



FOOD STANDARDS
Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

10-05

7 December 2005

DRAFT ASSESSMENT REPORT

PROPOSAL P282

PRIMARY PRODUCTION & PROCESSING STANDARD FOR POULTRY MEAT

DEADLINE FOR PUBLIC SUBMISSIONS: 6pm (Canberra time) 1 February 2006
SUBMISSIONS RECEIVED AFTER THIS DEADLINE
WILL NOT BE CONSIDERED

(See 'Invitation for Public Submissions' for details)

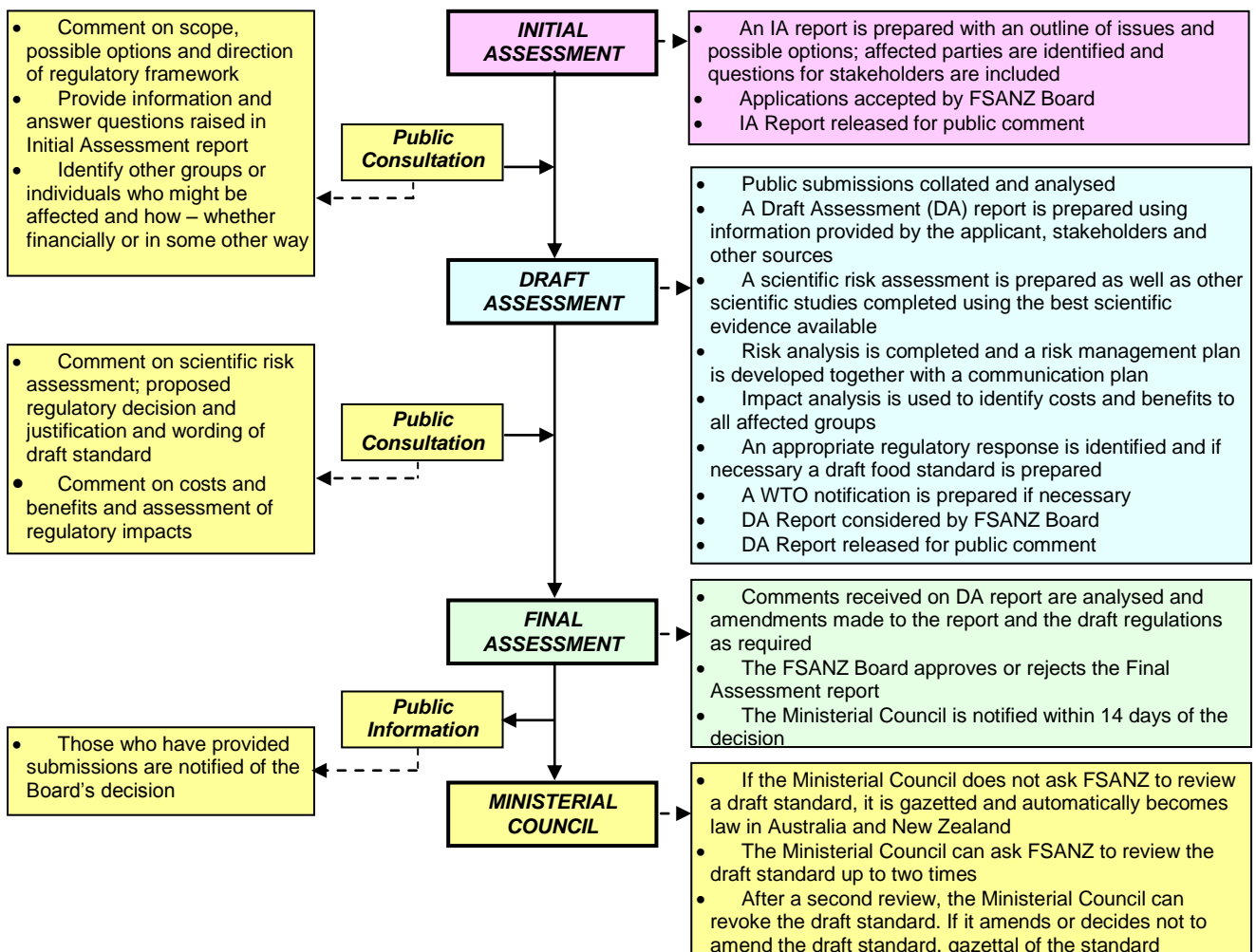
FOOD STANDARDS AUSTRALIA NEW ZEALAND (FSANZ)

