



Code of Practice - Processing of Poultry:

Part 2 – Good Manufacturing Practice

**Chapter 9: Secondary Processing**

## Prelims

Amendment 0

April 2009

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Disclaimer

***IMPORTANT DISCLAIMER***

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

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

***Website***

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

**Review of Code of Practice**

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

Assistant Director (Production and Processing)

New Zealand Standards Group

New Zealand Food Safety Authority

P O Box 2835

Wellington

Telephone: 04 894 2500

Facsimile: 04 894 2643

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# 1. Purpose and Scope

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## 1.1 Purpose and Scope

This Code of Practice (COP) describes good operating practices designed to help ensure that the processing of broiler chickens results in products that are fit for their intended purpose. The COP has been written for Risk Management Programme (RMP) operators and operators under the Food Act who are secondary processing poultry products.

This chapter covers processing of broilers after dressing and primary chilling, or from the receipt of product from a primary processor, and finishes at the point prior to further processing (as defined in section 1.3 of this document).

## 1.2 Status of Code of Practice

This COP contains:

- mandatory requirements;
- procedures for compliance; and
- guidance material (shown in boxes).

Poultry processors must comply with the mandatory requirements.

Poultry processors must comply with the procedures for compliance unless their alternative practices have been approved by the NZFSA.

Any alternative practices must be documented within the poultry processor's risk management programme or documented systems. Approval for the alternative would be given through registration of the RMP or a significant amendment to a risk management programme (which must be provided to NZFSA at the time of registration), or through any approval of the documented systems e.g. FSP.

The guidance material in boxes in this COP is non-mandatory, and is given to help both operators and verifiers/auditors interpret NZFSA's expectations.

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### 1.3 Definitions

The following definitions are additional to the definitions in the Animal Products Act 1999:

**Broiler** means a male or female chicken kept primarily for meat production.

**Clean (verb)** means to remove visible contaminants from any surface.

**Comminution** means to reduce in size by methods such as mincing, slicing, dicing but does not include mechanical separation.

**Further processing** in relation to this COP means any heat treatments (such as flash frying/par frying, curing, smoking, and cooking, etc.) and includes any associated crumbing, coating and comminution after the heat treatment.

**Good operating practice** means documented procedures relating to practices that are required to achieve the fitness for intended purpose of the product and are appropriate to the business.

**Poultry** includes chicken, turkeys, ducks, pheasants, quail, guinea fowl, geese, partridges, poussin, pigeons and other game birds.

**Primary processing** includes slaughter and dressing of poultry, and associated activities.

**Processing aid** means a substance listed in clauses 3 to 18 of Standard 1.3.3 of the Australia New Zealand Food Standards Code, and which is used in accordance with the Standard.

**Rework (noun)** means product that has been through some or all of the process and is reintroduced at an earlier stage of the process.

**Rework (verb)** means the reintroduction of product that has been through some or all of the process into an earlier stage of the process.

**Sanitise** means the application of an appropriate processing aid, approved maintenance compound or physical agent to minimise microbial contamination.

**Secondary processing**, in relation to this COP means any processing and the associated activities beyond the slaughter and dressing of poultry, to the point of further processing.

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## 2. Regulatory Requirements

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### 2.1 Introduction

Below is a summary of the legislation under the Animal Products Act 1999 (APA) that is most applicable to poultry processing. Web links for documents current at the date of issue of this COP are given. These may become out of date and the summary is not exhaustive. To access all current legislation go to the general link:

<http://www.nzfsa.govt.nz/animalproducts/legislation/index.htm>

It is the responsibility of the operator to be aware of and comply with all applicable current legislation.

