

Poultry Industry Standards Council

Poultry Industry Processing Standard 5

PIPS 5

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Preface

The Poultry Industry Processing Standard (PIPS5) contains instructions and guidelines to be followed when processing poultry for human consumption. It represents the minimum standards with which the industry must comply to ensure the safe production of poultrymeat products.

PIPS5 has been developed under the direction and guidance of the Poultry Industry Standards Council (PISC), with considerable input from Industry representatives. This Standard has been endorsed by PISC.

PIPS5 applies to poultrymeat produced for the domestic market, and will be used as the base standard when market access is negotiated with importing countries.

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1 Introduction

Background

The principle goal of this poultry processing standard is to produce poultry meat for human consumption and to minimise the potential food safety hazards associated with poultry. This standard recognises the major elements in the process and identifies food safety objectives for each of the sections. Several principles are outlined for processing poultry which are based on the application of Hazard Analysis Critical Control Points (HAACP) concepts. The Poultry Industry Processing Standard 5 (or PIPS5) also allows for the adoption of alternative processing methods, if validated within the terms of IS/IAS 8, Section 4.

Scope

This standard relates to the pre-slaughter, slaughter and dressing and post slaughter handling of poultry meat to the extent that poultry meat product (or where appropriate, poultry byproducts) is suitable for further processing or to enter commerce.

1.1 Outcome

Produce poultry meat for human consumption and to minimise microbial, physical and chemical contamination of poultry meat.

1.2 Definitions

Apparently healthy/healthy refers to a bird that does not show evidence of disease or defect which might affect its suitability for human consumption as judged by a competent person.

Approved means by the Director-General of Agriculture, as delegated to the Chief Meat Veterinary Officer.

Clean means the absence of visible contaminants on food or byproduct contact surfaces or surrounding walls, floors, equipment or protective clothing.

Competent person means a person with any specific competency as defined in any standard, specification or requirement, who may provide expert technical advice within the scope of the particular standard, specification or requirement (as for IS/IAS6 and IS/IAS8)

Giblets means any combination of heart, neck, gizzard and liver collected and processed for human consumption.

Minimise is to have taken all practical steps to substantially reduce the potential hazard of concern.

Shall expresses a mandatory requirement.

Should/may expresses a recommended provision which when followed may assist in achieving the required outcome.

Washed means the use of flowing water to remove visible contamination.

Whole flock health scheme is a documented effective system of health surveillance and, where applicable, disease control or eradication and includes nutritional diseases and the management of agricultural chemicals and animal remedies within the general and specific conditions of their use.

1.3 Principles

- 1.3.1 The production of poultry products and byproducts shall be documented according to IS/IAS 8, Section 4: Documented Systems.

Documentation shall cover the health of live birds, the welfare of birds during transport and slaughter, humane slaughter, pre-slaughter requirements, dressing and post slaughter handling and further processing.

- 1.3.2 Any biological, chemical or physical substance or agent of live birds that may result in harm to people shall be minimised through the application of effective whole flock health schemes.
- 1.3.3 The slaughter and dressing of birds shall be performed in a manner consistent with good manufacturing practice and shall at all times minimise microbial contamination of carcasses and product.
- 1.3.4 Post-slaughter handling and processing of carcasses and products shall focus on minimising proliferation and re-distribution of microorganisms.

1.3.5 Customised Processes, Experimentation, Hazard Analysis and Critical Control Point Systems (HACCP) and New Technology

Where any outcome required by this manual can be achieved using alternative general or specific principles to those outlined for a particular outcome, then the alternative principles are permitted provided they are fully validated within the premises documented quality assurance programme, within the context of IS/IAS 8, section 4, and approved by MAF in accordance with IS/IAS 8, section 4. Compliance is also required with all other relevant regulatory requirements.

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1.4 Cross references

- 1.4.1 Premises shall be licensed according to the requirements of *Manual 1: Licensing*.
- 1.4.2 Premises shall be designed and constructed according to the requirements of *IS/IAS2: Design and Construction*.
- 1.4.3 Premises hygiene and sanitation shall conform to the requirements of *IS/IAS3: Sanitation*
- 1.4.4 Further processing, including non-meat ingredients, thermal processing, drying, acidification and wrapping and packaging shall conform to the requirements of *IS/IAS6: Edible Product Handling*, as required.
- Note:** Chilling, warm boning, and freezing requirements for poultrymeat are currently found in PIPS5.
- 1.4.5 The collection and treatment of byproducts shall conform to the requirements of *Manual 7: Circulars* (Currently under review as *IS/IAS7: Byproducts*)
- # 1.4.6 Quality assurance systems shall be developed according to the principles in *IS/IAS8: Quality Assurance*, pending further review and modification of the Standard (*IS/IAS8*) in consultation with industry groups, including the poultry industry.
- 1.4.7 Transport of products shall conform to the requirements of *Manual 9: Carriage of Product and Wharf Handling* (under review).
- 1.4.8 The export of products shall conform to the requirements of *Manual 12: Overseas Requirements and Certification*.
- 1.4.9 The post-mortem examination of birds shall conform to the requirements of *Manual 16*, as specified in *PIPS5*.

