bee pollen. The hazard analysis shown in this table is based on limited industry information, and scientific information on the general impact of these process steps on microorganisms in food. Further investigation is necessary to confirm the hazard analysis.

7.7 Propolis processing

Figure 8: Generic process flow diagram for the processing of propolis



1. The FSC Schedule 9 states that if a food is or includes propolis as an ingredient, then a warning statement is required on the label.

Guidance Table 16: Hazard analysis and CCP determination for propolis processing

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Propolis mats	B – Bacterial pathogens	Micro contamination from personnel; and transfer container or packaging can occur	No		
		C – Chemical residues	Residues can occur in propolis from the environment and agricultural activities[1]	Yes – Harvest Declarations confirming beekeeper controls; and testing for heavy metals, ash, etc.	No	
		C- Allergens	Propolis is known to cause severe allergic reactions in certain people[2]	No		
2. Transfer of propolis	Propolis removal	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: hygienic practices can prevent contamination	No	
	Packing	B – Bacterial pathogens	Micro contamination from left over propolis or other food residues from recycled containers can occur	Yes – GOP: new packaging used	No	
		C – Chemical residues	Chemical residues can occur from recycled packaging	Yes – GOP: new packaging used	No	
3. Storage	Refrigerated storage	B – Bacterial pathogens	Micro contamination can occur from transfer container	Yes – GOP: ensuring transfer container cleaned before use;	No	

Guidance Table 16: Hazard analysis and CCP determination for propolis processing

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
				and temperature control <5°C may prevent micro growth		
		B – Bacterial pathogens	Microbiological growth due to refrigeration failure, and/or non-compliance with established refrigeration parameters (e.g. loading capacity)	Yes – GOP: ensuring design and construction is suitable; and refrigeration monitoring procedures	No	
		B – Bacterial pathogens	Increase in micro levels due to non-compliance with shelf life	Yes – GOP: procedures for ensuring storage periods are met	No	
		C – Chemical residues	Cleaner residue on transfer container surface	Yes – GOP: transfer containers are rinsed with isopropyl alcohol	No	
4. Packing and labelling	Transfer container	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: outside of transfer containers are rinsed with isopropyl alcohol	No	
		C - Allergens	Hazard carried over from step 1[2]	No. Labelling will not control the hazard but it will minimise the risk to the consumer		
5. Storage	Packed propolis	B – Bacterial pathogens	Hazard carried over from previous step	No		