### 2.2 Summary of Most Applicable Legislation

Animal Products Act 1999:

<http://www.nzfsa.govt.nz/site/exit/legislation/index.htm>

Food Standards Code – Parts 1 and 2:

<http://www.foodstandards.gov.au/thecode/foodstandardscode/index.cfm>

Animal Products Regulations 2000:

<http://www.nzfsa.govt.nz/animalproducts/legislation/regulations/ap-regulations-2000.pdf>

Animal Products (Specifications for Products intended for Human Consumption) Notice 2004, particularly specifications 4 to 34, 68 to 76A, 113 to 116 and 143 to 147:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/human-consumption/admin-consolidation-of-hc-spec.pdf>

Animal Products (Specifications for Products intended for Animal Consumption) Notice 2006:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/animal-consumption/animalconsumptionspecifications.pdf>

Approved Maintenance Compounds:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/human-consumption/notice-man-15.pdf> and

<http://www.nzfsa.govt.nz/animalproducts/registers-lists/manual15/index.htm>

## 3. Procedures for Compliance

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### 3.1 General

The operator must document procedures covering their processing activities.

The capacity and capability of secondary processing operations should be aligned with throughput such that product accumulation in processing areas is minimised.

Visibly contaminated or dropped product must be handled in accordance with Part 2 Chapter 5: Product Contacting Non-Food Contact Surfaces (Dropped product).

The build-up of scraps and waste material on equipment must be removed during breaks or earlier if necessary to minimise contamination.

If left to build-up, scraps and waste material can be a source of contamination to product that is subsequently processed on that equipment. This is particularly the case if a processing area is operating at ambient temperatures, as the growth rate of spoilage and pathogenic micro-organisms increases as the temperatures increase.

A cleaning programme must be in place for all processing equipment. The programme must include a frequency that is sufficient to ensure that a build-up of material to unacceptable levels does not occur. (Note: Chapter 3, which is still to be written will address cleaning and sanitation in more detail).

Controls must be documented to address the presence of unexpected extraneous material such as bones (in boneless product), feathers and cartilage in the product.

The presence of extraneous material would be considered a wholesomeness risk factor as defined in the APA; something that is unexpected or unusual in the product.

Product must be downgraded if its status becomes unknown e.g. due to failure in the method of identification used such as labels being lost or becoming unreadable. The degree to which product is downgraded (e.g. petfood, waste) will depend on the nature of the failure and must ensure that there is no risk to the intended consumer of the downgraded product.

### 3.1.1 Minimising Cross Contamination

Unpackaged poultry meat types with relatively high microbial counts (e.g. offal) must be processed separately from that with relatively low microbial counts (e.g. whole birds) unless the finished product includes a mixture of those types.

Product contact surfaces and equipment used for processing product with relatively high microbial counts (e.g. offal) must be cleaned and sanitised before processing products with relatively low microbial counts (e.g. whole birds).

It is acceptable to process poultry meat types with relatively low microbial counts before processing meats with relatively high microbial counts without the need to clean and sanitise in between.

It is not expected that the operator specifically test the different meat types to determine whether a certain batch has higher levels of contamination and as such needs to be processed separately. Rather the operator should use any previous validation, along with their general knowledge of microbial levels within their product, to assist with production planning.

Separation may be achieved by physical barriers, distance or time.

- physical separation means processing in areas with a physical barrier between them to prevent cross contamination, e.g. in different rooms.

- separation by distance means processing in the same room but using different equipment and product contact surfaces, which are far enough apart to avoid cross contamination from direct contact, dripping, splashing, run-off, aerosols or any indirect means.

- separation by time means using shared rooms, equipment and facilities, but at different times of the day, so that only one type of material or product is present at a time.

If swapping from raw to cooked product processing using the same equipment, the equipment must be given a complete clean down, including dismantling and cleaning and sanitising all parts.

Wet cleaning during processing is not recommended where this may lead to greater levels of cross contamination in the processing areas.

Water movement must be controlled in the processing areas, except where the operator can demonstrate that any uncontrolled water cannot contaminate product or product contact surfaces.

As a minimum the following water controls should be in place:

- all water in processing areas should be ducted to a drain;
- water pooling in processing areas should be avoided;
- drip/splash between different product types should be minimised.

Containers used for product intended for human consumption must not be placed directly on the floor.

Containers that are permitted to be placed directly on the floor must be distinguishable from those used for product intended for human consumption.

