



Code of Practice – Processing of Poultry
Part 2: Good Manufacturing Practice
Chapter 3: Hygiene and Sanitation

Prelims

Amendment 0

October 2009

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Disclaimer

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

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1 Introduction

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1.1 Purpose and Scope

This chapter of the Code of Practice (COP) covers hygiene, cleaning and sanitation activities during primary, secondary and further processing of poultry products. The specific cleaning and sanitation requirements for processing high risk or ready-to-eat (RTE) foods will be addressed by the outputs from the listeria strategy. These will be linked to this document (with any appropriate enhancements or explanations) once they are complete.

The COP has been written for operators who are processing poultry products for human consumption (and animal consumption, where produced on the same premises).

1.2 Status of Code of Practice

Poultry processors who operate under an approved Food Safety Programme (FSP) or are registered under the Food Hygiene Regulations 1974 should use the COP as guidance material to assist them to establish good operating practices. NZFSA would expect these operators to use the COP as a basis for the poultry part of new FSP's, or when revising existing FSP's.

The status of the COP as it applies to operators who have a registered Risk Management Programme (RMP) under the Animal Products Act 1999, is explained below.

This COP contains:

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

Poultry processors must comply with the regulatory requirements.

Poultry processors must comply with the procedures for compliance unless their alternative practices have been:

- documented within the operator's Risk Management Programme, and

- approved through registration of that programme by the NZFSA.

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

1.3 Definitions

Amenities include toilets, wash rooms, locker rooms, change rooms, lunch/smoko rooms, and cafeterias.

Approved maintenance compound means any maintenance compound that is approved by the Chief Executive or listed in specifications under the Animal Products Act 1999. Processors operating under the Food Act should read this as "maintenance compound" only.

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

Clean, when used as an adjective, refers to an item which is free from visible contamination.

Cleaning is the removal of visible contaminants using physical or chemical aids.

Contact surface is any post slaughter surface that may come into direct contact with animal material or product intended as food for human consumption.

Contaminant means any substance or thing which is undesirable, potentially harmful, or unexpected in a particular product or process and may render a product not fit for its intended purpose. Contaminated has a corresponding meaning.

Dry food is a food which has a water activity (a_w) less than the minimum growth water activity of the micro-organisms of significance for the particular food.

External environment includes, but is not restricted to, the grounds, roadways, engine rooms, water treatment plant, waste treatment facilities, ponds, administration facilities, disused parts of the premises and areas under construction.

Facilities include amenities, storage areas (including ice bunkers), and processing areas.

Hazard means a biological, chemical or physical agent that-

- a. is in or has the potential to be in animal material or animal product; and
- b. leads or could lead to an adverse health effect on humans or animals.

Hygiene is a state of cleanliness as measured by levels of contamination;

- hygiene, in relation to processing operations, includes any condition of the production environment, including the condition of equipment that can affect the sanitary status of food during processing.
- hygiene, in relation to personnel, involves the control of contamination of food by personnel and includes food-borne diseases, clothing and equipment, and the sanitary practices adopted by personnel when in contact with food.

Hygienic envelope is a defined area where exposed product is processed or handled, which may include one or more processing operations that have the same hygiene requirements.

Impervious gloves includes solid or coated-woven reusable gloves and examination/surgical-type disposable gloves that meet the composition and conditions of use requirements for indirect food additives (polymers) specified in the current US Code of Federal Regulations, Title 21, Part 177 (21 CFR 177).

http://www.access.gpo.gov/nara/cfr/waisidx_01/21cfr177_01.html

Personal equipment includes aprons, protective sleeves, gloves, knives, steels and scabbards.

Personnel include employees, cleaners, other workers (such as maintenance contractors) and visitors.

Pests include rodents, birds (other than poultry), insects, cats, dogs (excluding those used for security) or any other creatures likely to transfer contaminants to food.

Potable water means water that meets the [Human Consumption Specifications](#) for 'potable water'.

Processing area is an area where live poultry is held before slaughter, poultry is slaughtered or dressed, or unprotected product is processed, packed or temporarily held, including wet processing areas, dry processing areas, thermal processing areas and storage areas or rooms.

Processing period is the longest period of continuous operation before a complete clean down is required to achieve the outcomes of the Verification Programme (See section 3.13 – Verification Programme). This is normally 24 hours, but can be longer provided the maintenance of sanitary and hygienic conditions is validated in a manner acceptable to NZFSA and there is no detrimental effect on product safety or suitability.

Protective clothing means special garments intended to preclude the contamination of animal material or animal product, which are used as outer wear by personnel; and includes head coverings and footwear such as boots.

Protective cut-resistant gloves include all chain-mesh gloves, kevlar or spectra/fibreglass fibre-cored seamless knitted gloves.

Rinse means to apply water (with or without the addition of processing aids or approved maintenance compounds) to minimise contamination.

Sanitise means the application of an appropriate processing aid, approved maintenance compound or physical agent (including sterilising water) to minimise microbial contamination.

Sterilise, in relation to equipment, means to clean with water at not less than 82°C at the point of use.

Steriliser means equipment used to sterilise processing equipment.

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.

Support area is any area:

- where ingredients, packaging, chemicals, protective clothing, personal equipment, or processing equipment may be stored, transferred through and/or prepared;
- where processing equipment is cleaned and/or sanitised prior to reuse;
- including laundries and engineering workshops.

Wash means the use of water (with or without approved maintenance compounds) to remove all visible contamination.

Waste material includes process scraps that are not fit for human or animal consumption, non-food material, waste-water, and waste packaging.

2 Regulatory Requirements

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2.1 Introduction

Below is a summary of the legislation under the Animal Products Act 1999 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 animal product 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 Act 1981:

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

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 8 to 34, 39 to 41, 68 to 76A, 112A to 116 and 143 to 147:

<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/human-consumption/index.htm>

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/publications/manualsguides/approved-maint-compounds>

3 Procedures for Compliance

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3.1 General

The operator must ensure that:

- all areas of their site (e.g. within the physical boundaries), including the facilities, support areas and equipment, are maintained in a clean and sanitary condition appropriate to the use of the area, and
- the hygienic practices of personnel minimise the contamination of product.

Cleaning activities must achieve the measurable outcomes set in the Cleaning and Sanitation Programme (see section 3.2 below). **The frequencies of cleaning and sanitation activities given in this chapter are the minimum expected. If necessary, more frequent cleaning and sanitation must be conducted** to ensure the outcomes of the Cleaning and Sanitation Programme are met.