FSANZ's role is to protect the health and safety of people in Australia and New Zealand through the maintenance of a safe food supply. FSANZ is a partnership between ten Governments: the Australian Government; Australian States and Territories; and New Zealand. It is a statutory authority under Commonwealth law and is an independent, expert body.

FSANZ is responsible for developing, varying and reviewing standards and for developing codes of conduct with industry for food available in Australia and New Zealand covering labelling, composition and contaminants. In Australia, FSANZ also develops food standards for food safety, maximum residue limits, primary production and processing and a range of other functions including the coordination of national food surveillance and recall systems, conducting research and assessing policies about imported food.

The FSANZ Board approves new standards or variations to food standards in accordance with policy guidelines set by the Australia New Zealand Food Regulation Ministerial Council (Ministerial Council) made up of Australian Government, State and Territory and New Zealand Health Ministers as lead Ministers, with representation from other portfolios. Approved standards are then notified to the Ministerial Council. The Ministerial Council may then request that FSANZ review a proposed or existing standard. If the Ministerial Council does not request that FSANZ review the draft standard, or amends a draft standard, the standard is adopted by reference under the food laws of the Australian Government, States, Territories and New Zealand. The Ministerial Council can, independently of a notification from FSANZ, request that FSANZ review a standard.

The process for amending the *Australia New Zealand Food Standards Code* (the Code) is prescribed in the *Food Standards Australia New Zealand Act 1991* (FSANZ Act). The diagram below represents the different stages in the process including when periods of public consultation occur. This process varies for matters that are urgent or minor in significance or complexity.



INVITATION FOR PUBLIC SUBMISSIONS

FSANZ has prepared a Draft Assessment Report of Proposal P282; and prepared a draft variation to the *Australia New Zealand Food Standards Code* (the Code).

FSANZ invites public comment on this Draft Assessment Report based on regulation impact principles and the draft variation to the Code for the purpose of preparing an amendment to the Code for approval by the FSANZ Board.

Written submissions are invited from interested individuals and organisations to assist FSANZ in preparing the Final Assessment for this Proposal. Submissions should, where possible, address the objectives of FSANZ as set out in section 10 of the FSANZ Act. Information providing details of potential costs and benefits of the proposed change to the Code from stakeholders is highly desirable. Claims made in submissions should be supported wherever possible by referencing or including relevant studies, research findings, trials, surveys etc. Technical information should be in sufficient detail to allow independent scientific assessment.

The processes of FSANZ are open to public scrutiny, and any submissions received will ordinarily be placed on the public register of FSANZ and made available for inspection. If you wish any information contained in a submission to remain confidential to FSANZ, you should clearly identify the sensitive information and provide justification for treating it as commercial-in-confidence. Section 39 of the FSANZ Act requires FSANZ to treat in-confidence, trade secrets relating to food and any other information relating to food, the commercial value of which would be, or could reasonably be expected to be, destroyed or diminished by disclosure.

Submissions must be made in writing and should clearly be marked with the word 'Submission' and quote the correct project number and name. Submissions may be sent to one of the following addresses:

Food Standards Australia New Zealand
PO Box 7186
Canberra BC ACT 2610
AUSTRALIA
Tel (02) 6271 2222
www.foodstandards.gov.au

Food Standards Australia New Zealand
PO Box 10559
The Terrace WELLINGTON 6036
NEW ZEALAND
Tel (04) 473 9942
www.foodstandards.govt.nz

Submissions need to be received by FSANZ by 6pm (Canberra time) 1 February 2006.