It is recommended that colour be used to differentiate between containers that are used for different purposes e.g. human consumption, animal consumption, waste. Where labels are used, care should be taken to ensure that they cannot detach and drop into product.

### 3.1.2 Separation of Different Meat Types or Species

Different types or species of meat (e.g. poultry, red meat, fish) must be processed in a manner that will minimise cross contamination between them unless the final product includes a mixture of those same types or species.

If different meat types or species are processed at the same time but need to be kept separate, each operation must be separated by distance or physical barriers. In addition, different personnel must attend to each type or species unless procedures are in place to ensure that no cross contamination occurs. Once product is no longer exposed (e.g. is packaged) separation to minimise contamination is no longer necessary through the remainder of the process e.g. weighing, labelling, strapping etc.

Product contact surfaces and equipment used for one meat type or species must be cleaned and sanitised before processing meat from any other type or species, unless the final product includes a mixture of those same types or species.

Key reasons for requiring separation between meat types or species is the varying microbial loadings and consumer expectations. Whether further differentiation between red meat

species e.g. beef, lamb, and venison is needed, with a full clean down between the species depends on the expectations of the intended consumer. If your intended consumer would consider a lack of separation to be a risk to wholesomeness (i.e. objectionable or offensive) procedures will need to be put in place to ensure that this risk factor is controlled.

### 3.1.3 Temperature Control during Processing

To maintain chill product temperatures, product must be brought into the processing room progressively as needed, and removed to the chiller or freezer immediately after processing.

If the temperature of the raw poultry exceeds 10°C (e.g. processing is delayed) poultry must be processed immediately or immediate action must be taken to reduce this temperature.

Actions may include using ice to reduce the product temperature or transferring the poultry to a chiller or freezer.

If the raw meat processing area is operating at ambient temperatures the poultry must be held in the processing area for no more than 1 hour.

To minimise the growth of bacteria on food contact surfaces during processing and to assist in maintaining chill product temperatures it is strongly recommended that raw meat processing areas be operated at 12°C or less. New businesses should consider this when designing their facilities.

If the raw meat processing areas are operating at ambient temperatures they are likely to require more frequent cleaning. The frequency of cleaning will require validation. (Refer to Chapter 3, Cleaning and Sanitation – to be written).

## 3.2 Whole Birds

Where possible, whole birds should be received after the completion of primary chilling at a temperature of 10°C or less. Where this is not the case, the operator must complete the chilling process as quickly as possible.

It is recommended that bins containing product awaiting packaging be completely emptied prior to refilling.

## 3.3 Maturing

Maturing is typically achieved by chilling product for a period of time, usually 4 to 6 hours at 4°C or less. It is recommended that the maturing period does not exceed 72 hours. To

increase the rate of maturation, electrical stimulation may be used. Processes such as marinating may also be used to mature product.

The temperature of the maturing room and product must minimise the growth of pathogenic and spoilage organisms throughout the maturing process.

### 3.4 Boning and Size Reduction

The control of physical hazards that are reasonably likely to occur such as blades, knives, needles and equipment parts must be demonstrated and recorded. If a problem is identified the operator must take appropriate action.

As a minimum, checks on blades, knives and needles must occur at the end of each production day to ensure no breaks, chips or missing items.

The more frequent the checks, the less product that will be affected in the event that a problem occurs. Actions in the event of a problem should include holding and inspecting all affected product since the last compliant result, until the item is located.

The presence of bone in boneless product must be minimised.

Checks for bone in boneless product should be conducted at a frequency sufficient to accurately monitor their occurrence, and appropriate actions taken in the event that the levels found exceed the documented process capability. Actions could include providing staff with additional training and increasing the frequency of inspection until the cause of the problem is rectified.

Product intended for further processing requiring specified weight ranges or dimensions to ensure food safety (e.g. product to be cooked), must be checked to ensure that it falls within that range.

Where possible separate equipment should be used for the size reduction of raw and cooked product. Where this is not possible, the operator will need to document and implement a validated cleaning and sanitation programme that will ensure that no cross contamination occurs. The programme will need to address any specific areas of concern associated with that piece of equipment.