3.2 Cleaning and Sanitation (AP Reg 10 & 11, HC spec 6)

Cleaning activities must be carried out in a way that will minimise contamination of product, ingredients and product contact materials (e.g. packaging), or previously cleaned areas, structures or equipment.

For example, walls should be washed before floors. However when hosing floors, high-pressure hoses can re-contaminate previously cleaned surfaces with waste water. Care is required to avoid re-contamination.

Cleaning from clean areas towards dirty areas can help minimise the spread of contamination.

3.2.1 Documenting the Cleaning and Sanitation Programme

The operator must document a programme for routinely cleaning and where appropriate sanitising the facilities, equipment, support areas and the external environment. The programme must include the following elements:

- **Objectives and scope** - A description of the programme's objectives and scope (i.e. what is covered by the programme. This includes the facilities, equipment, support areas and the external environment (where appropriate) covered by the programme).
- **Authorities and responsibilities** - A list of the authorities and responsibilities of personnel involved in the programme.
- **Procedures** - The actions performed when cleaning and sanitising. For each area, structure or piece of equipment (e.g. contact surface, overhead and clean-in-place system) it must identify:
 - the cleaning method (i.e. what is to be wet cleaned, dry cleaned, or require a combination of methods)
 - the cleaning, and where required sanitising, sequence including any special instructions (e.g. dismantling of equipment)
 - details of any specific competencies necessary for the task
 - the approved maintenance compounds (detergents, sanitisers etc.) and cleaning equipment relevant to that procedure.
- **Cleaning and sanitising frequency** - The frequency at which cleaning and sanitising will occur.
- **Standards** - The measurable outcomes (e.g. microbiological, visual) to be achieved by the cleaning and sanitising procedures. Contact surfaces must meet the hygiene requirements of the Verification Programme. See section 3.13 – Verification Programme.
- **Monitoring** - The routine checks that will be made during cleaning and sanitation to ensure that the programme is being implemented as written (e.g. visual inspections / audits). See section 3.13.1 – Verification Procedures.
- **Verification** - The additional checks that will be made by someone independent of the Cleaning and Sanitising Programme to verify its effectiveness (e.g. pre-operational hygiene checks, audits). See section 3.13.1 – Verification Procedures.
- **Records** - The records to be kept.

Operators may choose to incorporate existing documented information into their Cleaning and Sanitation Programme by reference.

3.2.2 Cleaning Methods

The cleaning method must be appropriate to the product and the operation.

Wet cleaning is expected for raw processing areas.

Dry cleaning is recommended for dry and packaged product processing areas (e.g. ingredient/packaging stores, preparation areas for dry ingredients, outer packaging areas). Dry cleaning in areas with exposed ingredients or product is only appropriate where moisture levels in products are below levels sufficient to support microbial growth.

A mixture of wet and dry cleaning may be suitable in some circumstances (e.g. support areas). 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. If product is not removed from the area, the amount of water used should be limited to that necessary to complete the cleaning procedure.

3.2.2.1 Cleaning of Wet Areas

Products, ingredients and packaging must be removed from the area being cleaned, or protected from moisture.

Areas that are wet cleaned should be allowed to dry as much as possible before recommencing processing.

3.2.2.2 Cleaning of Dry Areas

Dry Cleaning in Dry Processing Areas

Equipment and the internal environment must remain dry during cleaning.

Dry product residues and dust, on equipment and in the surrounding internal environment, must be minimised to a level practicable by routine cleaning.

The acceptable level of dust or product residue in a facility is dependant on the purpose of the room/area. It is important to keep levels low, particularly to prevent cross contamination of allergens from dry ingredients.

Dry cleaning methods include brushing, sweeping, scraping, vacuuming and sometimes blowing with compressed air. Brushing and scraping procedures may include the use of any approved chemical, edible oil or food grade solvent (e.g. 70% ethanol) to facilitate the removal of fatty product residues from equipment surfaces.

Cleaning methods should minimise the creation of dust and air-borne contamination (e.g. by vacuuming instead of sweeping or blowing).

Wet Cleaning in Dry Processing Areas

If wet cleaning is necessary (e.g. for fixed processing equipment of semi moist products), the products, ingredients, packaging and equipment that must remain dry must be:

- removed from the area being cleaned; or
- protected from exposure to water or moisture

All surfaces within rooms (e.g. ceilings, walls and floors), equipment and contact surfaces that are wet cleaned must be dry before processing dry food restarts.

3.2.3 Equipment Used for Cleaning

Cleaning equipment must not be a source of direct or indirect contamination to product, ingredients, or packaging.

Areas with a different hygiene status should have dedicated cleaning equipment – for example, primary processing should have different cleaning equipment to secondary processing. Cleaning equipment should be used in “cleaner” areas before use in “dirtier” areas. Multiple-use cleaning equipment (e.g. re-useable cloths, brushes, squeegees etc.) should be cleaned and sanitised daily or as often as necessary to minimise cross-contamination between cleaning activities. Where possible, single use cleaning equipment is recommended.

Cleaning equipment must only be used for cleaning purposes.

Cleaning equipment must be stored in a hygienic manner when not in use.

Cleaning equipment must be maintained in a good state of repair.

Areas cleaned with steel wool must be thoroughly washed and checked for contamination from metal fibres.

The use of steel wool should be avoided.

Vacuum cleaners or systems must be cleaned according to the Cleaning and Sanitation Programme.

Vacuum cleaners must be moved away from processing areas before dismantling, changing filters or removing dust bags. The principles of dry cleaning apply to the cleaning of vacuum cleaners. See section 3.2.2.2 – Cleaning of dry areas.

The frequency of filter changes must be defined in the Cleaning and Sanitation Programme.

3.2.3.1 Sanitising

Surfaces must be clean before sanitising, unless a combined cleaner-sanitiser is used in accordance with the manufacturer's instructions and NZFSA's conditions of approval. See section 3.9 - Approved Maintenance Compounds.

Operators should not combine cleaning compounds with sanitisers in attempt to reduce cleaning times, without seeking professional advice. Incorrectly combining cleaning compounds and sanitisers may diminish their effectiveness.

3.2.3.2 Sterilising

Sterilising is not necessary to meet the New Zealand Standard. However, it may be required for certain overseas markets, and has been included here for completeness.