Note: Post-mortem specification is currently under review. The final outcome will be advised by Technical Directive and modification to PIPS 5.

1.5 Layout of Manual

1.5.1 Scope

Each section commences with a scope which broadly describes the activity to which the requirement applies.

1.5.2 Outcome

The outcome is the principal requirement. It is a statement of what is intended to be achieved and is a fundamental component of the New Zealand system for ensuring safety of food derived from animals, excluding fish, minimising hazards associated with byproducts and compliance with importing country requirements. It provides a basis for determining equivalence of alternative general or specific principles with the New Zealand standard.

1.5.3 General Principles

The general principles described in the manual establish the fundamental principles that will achieve the required outcome.

1.5.4 Specific Principles

The specific principles are subsequently detailed to provide an additional guide which support the general principles. The principles described in the manual are based on either validated data or good manufacturing practice. Alternative processing methods, fully validated within the premises' documented quality assurance programme in the context of PIPS8, Section 4 are permitted.

International recognition of any procedure described in this manual may differ from country to country and specific importing country requirements should be consulted.

There are no headings which identify specific principles. A specific principle will be identified as any major heading (with two-digit numbering and in a bold 14 pt typeface) which occurs in sequence after general principles.

1.5.5 Explanatory Notes

Any text which has been enclosed in a single bordered box does not form part of the standard. It is generally an explanatory note which is intended to expand the general intent of the particular requirement and may serve to clarify compliance with the requirements in some circumstances, in other cases they act as qualifiers to indicate that the proposed standard is not yet able to be utilised or that further development is required. They have been positioned immediately after the section to which they apply.

1.5.6 Director-General

Wherever it is a requirement in this manual to report to, or seek the approval of, the Director-General then the requirement shall be addressed to the Chief Meat Veterinary Officer.

1.6 Hazard Analysis Critical Control Points (HACCP)

1.6.1 Documented Pre-requisite Programmes

Every premises is to have a documented HACCP plan together with the following pre-requisite programmes.

- potable water quality;
- sanitation and hygiene of premises and equipment;
- operator hygiene - including protective clothing requirements, personal equipment and use of amenities;
- training;
- poultry meat that comes in contact with non-contact surfaces;
- food contact materials - includes packaging materials;
- incoming materials, eg ingredients, additives etc;
- repairs and maintenance;
- chemicals;
- vermin control;
- waste disposal;
- whole flock health scheme and on-line quality checks; and
- storage and transport.

The Poultry Industry Standards Council have indicated that they would like the whole poultry processing sector to work towards mandatory implementation of HACCP.

All poultry processors should refer to the Manual '*A Guide to HACCP Systems in the Meat Industry*', (MAFRA, May 1997) for a full treatment of both the pre-requisite programmes and the steps needed in the development of a premises-specific HACCP plan.

Note: MAFRA have pledged support to PISC in the development of a generic poultry processing (slaughter and dressing) HACCP plan.

2 Pre - Slaughter

Hazard - this element defines the potential for pathogens of enteric origin and residues of agricultural and environmental chemical substances.

2.1 Outcome

Only apparently healthy, live birds shall be presented for slaughter and processing.

2.2 Principles

2.2.1 General Health

Every premises shall maintain a register of suppliers who shall provide to the licensee records containing evidence of the health status of the flock.

Evidence relating to the health status of the flock destined for slaughter should include:

- (a) record of any medications or immunisations given to the flock (or individual birds) during the entire growing period;
- (b) records of feeding regimes;
- (c) records from visits by company or independent veterinarian or competent person;
- (d) records of blood tests (PIANZ Standard 2-1) or the results of other individual or flock diagnostic results that would establish and verify the health status of the individual/flock;
- (e) records from *Salmonella* testing of the flock, and any other microbiological results performed on the flock;
- (f) any other records that would help establish and verify the health status of the flock.

Experience has shown that individual birds or flocks that have tested positive to *Salmonella* or *Campylobacter* ideally should be slaughtered at the end of the day to prevent 'carryover' of the organisms to uncontaminated live birds, products, plant and equipment.