#### 3.4.1 Comminution

Comminution must be conducted in a manner that minimises contamination and growth of micro-organisms.

The temperature of meat must be reduced to the preservation temperature immediately after comminution unless it is immediately subject to further processing.

When undergoing comminution, the following points should be considered:

- temperature increases, often as high as 10°C, have been observed as a result of the energy required during comminution, which can then allow for more rapid bacterial growth;
- reducing the product temperature prior to comminution should ensure that cooling time after comminution minimises the opportunity for microbial growth.
- the cooling rate at the slowest cooling point within the product should be considered when determining the cooling rate, particularly if product is collected into large containers or bins;
- product should remain in the processing area for the shortest time possible;
- trimmings are often subject to high levels of handling and possibly temperature fluctuation, and as such, will be more highly contaminated;
- to prevent contamination by extraneous material, raw material should be checked before comminution;
- any accumulated product should be periodically removed from the equipment;
- the product environment and hygiene of food contact surfaces should be maintained according to the requirements of chapter 3 (to be written).

### 3.4.2 Mechanically Separated Meat (MSM), HC Spec 113

NZFSA is considering developing microbiological criteria for MSM. It is recommended that operators periodically check the microbiological levels (in particular *Staphylococcus aureus*) within their MSM to build up knowledge of the process. In the event that higher than normal microbial levels are detected, the operator should investigate the cause and take appropriate actions.

Records must be kept to show that MSM has been processed in accordance with the requirements of the specification.

When producing frozen MSM care should be taken to ensure that packaging does not become trapped within the product, which could then be inadvertently be included in further processed products. Alternative packaging materials such as wax lined boxes could be used to avoid this.

## 3.5 Formulated Products

### 3.5.1 Inputs, HC Spec 15 and 16

The operator should have an appropriate supporting system for inputs (ingredients, additives and processing aids). The following points should be considered, as appropriate to the input:

- develop specifications for the input that are appropriate to the hazards that are reasonably likely to occur and considering how the input is to be used;
- develop a list of approved/trusted suppliers (e.g. by reputation, reliability, quality of inputs received);
- on receipt of the input, check the information provided by the supplier such as certificates of conformance to confirm that the input meets its specification;
- check samples of the input periodically against the input specifications. The need for this should be based on the operator's knowledge of the input and the supplier;
- where possible, periodically audit the approved suppliers premises. Audits performed by other parties may be used to provide the necessary confidence in their systems;

- ensure that the supplier informs the operator if there is a change to the input specification or if there is a problem that could impact on fitness for intended purpose of the product.

Inputs must comply with the requirements of the Food Standards Code.

Domestically sourced inputs must be obtained from suppliers who are trading under appropriate legislation (e.g. Food Act, Animal Products Act). Imported inputs must meet all applicable legislation relating to imported food.

Inputs must be checked, on arrival or prior to use to ensure they are clearly labelled and are fit for purpose.

Inputs must be stored:

- 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;
- e. with clear identification.

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 input is used within any shelf life provided for opened products;
- discard the input if it becomes contaminated, is no longer suitable for use or if information that should be available with the input is lost (e.g. identity, storage instructions, shelf life);
- discard the input if there is any concern or suspicion that it may have been contaminated such that its allergen status may be affected.

Process gases should be filtered and the filters maintained and changed as per manufacturer's recommendations.

Raw unprocessed vegetables must be prepared separately e.g. not in areas where there is exposed finished product.

In this COP, raw unprocessed vegetables refer to those that are received in an unwashed and/or unpeeled state. Raw unprocessed vegetables can bring a range of contaminants such as dirt and micro-organisms into the processing areas. It is important that they are prepared using GOP in manner that does not contaminate other inputs or products.

### 3.5.2 Allergen Management

This section applies to operators who process products containing allergens **and** who also process products that are allergen free. Allergens refer to those substances in Standard 1.2.3 of the Food Standards Code.