Surfaces or equipment intended to be sterilised must be clean prior to sterilising.

The operator must regularly monitor steriliser water temperatures when in use.

Temperatures should be checked in continuous flow systems if sterilising water stops flowing for more than 15 minutes.

If the sterilising water temperature is less than 82°C, then:

- a. production must cease immediately; or
- b. an approved sanitising maintenance compound can be used in place of sterilising water provided it can achieve an equivalent microbial outcome; or
- c. production may continue for up to 30 minutes from when the sterilising water temperature is first noted to be below 82°C, provided
 1. the discrepancy at the point of use is the first to occur during the processing period; and
 2. the premises does not have a history of non-compliance for sterilising water temperature control, and
 3. continued processing is unlikely to result in an adverse food safety outcome.

Surfaces and equipment should be exposed to sterilising water for sufficient time to reduce microbial contamination to below the expected mean \log_{10} count of organism(s) found on product.

Sterilisers must be emptied and cleaned at least once every processing period.

Sterilisers must only be used for the sterilisation of equipment used during processing.

Equipment (such as knives, steels etc) must not be stored in steriliser drains.

Sterilisers must be kept in such a condition that sterilisation is effective. The presence of contaminants (e.g. fat) in the steriliser must be minimised to ensure sterilisation effectiveness is not compromised.

Waste water must not contaminate sterilising water.

3.3 Cleaning and Sanitising During Processing

Microbiological contamination on contact surfaces can build-up during the processing period. Operators should determine an appropriate cleaning frequency based on their knowledge of the process and product. Raw poultry processing areas operating at ambient temperatures are likely to require more frequent cleaning than areas operating at 12°C. See section 3.13.1.3 – Testing Programmes.

Where appropriate, operators must ensure personnel maintain a clean work area by completing the following during breaks or once every 3 hours, whichever is earliest:

- removing process scraps, waste from floors, and emptying waste / rubbish bins where practical
- cleaning and sanitising/sterilising knives, utensils, pouches and chopping boards
- cleaning and sanitising product contact clothing before re-use
- gloves must be cleaned (if reusable) or replaced. Protective cut-resistant gloves must be cleaned and sanitised unless they are covered with an impervious glove. See sections 3.7.3.5 – Gloves, and 3.7.3.6 – Cleaning and sanitising gloves
- ensuring footbaths contain an effective concentration of sanitiser.

All reasonable attempts should be made to remove process scraps. It is accepted that accessing some parts of equipment is difficult and small amounts of process scraps may remain after cleaning during breaks.

Clean-in-place systems must not be a source, or increase the risk, of cross contamination.

3.3.1 Changing to Products that Require a Higher Hygienic Status

When the same area or equipment is used to process products that require a higher hygienic status than the previously processed product, the operator must ensure personnel clean and sanitise the contact surfaces, equipment and areas to be used for processing. This includes dismantling moving parts of equipment that come into contact with product (e.g. slicers etc).

Cleaning and sanitising is intended to reduce microbial loads and to prevent cross contamination between different product types that require a different hygienic status, e.g.:

- from offal to other products (where not included in the final product)
- from raw to cooked/ready-to-eat (RTE) products
- between products of different allergenic status. See chapter 9, Section 3.5.2 - Allergen management.

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

A pre-operative hygiene check of the area and equipment to be used must be completed before the product requiring the higher hygienic status is processed.

Also see sections 3.7.2.1 - Hygienic routines, and 3.13.1.1 – Visual inspections.

3.3.2 Temporarily Idle Equipment

Processing equipment or contact surfaces that have been used and then remain idle for longer than 4 hours, must be cleaned and sanitised prior to reuse.

More frequent cleaning may be required if the equipment is in a non-refrigerated area.

3.3.3 Portable Equipment

Portable equipment must be checked to ensure it is in a clean and sanitary condition before entering a processing area.

3.4 Cleaning of Facilities

All wet processing areas must be cleaned and sanitised at the end of each processing period.

All other facilities must be cleaned, and where appropriate sanitised, at the end of each processing period or at a frequency specified in the Cleaning and Sanitation Programme.

Floors must be cleaned and sanitised at the end of each processing period. Drain covers / sieves must be emptied and cleaned at the end of each processing period.

Walls must be cleaned and sanitised, to the ceiling, weekly or at a frequency defined in the Cleaning and Sanitation Programme. Walls must be visibly clean at pre-operational hygiene checks.

Areas should be cleaned top to bottom (ceilings before walls, walls before floors) to prevent cross contamination during cleaning.

3.4.1 Overhead Structures (including ceilings)

Overhead structures in processing areas must not be a source of contamination.

All overhead structures and ceilings must be inspected, cleaned and sanitised at a frequency defined in the Cleaning and Sanitation Programme, and when not visibly clean.

If a pre-operational hygiene check shows a problem, the source of the contamination must be fixed (immediately if there is a food safety risk), or the frequency of cleaning increased sufficiently to manage the problem.

3.4.1.1 Condensation

Condensation must be managed to prevent it being a source of contamination. This is through removal of condensation and keeping surfaces that are subject to condensation clean.

Condensation that forms pre-production, either as a result of spray from final rinsing of equipment and walls or the temperature differences inherent when cooling the room after cleaning, should be removed before processing commences in the room.

Condensation that forms during processing should be removed by the use of an absorbent medium to minimise the risk of dripping onto product.

Where condensation sources can be minimised or eliminated through better facility and / or equipment design, modifications must be made to achieve this unless effective management of condensation has been verified.

3.4.2 Fans and Evaporators

Fans and evaporators must be cleaned on a regular basis and after substantial maintenance work. Those in processing areas must be cleaned once every six months or whenever necessary.

The frequency of cleaning should be determined by visual, and where appropriate, microbial monitoring. Cleaning procedures may include, or necessitate, fumigation.

Air circulating systems, filters and air socks must be cleaned in accordance with manufacturer's instructions where available, or in accordance with the Cleaning and Sanitation Programme.

3.4.3 Footbaths

An effective concentration of sanitiser must be maintained in footbaths during processing.

Footbaths should be emptied and refilled with fresh sanitiser at regular intervals during the processing period.

Footbaths must be cleaned and sanitised at the end of each processing period.

3.5 Cleaning of Processing Equipment

Processing equipment, including conveying equipment and trolleys, must be cleaned and sanitised at the end of each processing period or more frequently depending on use.