Submissions received after this date will not be considered, unless agreement for an extension has been given prior to this closing date. Agreement to an extension of time will only be given if extraordinary circumstances warrant an extension to the submission period. Any agreed extension will be notified on the FSANZ website and will apply to all submitters.

While FSANZ accepts submissions in hard copy to our offices, it is more convenient and quicker to receive submissions electronically through the FSANZ website using the Standards Development tab and then through Documents for Public Comment. Questions relating to making submissions or the application process can be directed to the Standards Management Officer at the above address or by emailing slo@foodstandards.gov.au.

Assessment reports are available for viewing and downloading from the FSANZ website. Alternatively, requests for paper copies of reports or other general inquiries can be directed to FSANZ's Information Officer at either of the above addresses or by emailing info@foodstandards.gov.au.

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Executive summary and statement of reasons

A whole-of-government approach to the management of food safety is now being taken in Australia. Governments have agreed that FSANZ will address food safety throughout all parts of the food supply chain (i.e. from paddock-to-plate). This proposal aims to address food safety within the poultry meat supply chain and specifically to improve public health and safety and ensure that consumers continue to have confidence in the safety of the poultry they consume, but at the same time do this in a way that minimises impost on food businesses.

This Draft Assessment Report comprises the second step in the standard development process for the Primary Production and Processing Standard for Poultry Meat.

As part of the FSANZ standard development framework, an assessment, *Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia*, was undertaken in the context of the current regulatory and non-regulatory environment in the poultry meat industry and using international risk assessment protocols. The outputs of the scientific assessment were used to inform the development of risk management measures. In particular, the assessment identified:

- the food safety risks in the poultry supply chain; and
- where these risks could best be managed in this chain.

The conclusions from the assessment were used to determine the gaps in current management strategies, that is, where there are no or insufficient controls measures for an identified risk. Such gaps may be referred to as residual risk.

Where residual risks were identified, measures have been proposed to control those risks. A range of factors were considered when evaluating the technical feasibility, practicality and cost of the proposed risk management options compared to the goal of minimizing food-borne risks to the greatest extent possible. The options recommended have been developed in consultation with the Poultry Meat Standard Development Committee, after consideration of the submissions received on the Initial Assessment Report and targeted consultations held with industry members and government agencies. Eleven submissions were received in response to the Initial Assessment Report and the comments and issues raised are addressed in this Report.

The national primary production and processing Standard will form a key part of an effective food safety system with responsibility being taken at all points across the food supply chain to manage food safety hazards. The Standard is an integral part of the ‘food safety package’ that does not duplicate, but builds on, current regulatory or non-regulatory schemes to manage food safety risks. It recognises the industry’s ability to provide additional support - through for example, codes of practice, industry preferred standards and industry guidelines and supporting material.

There are two parts to this whole of chain standard development process. The first is the development of a national Primary Production and Processing Standard for Poultry Meat (Standard for Poultry Meat). The second is the evaluation of other poultry requirements in the Food Standards Code, with a view to amending these where necessary.

This leads to a consideration of the provisions relating to fluid loss from frozen whole poultry in Chapter 2 of the Code.

FSANZ welcomes and encourages stakeholder input. The comments, information and data provided during this consultation will be considered during the development of the Final Assessment Report.

Rationale

The risk assessment concluded the main hazards of concern were *Salmonella* and *Campylobacter*. It also identified a range of factors at the primary production, processing, retail and consumer stages of the poultry meat supply chain that affect the prevalence and levels of contamination by *Salmonella* and *Campylobacter* spp. of poultry.

The conclusions from the risk assessment were used to determine the adequacy of the current management strategies, that is, where there are no or insufficient control measures for an identified risk. Such gaps may be referred to as ‘residual risk’. The residual risk of *Salmonella* and *Campylobacter* points to the need to implement food safety management strategies at the primary production (breeding farms to the transport of birds to slaughter facilities) and consumer stages of the poultry meat supply chain. In contrast, the primary production stage prior to breeding farms and the processing and retail stages are not considered to contribute to the residual risk, provided the current management systems in place are implemented consistently and enforced.