2.2.1.2 Evidence of the disease status of birds shall be either:

- (a) in the form of records of an effective whole flock health scheme under the supervision of a competent person; **or**
- (b) evidence provided by a competent person from examinations carried out at the farm of supply.

If the observations made at ante-mortem examination or during the surveillance history of the flock suggest that poultry display symptoms of a notifiable or exotic disease, the licensee or operator should contact the Ministry of Agriculture and Forestry's Outbreak Response Services (0800-809-966) as soon as possible.

The affected poultry should be withheld from slaughter.

Competencies for the competent person performing ante-mortem inspection could include:

- (a) the ability to recognise the specific diseases and conditions affecting poultry, and the ability to take appropriate action;
- (b) the use, dosages, broad effects, and withholding periods for the animal remedies licensed for use with poultry, and the ability to administer the licensed animal remedies as required clarification: under the supervision of the veterinarian or as stipulated on the licensed animal remedy's label;
- (c) the development, maintenance, implementation and monitoring of quality systems for the production farm; and
- (d) the importance of monitoring the production shed for microbial contaminants.

2.2.2 Live birds submitted for slaughter

Only live birds shall be consigned to the slaughter premises. Birds that are apparently unhealthy shall not be sent to any slaughter premises.

2.2.3 Only apparently healthy birds shall be slaughtered

2.2.3.1 Birds shall appear healthy to the licensee on receipt of the birds at the slaughter premises.

2.2.3.2 Birds that have suffered musculoskeletal trauma during transportation may be slaughtered.

2.2.3.3 The operator of a processing premises shall have in place a system which ensures that:

- (a) live poultry shall be treated humanely;
- (b) poultry found dead on arrival shall be disposed so as to prevent the carcass coming in contact with product; and
- (c) moribund, unhealthy or rejected birds shall not be processed.

Live poultry that are rejected at pre-slaughter examination should be humanely killed in such a way to avoid contamination of floors, walls and equipment.

Moribund, unhealthy or rejected poultry should be killed immediately and placed in containers which are clearly marked as inedible.

2.2.4 Time of Slaughter

2.2.4.1 Apparently healthy birds shall be slaughtered expeditiously on arrival at the slaughter premises.

Confinement has been shown to increase the shedding of enteric pathogens.

Withholding of feed for 6-10 hours prior to slaughter has been shown to reduce crop contents.

2.2.5 Welfare

The welfare of birds shall be paramount during confinement and transportation to the slaughter premises.

The publication '*AWAC Code of Recommendations and Minimum Standards for the Welfare of Animals Transported in New Zealand*' (AWAC Code 15) [November 1994], especially Section 16 (and any subsequent amendments) gives the minimum guidelines for the transportation and handling of animals.

3 Slaughter and Dressing

3.1 Outcome

Microbiological contamination of the carcass is minimised during the slaughter and dressing of poultry.

3.2 Principles

3.2.1 Slaughter Regulations

3.2.1.1 All poultry shall be killed humanely, and the slaughtering method shall comply with all relevant legislation.

3.2.1.2 Stunning and slaughter methods are not specifically prescribed and the particular method employed shall be approved by the Director-General in *every* case.

3.2.1.3 Live poultry that are rejected at pre-slaughter examination shall be humanely killed in such a way to avoid contamination of floors, walls, equipment and product.

Generally accepted methods for the humane slaughter of poultry for human consumption include:

- (a) rendering unconscious by an electric current;
- (b) slaughtering by complete removal of the head; or
- (c) any other method approved by the Chief Meat Veterinary Officer.

In every case, the licensee must ensure that the birds are slaughtered humanely, and that every premises has a documented system detailing the slaughtering process(es), including checks for consciousness of birds when appropriate.

NOTE: This section will have to be reviewed when the new Animals Protection Act and Animal Products Act are passed into law.

3.2.2 Humane treatment

Processing shall not commence until the birds have been *either* stunned and humanely slaughtered or humanely slaughtered without stunning.

3.2.3 Scalding (when scalded)

3.2.3.1 Birds shall be dead and bleeding shall be substantially completed before scalding.

3.2.3.2 Where a wetting agent is added to scald water it shall be an approved chemical (Manual 15) and used according to the manufacturers instructions.

Where *manual scalding* is performed, the scald water should be replaced on a regular basis, or have a continuous water supply and overflow that minimises contamination.

Where controlled water temperature methods are used, *agitated scald tanks* should be supplied with a continuous flow of water to ensure adequate water levels and temperature is maintained.