Product contact equipment must be cleaned inside and out, including areas where contamination may accumulate, but are difficult to access (e.g. areas caged for safety reasons during operation, blade covers etc). Personnel must access these areas for cleaning purposes at the end of the processing period.

Alternative cleaning and sanitation frequencies can be used for non-contact surfaces on processing equipment, provided they are stated in the Cleaning and Sanitation Programme and compliance with hygiene requirements can be demonstrated by ongoing verification.

Product contact surfaces must meet the hygiene requirements of the operator's Verification Programme after cleaning. See section 3.13 - Verification programmes.

Also see sections 3.3.2 - Temporarily Idle Equipment and 3.3.3 - Portable Equipment.

3.5.1 Conveyors

Product contact conveyors, including the supporting structure and underneath the belt, must be cleaned and sanitised at the end of each processing period.

All other conveyors must be cleaned at a frequency specified in the Cleaning and Sanitation Programme.

3.5.2 Chillers

Chillers must be cleaned and sanitised at a frequency specified in the Cleaning and Sanitation Programme.

Chillers containing unprotected product should be cleaned and sanitised weekly.
Chillers containing protected product should be cleaned and sanitised at least monthly.

3.5.3 Equipment Used in Live Bird Handling / Reception Areas

3.5.3.1 Live Bird Crates / Modules

Crates and modules must be washed and dried, or washed and sanitised, before reuse.

All reasonable attempts should be made to remove visible contamination as this has been shown to minimise the presence of *Campylobacter*. Some crates and modules may need washing more than once to achieve this.
Washing activities should be conducted away from processing areas (including hanging and slaughtering areas) where possible. It is common for washing to occur in lairage areas and this is acceptable. Aerosols from washing activities (such as water blasting) may cause cross contamination from crates / modules into processing areas. Operators could separate washing activities from processing activities by using physical barriers or washing once processing is complete.

The operator must ensure automated washing systems are operating correctly, and achieving the required state of cleanliness.

3.5.3.2 Trucks and Forklifts for Handling Live Poultry

Trucks and forklifts must be cleaned and sanitised at a frequency specified in the Cleaning and Sanitation Programme.

Live poultry must not be transported in any vehicle at the same time as other livestock.

Truck trays and decks should be visibly clean prior to use/re-use to minimise cross contamination. Forklift wheels and forks should be visibly clean at the beginning of each processing period. See the [Broiler Growing Bio-security Manual](#) for more details regarding cleaning vehicles.

3.5.3.3 Hanging Bays and Lairage Areas

Hanging bays and lairage areas must be cleaned at the end of each processing period.

3.5.4 Equipment Used in Primary Processing Areas

All primary processing equipment and areas after the hanging bay must be cleaned and sanitised at the end of each processing period.

3.5.4.1 Shackles

Shackles on kill lines, evisceration lines and weigh lines must be cleaned and sanitised at the end of each processing period.

During processing, shackles should be rinsed before re-use. This may be achieved with on-line continuous spray rinses. These rinses should be checked to ensure they are working correctly.

3.5.4.2 Scald Tanks

Operators must comply with the requirements of Chapter 5, Section 3.7 – Scalding.

Scald tanks (irrespective of their mode of operation) must be emptied before being cleaned and sanitised.

Operators who use batch scalders (i.e. when a number of birds are put into the scald for a certain period and then all birds removed for plucking) must remove organic waste material between processing batches.

It is strongly recommended that operators who batch scald, completely change scald tank water between batches.

3.5.4.3 Pluckers

Operators must comply with the requirements of Chapter 5, Section 3.8.1 – Pluckers.

Rubber finger mounts must be cleaned when rubber fingers are replaced.

All reasonable attempts should be made to remove visible contamination such as feathers from the pluckers. It is accepted that due to difficulties in removing all feathers, some may remain after cleaning.

3.5.4.4 Eviscerators

Operators must comply with the requirements of Chapter 5, Section 3.14 – Evisceration.

Evisceration equipment must be cleaned to remove any fat deposits, protein, blood or other organic matter.

3.5.4.5 Immersion Chillers

Operators must comply with the requirements of Chapter 5, Section 3.21.1 – Immersion chilling.

Immersion chillers must be drained before being cleaned and sanitised.

3.5.5 Equipment Used in Secondary Processing Areas

All secondary processing equipment must be cleaned and sanitised at the end of each processing period.

This includes equipment such as trolleys, waste containers, plastic pallets, pallet jacks etc.

Cut-up machines, mincers, comminution equipment, tumblers, injectors and coaters must be dismantled, cleaned and sanitised at the end of each processing period.

3.5.5.1 Product Contact Containers

Containers must be used in a manner that minimises contamination of product or contact surfaces.

Containers used for conveying or storing product (such as dixies, tubs, trays and crates), must be cleaned and sanitised at a frequency specified in the Cleaning and Sanitation Programme. The cleaning and sanitation frequency must take into account the areas in which the containers are used and whether or not product comes into direct contact with them.

Containers returned to dry processing areas must be dry.

Product containers must not be placed directly on the floor or other contaminated surfaces, unless they are designed and designated for this purpose (e.g. floor dioxies).

Containers that have been in contact with the floor or other contaminated surface should not be stacked, tipped or handled in a manner that could contaminate products.

See section 3.8.1- Waste containers, for waste container requirements.

3.6 Hygiene Associated with Repairs and Maintenance (AP Reg 10 & 11)

Normal in-process adjustments to machinery or equipment (e.g. replacing injector needles etc) are not considered a maintenance activity. However when making in-process adjustments, care is still needed to ensure that product is protected from contamination and appropriate cleaning and sanitation occurs afterwards if necessary.

Operators must ensure chemicals used for repairs and maintenance comply with section 3.9 - Approved maintenance compounds.

Repairs and maintenance must be conducted in a manner that prevents contamination of product, ingredients and packaging, and minimises contamination of equipment. Product, ingredients and packaging must be protected from contamination or removed from the affected area while repairs or maintenance is made.

The person in charge of processing should be notified prior to any repairs and maintenance during processing.

When repairs that cannot be carried out in a sanitary manner are required during processing (such as during equipment breakdown), then:

- the defective equipment must be removed from the processing area to be repaired whilst processing continues; or
- products, ingredients and packaging that could potentially be contaminated while repairs are made must be protected from contamination or removed from the affected area; or
- processing must cease in the area affected by the breakdown. In extenuating circumstances, production may continue whilst maintenance is being carried out, but the affected product must be separated, retained and assessed for safety and suitability, and managed appropriately.