Measures to address the identified residual risk on-farm were considered. Various options were analysed.

Ensuring that primary producers of poultry adequately manage on-farm risks will be achieved by placing:

- an obligation on poultry processors to source live poultry only from farms that are controlling their food safety hazards. This reflects current industry practices where poultry processors normally own the poultry on the farm and check the farms to ensure good agricultural practices are being followed; and
- a direct legal obligation on the poultry farmer to control its food safety hazards.

While some sectors of industry are concerned about the likely costs of these measures, it was concluded that the benefits through improved food safety outcomes would outweigh these costs. FSANZ will work closely with the jurisdictions and with industry in the development of the interpretive guide for the standard to ensure low cost options are available to industry.

Standard for Poultry Meat

Decision

The main outcome of Proposal 282 is draft Standard 4.2.2 - Primary Production and Processing Standard for Poultry Meat (see Attachment 1 for a copy of this Standard). The standard applies in Australia only, to all poultry primary production businesses and poultry food businesses.

Standard 4.2.2 will be a new national, through-chain standard for the poultry meat industry. The impact of these new requirements is expected to be minimal, particularly if a two-year implementation period is provided. However, comments from poultry farming operations and processors are welcome on the possible impacts.

The Standard does not include retail, as the risk assessment concluded that the potential risks from poultry at the retail stage of the poultry meat supply chain are adequately addressed through current management systems. However, the risk assessment did identify consumers as an important contributor to the safety of poultry meat and although consumers cannot be covered under a standard, FSANZ proposes to work with the Poultry Cooperative Research Centre in developing a more targeted food safety education strategy to improve consumer handling of raw poultry.

Requirements at primary production

Standard 4.2.2 will require a businesses involved in the growing of poultry intended for sale for human consumption (and includes breeding, hatching and transporting to the processing facility) to systematically examine all of their operations to identify potential poultry food safety hazards and implement controls that are commensurate with the food safety risk. In particular, the controls must minimise contamination of poultry from:

- (a) breeder stock; and
- (b) wild and domestic animals and birds; and
- (c) insects and rodents; and
- (d) drinking water; and
- (e) feed and litter; and
- (f) personnel; and
- (g) equipment.

Requirements at processing

Standard 4.2.2 will require food businesses involving the processing of poultry intended for sale for human consumption to:

- develop and implement a HACCP based food safety management system as currently required under State/Territory legislation which mandates compliance with the *Australian Standard for Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption AS 4465:2001* (the Australian Standard);
- comply with Standard 3.2.2 - Food Safety Practices and General Requirements and 3.2.2 - Food Premises and Equipment (to reflect current requirements in State/Territory legislation);
- be obligated to ensure farmers supplying them with poultry are minimising food safety hazards (to support the requirement on poultry primary production businesses); and
- maintain sufficient records to enable poultry and poultry meat products to be traced, where necessary for food safety.

Statement of Reasons

A Standard for Poultry Meat (Standard 4.2.2) specifying requirements at the primary production and processing stages of the poultry meat supply chain should be inserted into Chapter 4 of the Code for the following reasons:

- the proposed variation to the Code is consistent with the section 10 objectives of the FSANZ Act to reduce the incidence of food-borne illness in Australia through a whole-of-chain approach to the safety of poultry;
- at the primary production stage, the new requirement for poultry farming operations to control their food safety hazards will address the residual risk identified by the scientific assessment, with the aim of lowering the percentage of poultry contaminated with *Salmonella* and *Campylobacter* spp;
- at the processing stage, although the scientific assessment did not identify a residual risk/no gaps in current strategies, the transfer of the current food safety requirements for poultry processing within State/Territory legislation¹ to a Standard for Poultry Meat, will enable a whole-of-chain approach to the safety of poultry within the Code;
- the new legal requirements proposed for poultry farming operations and processors strengthen existing arrangements between processors and poultry farmers that supply processors, by enabling enforcement agencies to scrutinise these existing arrangements and to intervene where necessary; and
- the cost-benefit analysis indicates that Standard 4.2.2 is the most cost effective means of addressing the food safety hazards within the poultry meat supply chain.