When *scalding sprays or steam jets* are used, they should be sufficient in number and type to maintain an adequate scalding operation.

The rate of flow of potable water into the scald tank should be adequate to maintain a sanitary scalding operation. The rate of flow depends upon the species or type of poultry and number of birds per minute passing through the scald tank.

As a minimum requirement, all scald tanks (irrespective of the nature of processing) should be emptied and cleaned at the end of each day's operations.

3.2.4 Dressing

3.2.4.1 Defeathering

Defeathering shall be carried out in a manner which minimises avoidable contamination of the carcase.

Mechanical pluckers, if used, should be installed as to be accessible for thorough and regular cleaning and for the removal of any accumulated feathers and contamination, and should be constructed to prevent the scattering of feathers.

Continuous collection and removal of feather from the defeathering and scalding areas should be carried out without contamination of the product or processing area.

3.2.4.2 Flaying

Where poultry are intended to be skinned pre-evisceration, the principles of hygienic dressing outlined in IS5, ie, MIHC Industry Standard 5 or VISC Industry Agreed Standard 5 shall apply.

3.2.4.3 Waxing

Where feathers are removed by waxing, the principles of hygienic dress shall apply.

Only clean wax of edible grade (Manual 15) which has been stored under hygienic conditions shall be used for wax dipping.

Where wax is used in the removal of secondary feathers, carcasses should be handled so that all wax and removed feathers fall into containers.

Feather separation sieves included in wax dipping machines should be removed and cleaned once daily.

Reclaimed wax should be held at a temperature of not less than 80°C for a period of not less than 20 minutes or for a time and temperature equivalent to ensure adequate pasteurisation.

Following heat treatment the wax should be skimmed, washed and filtered or passed through a centrifugal cleaning machine.

3.2.5 Washing

3.2.5.1 All bird shall be washed after defeathering and before any further incision is made in the carcass.

3.2.5.2 Before evisceration the outer surface of each poultry carcass shall be washed by a spray or constant flow of potable water or chlorine solution or a solution of another approved chemical.

The purpose of the pre-evisceration wash is to have the outside of the bird wet, so that the rate of attachment of microorganisms is reduced. Reducing the ability for the microorganisms to attach to the carcass has a greater effect on reducing contamination than relying on chemical intervention.

A deviation from this requirement could be approved as a premises specific process approval, which had been validated within the context of IS/IAS 8, Section 4.

3.2.6 Evisceration

3.2.6.1 The alimentary tract and other internal organs shall be removed intact. Rupture of the tract with resultant contamination of the carcass shall be avoided.

3.2.6.2 There will however, be a tolerable failure rate.

The premises documented quality assurance programme would set action limits and critical limits for the tolerable failure rate, and set actions to be taken when the tolerable failure rate is exceeded.

3.6.2.3 Poultry killed by decapitation shall be trimmed to remove the neck tissue that has been contaminated during scalding and defeathering.

3.6.2.4 Poultry shall be eviscerated within one hour of being slaughtered (unless a specific process approval is granted).

3.2.6.5 During a manual evisceration process all utensils, hands, benches and food contact surfaces shall be rinsed in potable water when contaminated by faecal, ova or other contamination.

Experience has shown that when using mechanical evisceration equipment, the most important factor for reducing damage to the intestine is the way that the equipment is maintained and configured for a particular size or type of carcass.

The equipment performing the spray rinse of mechanical evisceration equipment should be regularly checked to ensure that the machine washing sprays are functioning to specification.

A facility for the rinsing of hands and implements should be provided when the vent is opened manually. A similar facility should also be provided for a manual back-up to a mechanical vent opening operation.

Tables or benches that become contaminated during manual evisceration processes should be cleansed before further carcasses are processed.

Each set of viscera should be removed from the bench/table surface immediately after being withdrawn.

Containers used for the collection of viscera should be emptied on a continuous basis.

3.2.7 Giblets

3.2.7.1 All giblets that are saved for human consumption during the evisceration process shall be removed, collected and handled in a way that prevents contamination of other products and equipment.

3.2.7.2 Giblets shall be washed under potable water before chilling.

3.2.7.3 Giblets shall not be placed within a dressed poultry carcass unless the giblets are enclosed in a sealed bag or securely wrapped so as to prevent the potential for cross-contamination between carcass and giblets.

3.2.7.4 Giblets shall be continuously chilled to 4°C or cooler after their removal from the viscera and drained to remove free ice and water prior to packing (unless a premises specific process approval is granted, in which an alternative process has been validated).

Separation and recovery of giblets and cleaning of giblets should be performed in a manner that avoids contaminating the product, other products and surrounding surfaces.