Extenuating circumstances would be where animal welfare requirements require processing to continue, or where food safety would be more at risk if processing did not continue.

Maintenance personnel must comply with the operator's requirements for hygienic practices appropriate to the area they are operating in.

Tools should be cleaned (and sanitised depending on the hygienic status of the area) before entering processing areas. This is especially important when working on contact surfaces. Where practical it is recommended operators have maintenance tools that are dedicated for use in specific areas of their operation to avoid cross contamination.

Tools used for repairs and maintenance must not come in contact with, or compromise the hygienic status of, any product, ingredient or packaging material unless they have been cleaned and sanitised and meet the hygienic requirements of a contact surface.

Tools must be removed and / or returned to storage once maintenance or repair work is completed, unless required for frequent use. If required for frequent use, tools must have a designated storage place and be maintained in a hygienic manner.

After any repairs or maintenance, affected contact surfaces must be cleaned and sanitised. A pre-operative hygiene check must occur before processing recommences. See section 3.13.1.1 - Visual Inspections.

3.7 Hygiene

3.7.1 Health of Personnel (AP Reg 13, HC spec 23)

The operator must document and implement a health procedure. The procedure must include actions taken when personnel have notified them that they are suffering from a communicable disease. It must include any clearances required (e.g. medical certificate) before that person can return to product handling duties.

The operator must ensure personnel and visitors are aware of and comply with the health procedures.

This could be achieved through pre-employment agreements, ongoing staff education, staff declarations on resumption of work after extended periods of leave or premises shut-down, and declarations from contractors and visitors entering the premises.

Personnel must inform the operator if they have been diagnosed with, or suspect they are suffering from, a communicable disease or infectious condition listed in HC specification 23, and they must be managed in accordance with the requirements of that clause.

Personnel suffering from vomiting, diarrhoea, persistent sneezing or coughing must be prevented from direct contact with product.

Dressings applied to exposed parts of the body must be waterproof, adequately secured to avoid dislodgement, and kept clean.

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

3.7.1.1 Records Specific to the Health of Personnel

The operator must maintain the following health records for personnel:

- illness records, including sighting of medical certificates prior to personnel returning to work (where required)
- declarations of understanding of the operator's health procedures by personnel
- declarations of health by personnel.

3.7.2 Hygienic Practices (AP Reg 10 & 11)

The operator must advise personnel of the hygienic practice requirements. They must ensure no one works or enters any processing area after the pre-operational hygiene check for that area is completed, unless they comply with the hygiene routine. If a person enters the processing area without complying, appropriate corrective actions must be taken (e.g. re-training, warnings, re-cleaning etc.).

Personnel must wear clean protective clothing and personal equipment before entering a processing area to commence work.

Personnel must not eat, smoke, spit or drink in any processing area or support area. However, drinking from drinking fountains is permitted.

3.7.2.1 Hygiene Routines

The operator must implement hygiene routines for personnel when changing between activities of lower to higher hygienic status (e.g. moving from primary to secondary processing activities, non-ready-to-eat areas into ready-to-eat areas). The hygiene routine must include as a minimum:

- a complete change of all product contact protective clothing (except overalls which only need to be changed if entering ready-to-eat areas) and personal equipment
- washing and drying, or sanitising (where required) of the hands and arms
- washing or changing footwear and personal equipment.

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

Personnel should change their protective clothing if moving from dirty processing areas to relatively cleaner areas.

3.7.2.2 Hands and Arms

Personnel must wash and dry hands and arms (where arms are not covered):

- when entering or leaving a product processing area
- before handling poultry, poultry product, ingredients or exposed packaging
- after any toilet activity
- after each episode of sneezing, coughing or touching the face, mouth or nose. Where possible, hands must also be sanitised. If gloves are worn, they must be changed or washed
- whenever they become contaminated (e.g. after handling/contacting waste or contaminated items/surfaces).

The 20+20 hand washing rule (20 seconds wash + 20 seconds dry = clean hands) should be used.

Sanitisers may also be used as part of this process.

Single use towels are preferable to air driers for drying hands.

Rubbish bins must be provided for dirty towels, and be emptied as soon as they become full.

Personnel handling unprotected product must keep fingernails clean and not wear fingernail polish or any other fingernail adornment. Fingernails must not be excessively long.

3.7.2.3 Body Hair

Body hair must be managed to minimise contamination of product. Clean hats (paper, cloth, plastic), hairnets, beardnets, food industry balaclavas or other items must be worn to contain hair on the head and face.

Operators must determine their own policy on acceptable facial hair lengths. As a guide, facial hair

longer than stubble would require containment.

3.7.2.4 Jewellery

Personnel must not wear exposed jewellery that could come into direct or indirect contact with unprotected product.

Jewellery includes earrings, rings, bangles, bracelets, brooches, necklaces, studs, exposed body piercings and wristwatches. Plain wedding rings may be worn provided they will not dislodge into product, are cleaned sufficiently in the same manner as hands, and are covered by a glove. However, it is becoming more common for even these rings to be removed.

3.7.3 Protective Clothing and Personal Equipment

The operator must have procedures to ensure protective clothing and personal equipment does not become a source of contamination. This includes specific procedures for activities conducted outside processing areas, and staff conducting cleaning activities.

Personnel must maintain their protective clothing and personal equipment in a hygienic condition.

Protective clothing and personal equipment stored during processing should be kept in an area that ensures they do not become contaminated. Protective clothing and personal equipment that comes in direct contact with unprotected product should be stored in a dedicated storage area when not in use.

The colour of protective clothing should make visible contamination (relative to the type of work) clearly distinguishable.

Protective clothing and personal equipment must be cleaned or disposed of at the end of each processing period.

Disposable protective clothing and personal equipment must be discarded after use, when damaged (e.g. torn), or if it cannot be effectively cleaned when required during use.

Damaged protective clothing or personal equipment must be appropriately repaired, or replaced.

Safety or personal equipment, e.g. mesh gloves, knife sheaths, must be made of readily cleanable materials, or covered where appropriate.

3.7.3.1 Cleaning of Protective Clothing and Personal Equipment

Protective clothing and personal equipment must be cleaned or changed whenever it becomes a source of contamination during processing. It must be replaced if it cannot be adequately cleaned.