Other poultry requirements in the Code

Two existing requirements within the Code that apply to poultry were evaluated as part of this proposal. The recommended risk management strategies for each of these are outlined below.

Eviscerated Poultry

Decision

It is recommended that clause 4 of Standard 1.6.2 - Processing Requirements be deleted. This clause permitted poultry to be sold that was not completely eviscerated. This standard applies in Australia only.

Statement of Reasons

Clause 4 of Standard 1.6.2 - Processing Requirements be deleted for the following reasons:

¹ These food safety requirements are set out in *Australian Standard for Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption AS 4465:2001*, which State/Territory legislation requires poultry processors to comply with.

- it permits poultry to be sold that is not completely eviscerated which is in conflict with the Australian Standard which requires poultry to be completely eviscerated and is currently mandatory under State and Territory legislation; and
- partly eviscerated poultry has the potential to be highly contaminated with pathogenic bacteria and therefore poses an unacceptable risk to consumers.

Limit on fluid loss from thawed poultry

During the development of the standard, the Australian poultry industry raised concerns that it may not be feasible to consistently meet the current legal limit applying to fluid loss from frozen whole birds. The current fluid loss limit in the Code is 60 g/kg (6%) of thawed poultry and was set in 2000 as part of the process of developing a meat standard for the joint Australia New Zealand Food Standards Code. Prior to this, the limit for fluid loss was 80 g/kg (8%) in Australia and 60 g/kg in New Zealand. The Australian poultry industry has indicated a preference for returning to the 8% limit. A limit is set in the Code to prevent fraudulent practices i.e. to prevent the bulking of frozen poultry with water.

Decision

The preferred option is to delete the current fluid loss limit for frozen poultry and refer poultry processors (through the inclusion of an editorial note in the Standard for poultry meat) to their legal obligations under Standard 1.3.3 (Processing Aids), with respect to the use of water as a processing aid.

This will indicate that where water is used to assist with processing it may only be used at the lowest level necessary to perform the processing function. Under Standard 1.3.3, if water is used in excess of what is necessary to meet the processing needs, it is no longer considered a 'processing aid' but rather an ingredient that is added to the food. As an ingredient, the water would need to be declared according to Standard 1.2.4 (Labelling of ingredients). Under Standard 1.2.4, added water must be declared if it constitutes 5% or more of the final food.

These obligations would be further explained in the interpretive guide for the Standard for Poultry Meat and would advise on appropriate practices to minimise water uptake and what would be considered to be a reasonable percentage of water uptake, having regard to bird size.

Statement of Reasons

The current fluid loss limit in clause 2 of Standard 2.2.1 - Meat and Meat Products should be deleted for frozen poultry and replaced with an editorial note in the Standard for Poultry Meat for the following reasons:

- the poultry industry has indicated it can no longer consistently meet the current 6% limit due to changes in the processing of poultry because of the implementation of Hazard Analysis and Critical Control Programs (HACCP) in 1997 and a market preference for larger birds;

- setting a fluid loss limit for frozen poultry is problematic because the issue is excessive water uptake occurring during processing for all poultry, not just frozen poultry – a fluid loss limit is an indirect way of measuring water uptake in frozen poultry only; and
- poultry processors are already legally obligated to minimise water uptake during the processing of poultry under the Standard 1.3.3 (Processing Aids) – if this does not occur, the water used is considered an ingredient and must be declared in accordance with Standard 1.2.4 (Labelling of Ingredients).

1. Introduction

Food Standards Australia New Zealand (FSANZ) is developing a Primary Production and Processing Standard for Poultry Meat (Proposal P282). Developing primary production and processing standards generally starts with an assessment of the level of risk associated with particular activities. Our approach then seeks to identify and analyse the various alternative measures available to manage that risk. This requires a detailed assessment of the level to which food safety risks require some form of government (or other) intervention and of the potential impacts (costs and benefits) on the sector affected. When developing measures to address levels of risk, FSANZ canvasses options and consult widely to ensure that only the essential (minimum effective) requirements are incorporated into the standard.