Some operators elect to have the same allergen status for all products, in which case the management of separation is less of an issue. However, the operator would still need to ensure that an accurate and up-to date knowledge of all inputs, including new or substitute inputs is maintained and that the labelling complies with the requirements of the Food Standards Code at all times.

NZFSA encourages the use of appropriate allergen management. A possible means to assist in allergen labelling is the VITAL decision making tool. This tool and other useful information are available on the Allergen Bureau website. <http://www.allergenbureau.net/>

Where appropriate, the operator must document procedures to manage allergens throughout the process from reception to load out.

The operator must have documented cleaning procedures to minimise the possibility of cross contamination of allergens to products that are not intended to contain that substance, and must 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. management and clean up of spills;
- c. cleaning of hidden or static areas and dismantling of equipment to remove residues;

- d. evidence that the cleaning regime is effective in removing the allergens (proteins) in question.

The operator must ensure that all relevant personnel have knowledge of —

- a. allergens and the consequences of unintentional consumption by susceptible consumers;
- b. GOP in the management of allergens specific to their premises, types of products processed and their roles and responsibilities.

The operator must document all formulations including ingredients, compound ingredients, substitute ingredients, additives and processing aids, and must have knowledge of —

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

An example of where the good knowledge of ingredients is necessary is dried fruits. These may use sulphites as a preservative in which case the final product requires that sulphite is labelled as an allergen if it is present at 10ppm or greater.

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

Production and/or cleaning schedules must be managed to ensure that cross-contamination of allergens to products that are not intended to contain that substance do not occur.

Products that do not contain allergens should be processed first, followed by products with an increasing allergen status (for example soy, then soy & dairy, then soy, dairy & gluten).

If a product does not contain the same allergen as a previously processed product then a full clean down must occur, including the changing of protective clothing and equipment that may contaminate the product.

The operator must use separation by distance, time or physical barriers to minimise the opportunity for cross contamination of allergens with non-allergenic products. The nature of the separation must be determined based on a thorough investigation of the products, processes, and premises and equipment design and construction.

The operator must ensure that rework that contains allergens is not included in products that would otherwise be free of that substance. Rework must be clearly identified and tracked to finished product.

The operator must have reliable methods of ensuring that the correct label is applied to product.

Cross contamination during storage and processing needs to be considered. Where possible inputs and products containing allergens should be stored separately. Where this is not possible, it should be stored segregated, in sealed packaging or air tight containers etc.

### **3.6 Marinades, Brines, Injection, and Tumbling**

#### **3.6.1 Marinades or Brining Solutions**

Marinades or brines must be kept at 10°C or lower.

Unused marinade or brine that has been prepared and has stored under appropriate conditions, may continue to be used within its shelf life.

If product contains an additive which has a maximum permitted level specified in legislation (e.g. nitrite), the operator must have evidence to validate that the product does not exceed those levels.

Equipment such as injectors and tumblers are not able to deliver a consistent, accurate pick up on every individual piece of meat - there are many variables which can affect this. Therefore a range is often stipulated in QC checks, for example 10% +/- 2% is fairly typical for injected whole birds. This variability needs to be considered when ensuring compliance for additives.

If a company produces a range of nitrite containing products, representative or worst case samples only may be tested rather than every product in the range. Where the operator has not tested all products, they should be able to justify how the tested samples are representative of those not tested.

#### **3.6.2 Injection**

NZFSA is considering developing microbiological criteria for brines and marinades that are reused and/or recirculated during the injection process. It is recommended that operators periodically check the microbiological levels of the brine or marinade during a complete processing run to build up knowledge of the process. In the event that higher than normal

microbial levels are detected, the operator should investigate the cause and depending on the levels detected, take appropriate actions.

At a minimum, the operator must inspect the injection equipment (e.g. needles) at the end of each processing day to ensure no breaks, chips or missing parts. If a problem is identified, the operator must take appropriate action.

Actions should include holding and inspecting all affected product since the last compliant result, until the item is located. A metal detector may be used for this purpose.

The inspection of the needles is sometimes identified as a CCP. Some equipment is able to identify needle damage or breakage automatically, which can reduce the amount of affected product in the event that this occurs.