Unwashed laundry bags that have been used for dirty protective clothing, must not be used for clean protective clothing.

3.7.3.2 Use of Protective Clothing and Personal Equipment

Protective clothing must cover the potential food contact zone of personnel. This includes as appropriate to the processing area, the head, shoes, any street clothing and personal equipment they may wear (e.g. the tip of the steel).

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.

Protective clothing and personal equipment directly in contact with product must not be taken into any toilet area. If it is worn outside, it must be replaced before re-entry to the processing area.

Protective clothing should not be worn outside of the external environment perimeter.

Street clothes must not be worn over protective clothing.

3.7.3.3 Waterproof Coverings

People handling unprotected product must wear waterproof sleeves over fabric sleeves, unless fabric sleeves are rolled up to above the elbow and hands and arms are washed.

People handling unprotected product in wet processing areas must wear a clean waterproof covering that covers the potential food contact zone.

3.7.3.4 Footwear

People must wear easily cleanable footwear. It must be cleaned and sanitised (e.g. with the use of a footbath, brushes or scrubbers etc.) before entering any processing area.

3.7.3.5 Gloves

Personnel must wash their hands before gloves are put on, and after gloves are removed.

The use of gloves must present no greater risk of microbial contamination to product than clean hands.

Gloves must be clean before use. Whenever gloves become visibly contaminated they must be cleaned or replaced. Protective cut-resistant gloves must also be sanitised unless they are covered by an impervious glove. If covered by an impervious glove, then only the impervious glove must be cleaned or changed.

Impervious gloves must be discarded whenever the impervious surface is punctured, or becomes damaged such that they cannot be adequately cleaned.

If gloves are inspected and remain impervious, they may be reused during the processing period, provided they are effectively cleaned while on the hand.

3.7.3.6 Cleaning and Sanitising Gloves

Product scraps must be removed from gloves before gloves are placed in a sanitiser.

Gloves designed for handling frozen or chilled product (i.e. woollen gloves) must be cleaned at a frequency specified in the Cleaning and Sanitation Programme.

Protective gloves (including the web-strapping at the top of chain-mesh gloves) and reusable impervious gloves must be cleaned and subjected to a full sanitation programme at least once each processing period to ensure gloves meet the hygiene requirements of the Verification Programme. See section 3.13 - Verification Programme.

The full sanitation programme should achieve a microbiological outcome at least equivalent to that of clean hands (for APC this is 1×10^4 cfu/cm²).

The following sanitation programmes will achieve the microbiological outcome above for gloves.

All protective cut-resistant gloves: Soak in quaternary ammonium sanitiser overnight using dilutions recommended by the manufacturer. Rinse with warm water prior to use.

Chain-mesh gloves: Hose with hot water to remove visible soil, soak in alkaline cleaner (20 - 25%) for no less than 15 minutes, soak in 90°C water for no less than 15 minutes, rinse with hot water, and hang to dry in a glove cabinet.

Knitted gloves: Hose with hot water to remove visible soil, soak in quaternary ammonium sanitizer (0.2%) for no less than 30 minutes, rinse with hot water, and hang to dry in a glove cabinet.

3.8 Waste Management (AP Reg 11, HC Specs 2004 clause 19 & 20)

Waste management applies to all areas within the physical boundaries of the site, including facilities, support areas and the external environment.

The operator must effectively manage waste material to minimise pest activity, offensive odours and contamination of product, processing areas, equipment or personnel.

Waste material must be conveyed to a waste area in a timely manner. It must not accumulate in processing or support areas, and must be removed from dry processing areas at least daily.

Waste materials must be kept in covered pest-proof containers (if receptacles are kept outside or are not in continuous use inside), and regularly collected and disposed of.

3.8.1 Waste Containers and Equipment

Waste containers and associated equipment such as trolleys must not be a source of contamination to product, ingredients, contact surfaces, or processing or support areas.

Waste containers must be clearly identifiable and suitable for use.

Waste containers in processing or support areas must be emptied and cleaned as a minimum at the end of each processing period.

The underneath of waste containers must be sanitised before re-entering a processing area or area of higher hygienic status if they have been taken outside or moved through an area of lower hygienic status.

Waste containers and associated equipment returned to dry processing areas must be dry.

Waste containers present in processing areas during processing must only be those required by necessity.

3.9 Approved Maintenance Compounds (AP Reg 11, HC Specs 2004 clause 21)

Operators must only use approved non-dairy maintenance compounds in facilities and on equipment. Any new maintenance compounds used during processing operations must be approved for that purpose before use.

NZFA 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. For this information the operator should approach their supplier.

The operator must maintain an inventory of approved maintenance compounds on the premises.

The management and handling of approved maintenance compounds (e.g. cleaners, sanitisers and pesticides) must not adversely affect their suitability for use.

3.9.1 Storage of Maintenance Compounds

Maintenance compounds must be stored appropriately. Storage facilities must be kept clean and dry.

Bulk containers of maintenance compounds must be stored in dedicated secure storage facilities.

Maintenance compounds that are “in-use” or for “immediate use” may be stored in processing and support areas, but only in quantities necessary for immediate use.

Maintenance compound containers must be clearly labelled (identifying the maintenance compound). They must remain closed when not in use.

When maintenance compounds are transferred from their original container (e.g. from a bulk supply) to another container, the new container must be labelled with the name of the compound as listed in the Approved Maintenance Compound (Non-Dairy) Manual or in a current NZFSA letter of approval.

3.9.2 Use of Maintenance Compounds

Maintenance compounds must be used in accordance with manufacturer’s directions and the conditions approved by NZFSA (refer to Approved Maintenance Compound (Non-Dairy) Manual). This includes compounds used where there is potential for incidental product contact (e.g. sanitiser, lubricants, and surface treatment compounds).

Personnel must be trained and suitably skilled in the correct access, handling and use of maintenance compounds, or have access to documented directions. Documented directions must be available, either:

- at the point where the compound is used (i.e. on the container label); or
- on information data sheets available to personnel using the compound.

Records showing personnel have been trained in the use of maintenance compounds must be kept.

All containers/implements used for measuring or pouring maintenance compounds, e.g. measuring cylinders, jugs, scoops, funnels, must be used for that purpose only (e.g. labelled 'for chemical use only').