To assist and advise in the process, FSANZ established a standard development committee consisting of representatives from industry, consumers, research organizations, and jurisdictions. This Draft Assessment Report comprises the second step in the standard development process and has been developed with input from the Standard Development Committee, the submissions received on the Initial Assessment Report and targeted consultations with industry members and government agencies. It is also consistent with the *Australia and New Zealand Food Regulation Ministerial Council Overarching Policy Guideline on Primary Production and Processing Standards*.

A scientific assessment of the risk to public health and safety from the consumption of poultry meat products has been completed to inform the development of risk management measures. This assessment was undertaken in the context of the current food safety management practices in the poultry meat industry. The purpose of this report is to propose risk management options based on the scientific assessment and an assessment of the economic, social and political risks. The risk management strategies have been developed in consultation with the industry, jurisdictions and consumers including the standard development committee.

Prior to outlining these risk management options, the report will give a brief overview of the poultry meat industry, the current food safety management strategies in place, and the findings of the risk assessment.

FSANZ welcomes and encourages stakeholder input on the proposed risk management options. The comments, information and data provided during this consultation will be considered during the development of the Final Assessment Report.

2. Background

2.1 Overview of the poultry meat industry²

The poultry meat industry accounts for approximately 10% of the gross value of Australia's total livestock production³ and encompasses a variety of species, such as chickens, turkeys, ducks, quail, squab (pigeons), geese, pheasants, guinea fowl and other farmed avian species.

² Further detail of the poultry meat industry can be found in the Initial Assessment Report which is available on the FSANZ website (<http://www.foodstandards.gov.au/>).

³ Australian Bureau of Statistics (ABS). 7503.0 Value of Agricultural Commodities Produced, Australia 2001-2002.

In this publication 'livestock' encompasses cattle, calves, sheep, lambs, pigs and poultry.

The chicken meat sector is the largest sector of the poultry meat industry, processing approximately 25-fold higher numbers of live birds and having 9 to 10-fold higher total retail value when compared to the non-chicken poultry meat sectors.⁴ The turkey and duck sectors are the largest of the non-chicken poultry industry comprising 70% and 21% respectively.⁵

It is estimated that 36 kg of chicken meat and chicken meat products are consumed in Australia per capita per annum.⁶ In comparison, per capita consumption of turkey and duck in Australia is estimated at 1.6 kg and 0.5 kg per annum, respectively.⁷

Up to 70% by weight of a live bird is recovered for human consumption. Of the products produced, 80% are sold raw (as fresh or frozen whole bird or pieces), with the remainder as ready-to-cook or fully cooked value-added products.

2.2 Overview of the poultry meat supply chain⁸

The structure and activities of the poultry meat supply chain can be divided into four stages: primary production, processing, retail and consumer.

Primary production includes all steps from the importation of fertilised eggs to the transport of live birds to the slaughter facility. The steps in the primary production of meat poultry are shown diagrammatically in Figure 1. Differences in primary production between chicken meat and other poultry meat species are often observed in the type of housing/facilities used, composition of feed and age at which the birds are slaughtered.⁹ There are also different requirements for the importation of fertile eggs, with only chicken, duck and turkey eggs permitted to be imported into Australia.