### 3.6.3 Tumbling

Chilled temperatures must be maintained during tumbling or massaging operations to minimise microbial growth. If the temperature has risen to 10°C or above during processing, this must be reduced as soon as possible.

## 3.7 Assembly; Wraps, Kebabs and Other Value Added Products

An important consideration when making many different product varieties (e.g. types, flavours) is the control of cross contamination of products with a different allergen status. Refer to section 3.5.2 Allergen Management.

Product inclusions such as wooden kebab sticks must be managed to ensure that they do not become a physical hazard to other products.

The additional handling required during mixing and assembly of value added products could lead to higher bacterial counts. This may be minimised by:

- ensuring that the raw poultry and other refrigerated components are at as low a temperature as possible and limiting the time that they are out of the chiller or freezer;
- limiting, as much as possible, the amount of product handling;
- ensuring that all equipment is thoroughly cleaned and sanitised before use;
- ensuring that protective clothing and equipment (e.g. gloves, sleeves, aprons etc.) that may

contact the product is clean and sanitised or changed as often as necessary to minimise contamination;

- processing in chilled rooms.

The finished product must be reduced to its preservation temperature as soon as possible after processing.

If combining raw and ready-to-eat product components (e.g. providing ready-to-eat sauce sachets with raw product), the operator must ensure that the product is presented in a manner that would minimise the likelihood that the consumer could cross contaminate between the two components during preparation.

### **3.8 Coatings (Battering and Breading)**

Batters and egg or milk wash temperatures must be kept at 10°C or less whenever practical.

Re-circulated coating components (e.g. egg or milk wash, batter, pre-dust, crumb, flour etc.) must be discarded at the end of the production run unless re-use has been validated.

A cleaning programme must be in place for all processing equipment. The cleaning frequency must be sufficient to ensure that build-up of material that may harbour unacceptable levels of microorganisms does not occur. (Refer Chapter 3 to be written).

### **3.9 Rework**

Rework must be clearly identified and traceable to the final product.

If the addition of rework changes a final product formulation, this must be reflected in the product labelling.

The operator must consider whether the addition of rework impacts on the shelf life of the product, and where appropriate, adjust the shelf life accordingly.

It is strongly recommended that rework only be incorporated into other products with a compatible formulation (e.g. same allergen status, formulation etc).

### **3.10 Packaging**

#### **3.10.1 Packaging Process**

Exposed heat treated product must not be packaged in, or pass through, raw product areas.

Packing operations must be conducted in a manner that minimises contact of the product with external packaging surfaces.

Exposed poultry packed in retail trays ready for wrapping should not be stacked on top of each other unless cross contamination between the product and the bottom of the next tray is prevented.

The use of packaging that is fully sealed is recommended, to prevent liquids from leaking out. Packaging that is not removed before cooking is less likely to lead to contamination of consumers' kitchens.

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

Packaging equipment must not be a source of contamination.

Crevices and gaps within packaging equipment have been shown to be a source of contamination in the past.

Products with damaged packaging must be handled in 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.

Repacking of product with damaged packaging must occur in a manner that minimises contamination. Any product that has been detrimentally affected as a result of the packaging damage must be dealt with in accordance with the requirements of section 3.16 Non-conforming Product.

#### 3.10.2 Packaging Materials, HC Spec 30 Part 6

The type and composition of the packaging must be appropriate for the intended use.

Operators should discuss with their supplier 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.

Operators must retain evidence (e.g. supplier guarantees) that the composition of the packaging material complies with relevant legislation.

Packaging materials must be stored and handled in a manner that minimises contamination of the packaging or poultry products.

Product contact packaging must be clean, unused, free from contaminating substances and objectionable odours.

The packaging materials must be 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.

It is recommended that cardboard packaging for bulk packs is designed so the sides overlap, providing extra strength to the edges of the box.

Packaging must be dispensed during operations in a manner that protects the product from contamination. Outer packaging materials (e.g. transportation outers and wraps) that product contact packaging is delivered or stored in, must not be taken into food processing areas.