Where giblet chiller tanks are used they should be provided with an overflow sufficient to maintain sanitary conditions and a suitable chilling regime.

Giblets cleaned by automatic machines should be subjected to follow up manual examination.

Collection of giblets from manually eviscerated birds should comply with the same principles as for giblets collected from mechanically eviscerated birds.

3.2.8 Sanitation

3.2.7.1 All equipment, including hands, shall be kept clean to minimise cross contamination.

3.2.9 Post evisceration washing

After evisceration, the inner and outer surface of all carcasses shall be washed in running potable water and/or an approved sanitiser, to remove any contamination before undergoing any chilling regime.

The purpose of post- evisceration washing is to ensure that the carcass is clean and free from visual contamination.

Spray washes

Sprays used for poultry washing should ensure thorough washing inside and outside the carcass of all classes and sizes of poultry carcasses.

The water volume should be regularly monitored to ensure effectiveness.

Immersion Washing

Immersion washing should only be permitted if it is performed in troughs or tanks that are provided with either mechanical or filtered air agitation and/or efficient overflow system that which maintains sanitary conditions.

When immersion washing is used, the carcasses should ideally move against the current.

3.2.10 Examination - Carcasses fit for human consumption

3.2.10.1 Any carcass or product showing signs of disease or defect that would render the product unfit for human consumption shall be removed from the food chain before chilling starts.

3.2.10.2 Diseased or defective carcasses may be removed at any stage prior to chilling.

3.2.10.3 The dispositions for poultry meat for human consumption shall be as given in PIPS5, Appendix 1. (Ref Note in 1.4.9)

Note 1 The Competency Specification for company personnel performing post-mortem inspection is currently under discussion with Industry. The Competency Specification is likely to be available in early 1999.

Note 2 The post-mortem specification (procedures, diseases and dispositions) is also under review, with a likely timeframe for resolution as being early 1999. (Ref Note in 1.4.9)

The number of suitably trained company personnel performing the examination should be determined by the individual premises, but should be sufficient in number to ensure that unhealthy, diseased, or otherwise unsuitable poultry is removed from production.

4 Post-slaughter (includes chilling)

Care should be taken to prevent recontamination with pathogens of enteric origin and primary contamination from pathogens of environmental origin.

4.1 Outcome

Carcasses shall be chilled to minimise microbial proliferation and handled in a manner to minimise environmental microbial contaminants.

Microbial contamination and proliferation are controlled by chilling and hygienic handling.

4.2 Principles

4.2.1 Chilling

4.2.1.1 Every part of any poultry carcass shall be chilled to an internal temperature of +4°C or cooler as soon as practicable after slaughter and dressing and taking account of the nature and intended use of the final product.

Good Manufacturing Practice would indicate that the temperature of +4°C should be reached within 24 hours of dressing.

4.2.1.2 Immersion chilling shall be subject to the following conditions:

- (i) all water and ice shall be potable on entry to the tank;
- (ii) microbiological and chemical hazards shall be minimal; and
- (iii) the water flow should be adequate to achieve the desired chilling.

The water flow should be counter to the flow of carcasses.

Flow of water should be adequate to dilute microbial build up and the levels of chlorine disinfectant byproducts, e.g., trihalomethanes etc, should not exceed guideline levels for potable water.

The following water flows are consistent with Good Manufacturing Practice:		
Carcase weight (kg)	Minimum Flow (litres/carcase)	*Minimum Flow (litres/carcase)
<2.5	1.5	0.5
2.5-5.0	2.5	1.5
>5.0	3.5	2

*Recommended minimum flow through the last tank when multiple immersion tanks are used.

The minimum flow rates (litres/carcase) given above *do not* include the initial volume required to fill the tank at the start of processing or at any other time the tank is being filled.

4.2.2 Warm Boning

Deboned poultry meat shall be continuously chilled to an internal temperature of +4 °C or cooler after carcasses are warm boned.

Good Manufacturing Practice would indicate that the temperature of +4 °C should be reached within 24 hours of dressing.

4.2.3 Freezing

Every part of a poultry carcase shall be frozen to an internal temperature of -15 °C or cooler as soon as practicable after slaughter and dressing, and taking into account the nature and intended use of the final product.

Good Manufacturing Practice would require that all product destined to be frozen will achieve a temperature of -15 °C or cooler within 72 hours of dressing.

4.2.4 Microbiological Monitoring

Routine process monitoring shall include microbiological evaluation of carcasses and products for the purposes of verifying the effectiveness of the established process parameters and control parameters for any processes described in this standard.