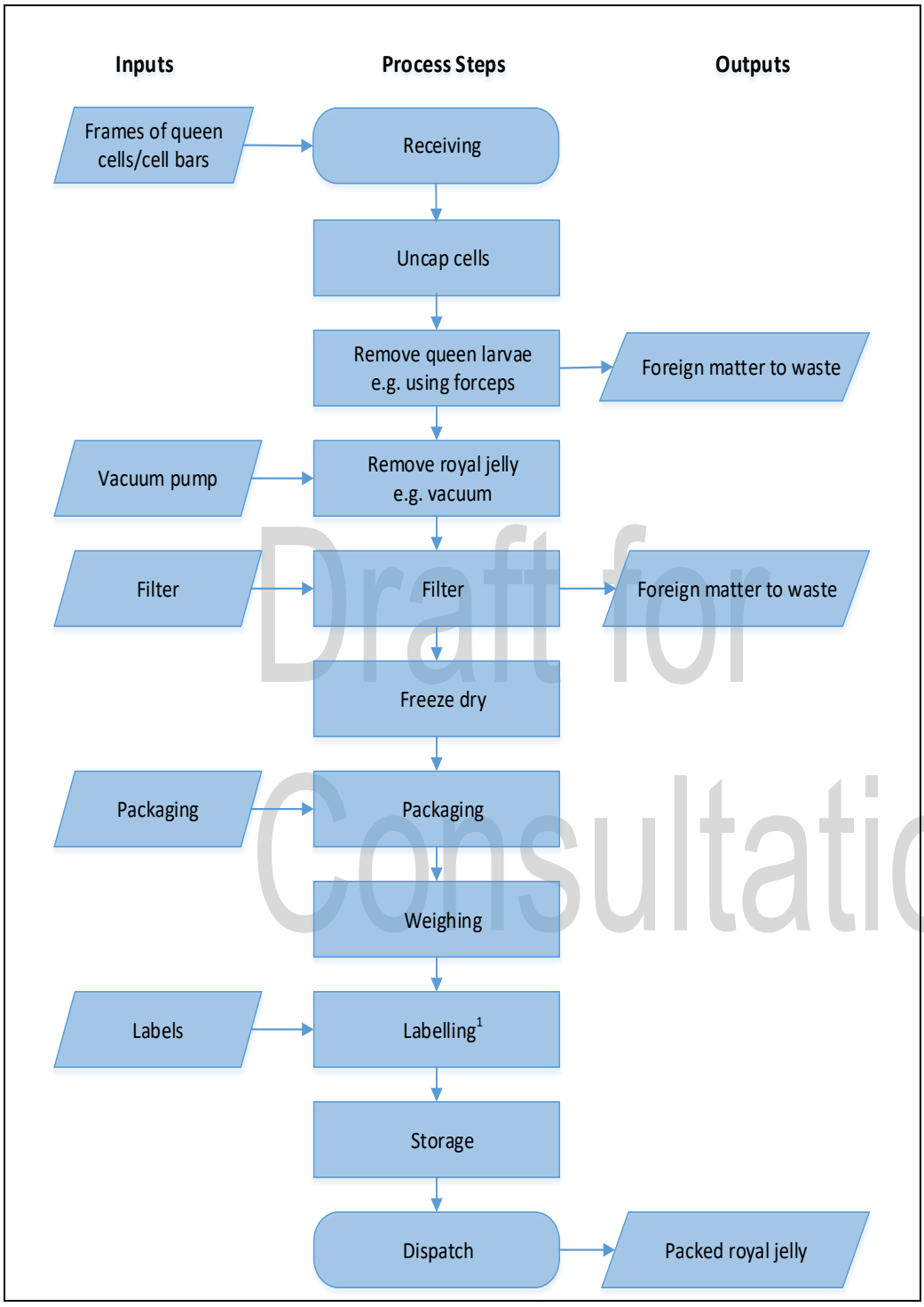
Guidance Table 16: Hazard analysis and CCP determination for propolis processing

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
6. Dispatch	Packed propolis	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: inventory, load out and transport is monitored by supporting systems	No	

1. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives, and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected product and contact your verification agency or MPI for advice.
2. The FSC Schedule 9 states that if a food is or includes propolis as an ingredient, then a warning statement is required on the label.

7.8 Royal jelly collection and processing

Figure 9: Generic process flow diagram for the collection and processing of royal jelly



1. The FSC 1.2.3 states that if a food is or includes royal jelly as an ingredient, then a warning statement is required on the label.

Guidance Table 17: Hazard analysis and CCP determination for royal jelly collection and processing

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Queen cells / cell bars	B – Bacterial pathogens	Micro contamination from queen cells (e.g. dirt, insect larvae, rodent excretions) can occur	No		
		C – Chemical residues	Residues can occur in queen cell comb / wax[1]	Yes – Harvest Declarations confirming beekeeper controls	No	
		C - Allergens	Royal jelly is known to cause severe allergic reactions in certain people[2]	No		
2. Uncapping	Queen cells / cell bars	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: visual and odour inspection of cells; and hygienic practices may prevent contamination	No	
		P – Foreign objects	Foreign objects include plastic and wood pieces	Yes – GOP: maintenance of cell bars may prevent the hazards	No	
3. Larvae removal with e.g. forceps	Queen cells / cell bars	B – Bacterial pathogens	Micro contamination can occur when the larvae are not removed from cell intact	Yes – GOP: visual inspection of cells; and hygienic practices may prevent contamination	No	
		P – foreign objects	Fine tips on tools can wear and damage at different rates	Yes – GOP: equipment inspection and replacement controls	No	

Guidance Table 17: Hazard analysis and CCP determination for royal jelly collection and processing