Empty maintenance compound containers must not be re-used in a way that could contaminate product.

The operator must routinely monitor appropriate sanitiser use.

Product contaminated by a maintenance compound, which adversely affects its fitness for intended purpose, must not be used for human or animal consumption.

Packaging contaminated by a maintenance compound, which adversely affects the item's fitness for intended purpose, must not be used on product for human or animal consumption.

Processing areas or equipment contaminated by a maintenance compound must be corrected according to the maintenance compound's properties and its effect on the product's fitness for intended purpose.

3.10 Pest Management

If pest management is conducted by a contractor, the operator must ensure the contractor has documented and verified the pest management programme.

If pest management is carried out "in-house", the operator must document and implement an appropriate pest management programme for the facilities, support areas and the external environment.

The programme must include, but is not restricted to:

- who is responsible for the pest management activities
- how buildings are pest-proofed, (e.g. self closing doors, fly screens, drain traps)
- how pests are killed and prevented from breeding
- how pesticides and pest management equipment (including rodent bait stations, electric insect killers, traps, sticky boards etc) are used in the control of pests
- the methods used to monitor the presence of pests and the effectiveness of pest control

- the corrective actions to be taken when pests are detected, including disposing of any contaminated things, including dead pests.

Pesticides (rodenticides and insecticides) must be used by suitably skilled personnel, and only in accordance with section 3.9 - Approved Maintenance Compounds.

Where rodenticides are used, they must be used in bait stations.

Bait stations must be enclosed and uniquely identified.

The operator must identify the location of pest management equipment (including marked rodent bait stations and electric insect traps) on a site / building plan. Changes to equipment locations must be documented.

Numbering bait stations may make identifying them on a site / building plan easier.

Insecticides that have any residual activity or are dispensed as continuous aerosols or contain perfumes must not be used in processing areas or other areas in a manner that would permit the insecticide to invade processing areas (e.g. Type B insecticides).

Insect traps, which include ultra-violet lamps, pheromone traps and any form of attractant device, must be constructed so they catch and secure insects in a way that makes disposal easy (e.g. a suitable drawer, tray or adhesive mat). Traps must be sited so they do not contaminate product, ingredients, packaging, or contact surfaces with falling insects.

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

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

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

The facilities, support areas and external environment must be kept clean and tidy. The external environment must be checked regularly for evidence of pest activity. It must be kept free of food sources and breeding sites (e.g. long grass, bird's nest, food waste).

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

Dogs, cats and other mammalian pests must be prevented from accessing the premises (i.e. buildings and external areas within the scope of a FSP or the boundaries of a RMP).

Compliance with control measures implemented by the programme must be monitored regularly. Monitoring must include checks for the presence or evidence of pests (e.g. mouse droppings, chewed baits) and regular checks on pest control equipment as relevant.

The frequency of monitoring must be determined relative to the type of equipment used and the amount of pest activity present. Appropriate corrective actions must be implemented where pests or evidence of pest activity is noted.

Where there is evidence of contamination by pests or any pest activity in product, ingredients or packaging, the affected product or ingredients must be declared unfit for human consumption. Affected packaging materials must not be used for packing product, or in situations where it may come into contact with product. Affected contact surfaces must be cleaned and sanitised prior to reuse.

3.11 Potable Water (AP Reg 10, HC specs 2004 clause 8, 9 and 11 to 14 Water)

The operator must ensure that an adequate supply of potable water is available for hygienic operations. This includes water, ice and steam that comes into direct or indirect contact with product. See Chapter 2 – Design and construction (to be written).

3.12 Air Quality (AP Reg 10 & 11, HC Specs 2004 clause 114)

The operator must document and implement control measures to ensure the air quality of processing and support areas is appropriate for processing product.

3.12.1 Air-borne Contamination

Sources of air-borne contaminants that may render product unfit for its intended purpose must be minimised.

Airborne contamination can include:

- dust, sand, smoke or ash from any source not associated with the usual processing or handling of the type of product
- gases, fumes or odours, including internal combustion engines, welding and unfiltered exhausts from pneumatic tools, chemical compounds, ammonia and refrigerants
- air-borne microbes.

Airborne contamination does not include air-borne substances associated with the usual

processing or handling of the type of product (e.g. smoke from a smokehouse).

If air-borne contamination introduces a new hazard to a processing area, then processing must stop unless the hazard can be immediately managed. The area must be cleaned and, where necessary sanitised and a pre-operational hygiene check conducted before processing recommences. See section 3.13.1.1 – Visual Inspections.

If the operator wishes to salvage product involved in, or near, an airborne contamination event (e.g. fire, chemical leaks such as ammonia or refrigerant fluids, etc.), then a suitably skilled person must assess the effected product to ensure it is safe and suitable for its intended use.

Combustion by-products of many organic compounds are toxic and/or carcinogenic. The nature of the burnt materials (such as lubricants, plastics, electrical cables, switch boards, etc.) and the combustion temperature are important to enable a determination to be made of the hazard from combustion by-products e.g. burning PVC electrical coatings at high temperatures can result in the production of dioxins.

3.13 Verification Programme

The operator must document and implement a Verification Programme to verify compliance with, and the effectiveness of, the programmes described in sections 3.1 to 3.12. The Verification Programme must include:

- verification procedures (who, what, when, where, how)
- parameters to be met (e.g. visual inspection criteria, any microbiological or pH limits)
- calibration of any measuring equipment (e.g. pH meters) where their measurements are essential for food safety
- corrective action to be taken when there is a non-compliance.

The Verification Programme should include a combination of activities (e.g. visual inspections, internal audits, microbiological testing) that will give confidence that the programmes are working effectively.

The operator must review verification records for repetitive defects or non-compliance trends. They must investigate, correct and prevent the causes of identified trends and repetitive defects.

Repetitive defects may result from things such as specific types of equipment, cleaning personnel,

cleaning procedures, or maintenance compounds. Identifying the cause of defects will allow targeted corrective actions.

3.13.1 Verification Procedures

The operator must document and implement the verification procedures that make up their Verification Programme.

3.13.1.1 Visual Inspections

Visual inspections must be made before, and during, processing operations. They must include a **pre-operational hygiene check** programme and an **inspection during processing** programme.