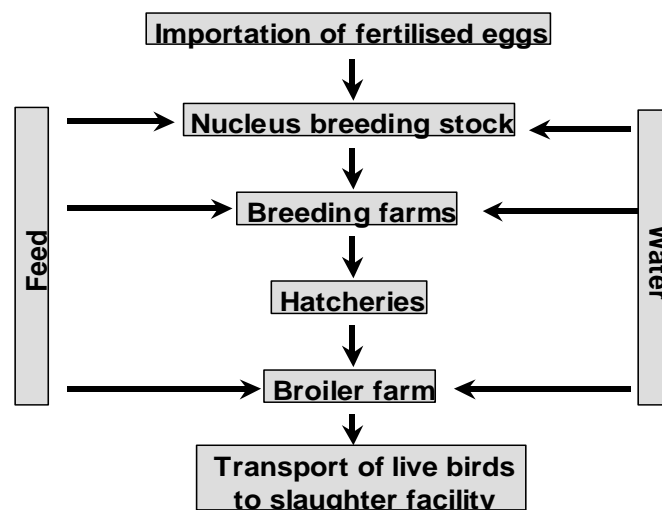


Figure 1: Stages in the primary production of meat poultry

⁴ Data were obtained from the poultry meat industry.

⁵ Leech, A., Shannon, P., Kent, P., Runge, G., Warfield, B. (2003) Opportunities for Exporting Game Birds. Rural Industries Research and Development Corporation (RIRDC). Report Number 03/106.

⁶ Australian Bureau of Agricultural and Resource Economics, *Australian Commodity Statistics 2003*.

⁷ QDPI National Capability Survey 2002, Industry committee, RIRDC Game Bird Project.

⁸ Further detail of the poultry meat supply chain can be found in the Initial Assessment Report which is available on the FSANZ website (<http://www.foodstandards.gov.au/>).

⁹ A summary of processes involved in the production of a number of different non-chicken poultry species is included in a report from the RIRDC Report Number 03/023.

Processing includes all steps from slaughter of live birds to the transport of poultry meat products to retail establishments. Poultry meat processing facilities vary in size between highly automated large, chicken processing facilities processing 4000 – 9000 birds per hour and smaller, largely manual or semi-automated facilities processing less than 1000 birds per day. The major steps in the processing of poultry are shown in Figure 2.

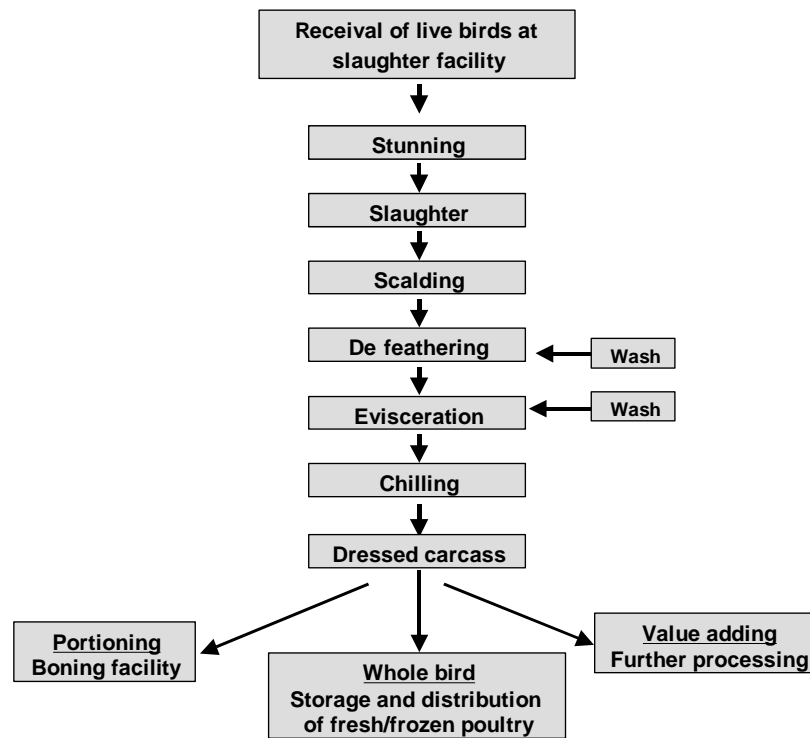


Figure 2: Stages in the processing of meat poultry

Increasingly, dressed poultry carcasses undergo further processing through portioning and value-adding which may occur on-site at the initial processing facility (especially in larger operations), or be sent to either separate, privately owned processing facilities, or retail establishments.