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
4. Remove royal jelly e.g. vacuum	Queen cells / cell bars	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: freezing of cell bars before re-use may prevent contamination	No	
	Royal jelly	P – Foreign objects	Broken wire can be left inside the comb	Yes – GOP: correct sanitation of vacuum tank and hygienic practices may prevent contamination	No	
5. Filtering	Royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: replacement of filter bag per batch; and hygienic practices may prevent contamination	No	
		P – Foreign objects	Foreign objects include e.g. tooling steel, wood, plastic cell cup fragments	Yes – GOP: replacement of filter bag per batch; and hygienic practices may prevent contamination	No	
6. Freeze drying	Royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: sanitation of freeze drier; and hygienic practices may prevent contamination	No	
		B – Bacterial pathogens	Microbiological growth due to refrigeration failure, and/or non-compliance with established refrigeration	Yes – GOP: ensuring design and construction is suitable; and refrigeration monitoring procedures	No	

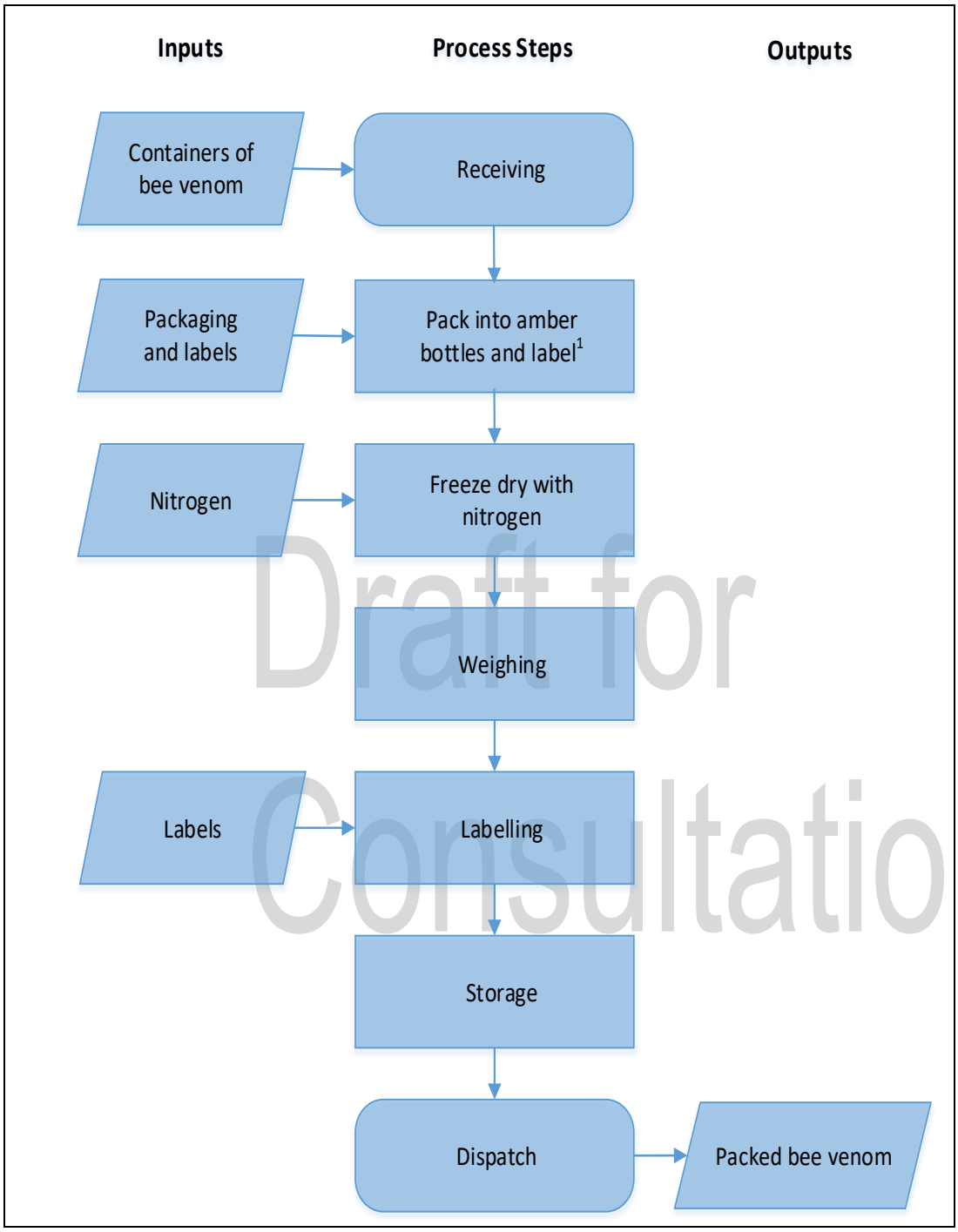
Guidance Table 17: Hazard analysis and CCP determination for royal jelly collection and processing