Some packaging materials such as cardboard cartons are often re-used for other purposes e.g. for ready-to eat foods (sandwiches, cakes, etc). Operators who become aware that this is occurring with their packaging should advise against it.

### 3.10.3 Transport / Bulk-pack Packaging

Re-used plastic dioxies, bins or other types of reusable packaging which have been in direct contact with poultry must be cleaned, sanitised, dried and cooled to at least room temperature (25°C) by the operator before use. Old labelling must be removed.

The operator must ensure that the dixie, bin or other type of reusable packaging is not damaged (e.g. no sharp edges that may rip packaging) and remains suitable for re-use.

### 3.11 Labelling, HC Spec Part 7

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

The label and product must match.

Any claims on product labels must be accurate and evidence must be available to support the claims.

Labels on retail packs of raw poultry products must include instructions on how to cook the product safely.

Products must be labelled in a manner that enables traceability to be maintained.

### **3.12 Metal Detection**

Metal detectors must be calibrated at appropriate frequencies using test metals that are similar to those found in the premises, and calibration records must be kept.

Metal detectors should be used in accordance with manufacturer's instructions.

Operators must have a procedure in place, should a metal fragment contamination occur. Procedures must include holding and checking affected product until the operator is sure the item is not in the product.

### **3.13 Refrigeration and Storage, HC Spec 6**

The refrigeration equipment and/or facilities must be used within their design capabilities and capacity.

Products must be transferred without unnecessary delay to appropriate chiller, freezer or cold storage to ensure that required product temperatures are achieved and maintained.

The type of packaging, filling of packages, method of stacking product and loading of the chiller, freezer or cold store, must ensure that the temperature of product is reduced without unnecessary delay.

Products must be transferred or conveyed in a manner that minimises any contamination or damage to products.

Equipment for the control and monitoring of temperatures and other parameters (e.g. airflow) must be operating at all times while refrigeration facilities are in use.

Products that may taint or contaminate other products must be kept separate or be prevented from contaminating other products by other means.

Where product is, or could be exposed, pallets and other storage equipment must be made of impervious materials.

### 3.13.1 Secondary Chilling

The operator should continue to cool the product to ensure that it reaches 7°C or lower without unnecessary delay.

### 3.13.2 Freezing and Cold Storage, HC Spec 76

Product that is to be frozen must be reduced to a temperature of -12°C or colder in a freezer prior to transfer to cold storage unless the operator responsible for the freezing process has documented an alternative temperature and subsequent freezing parameters in the programme.

As a minimum, where the product temperature has not been reduced to -12°C or colder in a freezer prior to transfer to cold storage, the product temperature at the thermal centre of a carton must be colder than the latent heat phase of raw meat, i.e. below -2°C prior to removal from the freezer.

Where the product temperature is not reduced to -12°C or colder in a freezer prior to transfer to cold storage, the alternative regime should be developed in accordance with the principles of temperature equilibration.

Temperature equilibration is theoretical and assumes uniform freezing temperatures. The equilibrated temperature is the arithmetic mean of the temperature of product at the thermal centre and product at the surface of a carton. If the thermal centre is -4°C and the surface -26°C on leaving the freezer, the equilibrated temperature will be close to the mean of: -4°C and -26°C, i.e. -15°C.

When applying temperature equilibration for temperature reduction:

- the temperature at the thermal centre of the carton must be colder than the latent heat phase of raw meat, i.e. below -2°C prior to removal from the freezer; and

- temperature measurements must be made shortly after product is removed from the freezer. Any product that is out of the freezer for greater than 1 hour should not be eligible for entry into cold store on the basis of equilibration.

### 3.13.3 Thawing

Poultry meat must be thawed at:

- a. a maximum air temperature of 10°C for up to 72 hours; or
- b. a maximum air temperature of 7°C for up to 96 hours; or
- c. a maximum air temperature of 15°C, where no part of the product exceeds 10°C. The product temperature must be constantly monitored and the entire thawing process under an automatic control system. The temperature of product at the top leading corner of the carton, i.e. the corner that first intercepts the air flow, at the warmest location in the chiller must be used as the reference to monitor and control the temperature.