The person conducting the visual inspections must have the authority to prevent processing, and carry out corrective actions to rectify defects present. They must ensure appropriate corrective action is taken when problems are found.

a. Pre-Operational Hygiene Checks

The **pre-operational hygiene check** programme must verify that an adequate state of hygiene exists in facilities **before processing begins** or **after repairs and maintenance activities**. The programme must include:

- person responsible for conducting the inspection
- areas to be checked, including processing and associated support areas and equipment
- hygiene standards expected in each processing and support area, and for each type of equipment (where necessary)
- a clear description of when corrective action must be taken and what corrective action is expected.

Pre-operational inspections are not required on the external environment or dormant areas of the premises (e.g. areas not being used, or only used for access to other functioning areas).

b. Inspections During Operation (Including Good Operational Practices)

The **inspection during operation** programme must verify that an adequate state of hygiene is maintained during processing and personnel are using appropriate hygienic practices. The programme must include:

- person(s) responsible for conducting the inspection
- frequency of inspections
- areas to be checked, including processing and associated support areas and equipment
- hygiene standards expected in each processing and support area, and for equipment
- a clear description of when corrective action must be taken and what corrective action is expected.

3.13.1.2 Internal Audits

The operator must document and implement an **internal audit** programme. This must verify compliance with, and the effectiveness of, the programmes described in sections 3.1 to 3.12. The programme must include:

- person(s) responsible for conducting the audit
- audit schedule specifying when each programme is to be checked
- audit process
- a clear description of when corrective action must be taken and what corrective action is expected.

The audit schedule should ensure that each programme is audited:

- after any major changes to the programme
- when problems are suspected
- at least annually.

To achieve this it is recommended that every month a different programme is audited at random or based on past audit outcomes or the premises' Performance Based Verifications (PBV), e.g. pest control, waste disposal.

Audit processes should include a review of the documented programme, opening meeting, reality check to see whether or not it has been implemented as written and is effective, record check, closing meeting, follow-up and an audit report.

The auditor must ensure appropriate corrective action is taken when problems are found.

Audit reports must be kept showing findings and, where necessary, corrective actions taken.

3.13.1.3 Testing Programmes

The effectiveness of cleaning and sanitation should be verified by direct or indirect microbiological testing (e.g. using contact slides/plates, swabs or ATP) of the relevant environment and contact surfaces.

NZFSA only expects that such testing will be carried out when microbiological problems are indicated by:

- failures to meet product microbiological limits for pathogens or indicator organisms,
- findings of visual inspections,
- findings of internal audits, or
- other relevant information.

The operator must document and implement a **testing programme** to verify that an adequate state of hygiene is achieved after cleaning and sanitising, and maintained during processing. The programme must include:

- person(s) responsible for conducting testing
- frequency of testing
- areas to be tested, including processing environment and contact surfaces
- test methods
- standards / limits to be met
- a clear description of when corrective action must be taken and what corrective action is expected.

For poultry processing, microbiological loading of **commercially clean** contact surfaces has been found over time to normally be (APC₃₀) <10²cfu/cm². One-off counts could be in the 10² to 10³ cfu/cm² range but would not be standard.

During operations the mean log₁₀ count of organism(s) found on contact surfaces should not exceed the expected mean log₁₀ count of organism(s) found on product, i.e. contacting the surface should not increase the product loading.

Rapid tests for hygiene evaluation (e.g. bioluminescence) may be routinely used provided the operator has set maximum allowable limits, and justified how these have been set.

3.13.2 Defect Ratings

Defects identified during verification procedures must be rated according to their potential to effect food safety. This is done by considering the nature of the defect and the proximity of the defect to product or processing operations.

Defects must be rated as critical, major, or minor.

A critical defect is:

- one that would have a direct effect on product safety (e.g. damage to or severe deterioration of a contact surface, processing equipment failure, failure of the sanitising systems used for operational hygiene, direct contamination from overheads or ceilings, inadequate cleaning prior to start-up), or a combination of major defects that have a direct effect on product safety.

A major defect is:

- one that may result in a direct effect on product safety by introducing a conflicting hygiene status, e.g. changes to process flows or rates of production, refer also to Chapter 2 (to be written); or contaminating product through the actions of personnel or the proximity of equipment, product or waste material.

A minor defect is:

- one which is not expected to have any direct effect on product safety.
- defects must be corrected in a manner and priority that considers the impact on food safety.

3.13.3 Corrective Actions

Corrective action must include:

- identifying the cause and extent of the defect
- taking action(s) to correct the defect (including assessing if any product was at risk from contamination and providing for its disposition, and returning the affected area, protective clothing, personal equipment and other equipment to a hygienic state)
- taking action(s) to prevent or reduce the likelihood of the defect from recurring

Preventative actions include:

- amending documented programmes to correct deficiencies
- increasing the frequency of inspections or internal audits
- revising supervision or training programmes when staff, visitors or contractors are not following hygiene and sanitation practices as required
- issuing warnings to repeat offenders.
- a series of escalating responses is recommended for repetitive non-conformances.

Corrective actions must be implemented according to the following criteria:

- a critical defect must be corrected immediately. Processing must cease if taking the corrective action will have a direct effect on product safety.
- a major defect must be corrected at the first available opportunity during the day in which it occurs. It must be corrected 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. If multiple major defects occur, their combined effect on product safety must be considered. Where there is a direct effect on product safety, these defects must be corrected with appropriate urgency.
- a minor defect must be corrected as the opportunity arises. The operator must set a date for correction of the defect.

A minor defect should be corrected within 6 months.

In extenuating circumstances where a defect cannot be corrected within the above timeframes, the operator must ensure the defect is managed appropriately and the risk to product is minimised. Dates for correction must be set.

Extenuating circumstances may include replacement equipment / parts not being immediately available, unavailability of contractors, circumstances where processing must continue for animal welfare reasons etc.

Examples of managing the risk to product caused by a defect could include continually monitoring processing or product on production days to ensure the risk to product is minimal or preventing equipment from being used until repair can take place.

3.13.4 Record Keeping

The following records must be maintained:

- records from any monitoring or verification activities (e.g. visual inspection records, audit reports, testing results, defects found) for each programme (Sections 3.1 to 3.12).
- records from the trend assessments of monitoring.
- records that show defect criteria decisions.
- records of any corrective actions (including preventative measures) taken.

The person who performed the monitoring or verification must sign and date the record.

The person responsible for ensuring the effectiveness of any corrective action undertaken must counter-sign the record.

Signing can be manual or electronic.