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
			parameters (e.g. loading capacity)			
		C – Chemical residues	Sanitiser residues may occur. Freeze dryer sanitised and air dried before and after use and between different products.	Yes – GOP: sanitation of freeze drier; and hygienic practices may prevent contamination	No	
7. Packaging	Royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: containers kept sealed until used; and supplier's guarantee or certificate on file	No	
8. Weighing	Royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	No		
9. Labelling	Royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: inventory control	No	
		C - Allergens	Hazard carried over from step 1[2]	No. Labelling will not control the hazard but will minimise the risk to the consumer		
10. Storage	Packed royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	No		
11. Dispatch	Packed royal jelly	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: inventory, load out and transport is monitored by supporting systems	No	

1. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives, and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.
2. The FSC 1.2.3 states that if a food is or includes royal jelly as an ingredient, then a warning statement is required on the label.

7.9 Bee venom processing

Figure 10: Generic process flow diagram for the processing of bee venom



1. Bee venom can cause allergic reactions in certain people and careful handling is needed.

Guidance Table 18: Hazard analysis and CCP determination and processing of bee venom

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
1. Receiving	Transfer container	B – Bacterial pathogens	Micro contamination can occur from transfer container	Yes – GOP: ensuring transfer container cleaned before use; and temperature control e.g. <5°C may prevent micro growth	No	
		C – Chemical residues	Cleaner residue on transfer container surface	Yes – GOP: transfer containers are rinsed with isopropyl alcohol; Harvest Declarations confirming beekeeper controls[1]	No	
		C- Allergens	Bee venom is known to cause allergic reactions in certain people[2]	No		
4. Packing and labelling	Transfer container	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: outside of transfer containers are rinsed with isopropyl alcohol	No	
	Amber glass bottles	B – Bacterial pathogens	Micro contamination can occur from amber bottles	Yes – GOP: amber bottles are cleaned before use; and supplier guarantee or certificate on file	No	
		P – Glass fragments	Pieces of broken glass are occasionally found in glass containers; jars can also break during handling and processing	Yes – GOP: correct equipment set-up and maintenance; and routine observation during checking; breakage procedures	No	

Guidance Table 18: Hazard analysis and CCP determination and processing of bee venom

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? If yes, identify the control measure and then answer Q2. If no, consider hazard at next step.	Q2. Is the control measure at this step essential to food safety as defined by a regulatory limit? If yes, this step is a CCP. If no, this step is not a CCP.	CCP no.
5. Freeze dry with nitrogen	Nitrogen gas	C – Chemical residues	Possible chemical contamination	Yes – GOP: supplier's guarantee or certificate on file	No	
	Nitrogen tank	B – Bacterial pathogens	Micro contamination from tank can occur	Yes – GOP: hygienic practices; and cleaning of tank may prevent contamination	No	
5. Weighing	Bee venom into amber glass bottles	B – Bacterial pathogens	Hazard carried over from previous step	No		
6. Labelling	Bee venom into amber glass bottles	B – Bacterial pathogens	Hazard carried over from previous step	No		
7. Storage	Packed bee venom	B – Bacterial pathogens	Hazard carried over from previous step	No		
8. Dispatch	Packed bee venom	B – Bacterial pathogens	Hazard carried over from previous step	Yes – GOP: inventory, load out and transport is monitored by supporting systems	No	

1. Chemical residues can occur when beekeepers or farmers use agricultural chemicals and veterinary medicines in and around hives. Beekeepers must follow all product label directions when directly treating hives, and work to minimise bee's exposure to pastures sprayed with agricultural chemicals while honey supers are on their hives. If beekeepers inform you of any potential concerns regarding chemical exposure of bees or honey supers, or declare a known or suspected exposure, defer extracting the affected supers and contact your verification agency or MPI for advice.
2. Bee venom can cause allergic reactions in certain people and careful handling is needed.