If poultry meat is thawed in a water tank, a continuous flow of potable water sufficient to keep the water clean must be provided, and the temperature of the water after equilibration must not exceed 10°C.

If poultry meat is thawed by potable water sprays, the temperature of the water must not exceed 10°C.

Where only partial water thawing of the meat surface is required (e.g. to assist in the removal of entrapped plastic), the requirements for thawing in water apply. Adequate controls to ensure that the maximum meat surface and water temperature are not exceeded must be documented and where necessary, validated.

Thawed meat which is not processed directly after thawing must be reduced to less than 4°C and the maximum holding time prior to use must be validated.

All product must be identified with a lot number and the lot must be tracked throughout the thawing process. The lot number must be maintained with the temperature records.

### 3.13.4 Tempering

The principles of thawing product apply also to tempering, with the restriction that the end point temperature remains colder than the freezing point of the product.

## 3.14 Load Out

Refrigerated products must be dispatched and loaded into refrigerated vehicles without unnecessary delay after removal from the cold store to ensure that required product temperatures are maintained.

Products must be adequately protected from the elements and environmental contaminants prior to and during loading.

All documentation accompanying outgoing products must be complete and accurate, and provide the necessary information for the effective identification and traceability of the products.

### **3.15 Transportation, HC Spec Part 15**

Transportation units must be:

- a. operated so that the required product temperature is maintained throughout transportation; and
- b. loaded within the designed refrigeration capacity.

If product is transported from the primary processor prior to reaching 7°C the operator must comply with the requirements of clause 76 of the HC Spec.

The transport of product above 7°C must be validated unless the times and temperatures described in schedule 4 of the HC Spec are met.

Validation of product transferred warmer than 7°C should be undertaken using the worst case scenario for transportation. This includes the:

- highest initial temperature that product will be transported at;
- longest transport time;
- warmest locations within the transportation unit;
- capability and capacity of the vehicles to be used.

The roles and responsibilities as product is transferred between different operators, for ensuring that the cooling, handling and transport times and temperatures are maintained must be documented

### **3.16 Non-conforming Product**

The operator must ensure that non-conforming product is appropriately managed. This must include determining whether any other product has been detrimentally affected as a result of the non-conformance and taking appropriate actions to manage this.

Appropriate actions must include one or more of the following:

- a. restricted release where the operator is able to manage the problem appropriately;
- b. regrading to an alternative use where the product conforms to the alternative requirements, e.g. for pet food or rendering;
- c. reworking to ensure that the product conforms to the requirements;
- d. rejection (destruction); and
- e. recall.

In a recall, the removal of the product from consumers should be seen as the initial corrective action. Once this is achieved, the prevention of a recurrence can be addressed. Further information regarding recalls is available from the NZFSA website, <http://www.nzfsa.govt.nz/recalls/>

### **3.17 Traceability**

The operator must have procedures to track inputs through processing so that products can be quickly and effectively identified and isolated in the event that a problem occurs.

It is recommended that the operator maintain a “One step forward, one step backward” traceability system. This will allow the identification of where inputs and other materials have been received from and where the products have initially been dispatched.

The operator should 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.

The operator must retain records.

As a minimum, records should include information such as the lot number, manufacturing date and/or use by date, and supplier / distributor details.

### **3.18 Shelf-life**

The operator must validate the shelf-life of products and keep records detailing how the shelf-life was determined, including test results.

The operator must comply with the validated shelf-life.

Guidance on shelf-life testing can be found in the NZFSA booklet "[A Guide to Calculating the Shelf-life of Foods](#)". The Food Standards Code also has requirements in relation to shelf life which must be complied with.

Shelf-life validation trials should be conducted at temperatures that can be reasonably achieved in the distribution and retail system, and in the home.

Operators should verify the shelf-life of each product on an ongoing basis e.g. by implementing a rolling testing scheme that includes all products types.