Part 8: Identification and control of risk factors related to wholesomeness and labelling

8.1 Introduction

8.1.1 Purpose of this document

(1) The operator must identify in their RMP any risk to the wholesomeness of the product, and any risk from false or misleading labelling that is reasonably likely to occur. The operator must also document the control measures for effectively addressing any identified risk factor [RMP Spec 7 and 8].

(2) You can develop your RMP where your products and processes are adequately covered by the risk factor identification in this Code. Copy or incorporate by reference into your RMP. You should make some changes to ensure that the risk factor identification accurately reflects the products and processes covered by their RMP.

(3) When the risk factor identification in this document does not adequately cover your product or process, you should carry out your own risk factor identification. Use the approach and format shown here as a guide or pattern for your own application.

8.1.2 Wholesomeness

(1) Wholesomeness, means that the product does not contain or have attached to it, enclosed with it, or in contact with it; anything that is offensive, or whose presence would be unexpected or unusual in product of that description. Examples of wholesomeness risk factors relevant to honey are fermented honey and the presence of foreign objects that are not considered as physical hazards (e.g. insect parts).

8.1.3 False or misleading labelling

(1) Animal products intended for the New Zealand market must meet all relevant legislative requirements related to labelling including:

a) The Animal Product Regulations 2000, regulations 8 and 19;
b) Part 8 Labelling of the Animal Products Notice: Specifications for Products For Human Consumption 2016; and
c) Part 1.2 Labelling and other information requirements of the Australia New Zealand Food Standards Code.

(2) 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).

(3) 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.

(4) Risk factors related to wholesomeness and labelling are discussed in detail in the RMP Manual.

8.2 Identification and control of risks to wholesomeness

Guidance Table 16: Summary of identified risk factors and controls related to wholesomeness of honey

Risk factor	Source or cause of risk factor	Control measures for preventing/ minimising the risk factor
Fermented honey	High moisture content	Measure honey moisture in the comb Proper draining and drying of equipment Preventing water or steam from getting into the product Proper storage
	High yeast level	Hygienic practices Cleaning and sanitation
Insect and insect parts	Bees and other insects	Removal or prevention of ingress of live bees Covering of equipment Pest control Proper storage of supers Straining Freezing or fumigation of comb honey
Other foreign matter that are not considered as physical hazards (e.g. wood, propolis, wax, other debris)	From frames, capping surfaces	Maintenance of frames in good condition Hygienic practices Cleaning and sanitation Proper storage of supers Straining

Guidance Table 17: Summary of identified risk factors and controls related to wholesomeness of dried pollen

Risk factor	Source or cause of risk factor	Control measures for preventing/ minimising the risk factor
Mouldy pollen	High moisture content	Rejection of mouldy pollen at receipt Drying to correct moisture content
	Improper holding temperature	Proper freezing of fresh pollen
	Improper packaging and/or storage	Proper packaging and storage of dried pollen
Foreign matter that are not considered as physical hazards (e.g. wood, wax, insect parts, other debris)	Contaminants from hives, bees and other debris collected in or surrounding pollen traps	Supplier agreements covering good hive maintenance and practices; hygienic collection; incoming material specifications Rejection of fresh pollen with high levels of foreign matter Sieving and cleaning

8.3 Identification and control of risks from false or misleading labelling

Guidance Table 18: Summary of identified risk factors and controls related to false or misleading labelling of honey and other bee products

Risk factor	Source or cause of risk factor	Control measure for preventing/minimising the risk factor
All products		
Incorrect details on label or transportation outers e.g. • type of product • claims (e.g. organic) • product description • lot identification or batch number • floral species	Incorrect label design	Procedures for ensuring correct label design and compliance with regulatory requirements
	Processing errors e.g.: • wrong identification of drums • wrong product put in a pre-labelled container • wrong label or information put on product (e.g. date, batch number)	Procedures for ensuring correct packaging and labelling of products