Retail includes restaurants, supermarkets, take-away food outlets, and other businesses that sell poultry meat products to the public.

The consumer stage of the poultry meat supply chain includes the handling and food preparation practices in the home. It also includes the transport of poultry meat and poultry meat products from the point of sale to the home.

2.3 Current food safety management strategies in the poultry meat industry

The safety of poultry meat and poultry meat products in Australia is controlled through a variety of regulatory and non-regulatory food safety management strategies which are described briefly in Attachment 2.¹⁰

¹⁰ Details of the current regulatory and non-regulatory food safety management strategies have been described in detail in the Initial Assessment Report¹⁰

Current regulation of the poultry meat industry at the farm level of the primary production phase or poultry farm level is predominately concerned with animal disease control, animal welfare and environmental issues (air, water, soil, noise pollution). In addition to existing government regulations, the poultry meat industry has self-regulatory schemes in place that rely on voluntary compliance with codes of practice and industry preferred standards. Strategies that exist at the poultry farm level which could impact on food safety include:

- regulations for the importation of fertilised eggs and for the registration, sale and use of pesticides and veterinary medicines; and
- regulations and non-regulatory codes of practice and guidelines for poultry feed (general stock feed requirements), poultry farming practices (including the layout and construction of farms), biosecurity, animal health and welfare and the transportation of live poultry.

The implementation of, and extent of compliance with these strategies varies depending of whether it is a legislative requirement or voluntary scheme and depending on the State or Territory.

Current State and Territory poultry meat regulation specific to food safety covers the slaughter, further processing, transport, and retail (including food service) of poultry meat products.

Food safety issues at retail establishments is covered by the Food Safety Standards in Chapter 3 of the Code which specifies the process control requirements to be satisfied at each step of the food handling process.

3. Objective

The objective of the Standard for Poultry Meat is to cost effectively address the risk to public health and safety associated with the consumption of poultry meat and poultry meat products, in accordance with FSANZ's statutory obligations as set out in section 10(1) of the FSANZ Act:

- the protection of public health and safety;
- the provision of adequate information relating to food to enable consumers to make informed choices; and
- the prevention of misleading or deceptive conduct.

In developing and varying standards, FSANZ must also have regard to:

- the need for standards to be based on risk analysis using the best available scientific evidence;
- the promotion of consistency between domestic and international food standards;
- the desirability of an efficient and internationally competitive food industry;
- the promotion of fair trading in food; and
- any written policy guidelines formulated by the Ministerial Council.

In addition, the Standard for Poultry Meat will aim to:

- complement existing food safety management strategies to ensure complete coverage of the poultry meat supply chain;
- be based on a comprehensive scientific risk analysis, using the best available scientific evidence;
- be outcome-based and minimal effective regulation;
- be nationally consistent thereby facilitating fair-trading in poultry meat and poultry meat products between States and Territories;
- promote consumer confidence in an industry that is already highly regarded;
- have the overall system costs commensurate with the assessed level of risk associated with the poultry meat industry and commensurate with the benefit to the poultry meat industry;
- be consistent with internationally recognised poultry meat standards and internationally recognised principles of food safety;
- encourage collaborative action among enforcement agencies to optimise the use of resources and to optimise the effectiveness of food safety standards in the poultry meat industry; and
- to have regard to the relevant policy guidelines formulated by the Ministerial Council and notified to FSANZ, regarding primary production and processing Standards.

4. Scientific assessment

As part of the FSANZ standard development framework, an assessment, *Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia*, was undertaken in the context of the current regulatory and non-regulatory environment in the poultry meat industry and using international risk assessment protocols. The outputs of the scientific risk assessment were used to inform the development of risk management measures. In particular, the assessment work identified:

- the food safety risks in the poultry supply chain; and
- where these risks could best be managed in this chain.

The conclusions from the assessment were used to determine the gaps with the current management strategies in place, that is, where there are no or insufficient controls measures for an identified risk. Such gaps may be referred to as residual risk.

4.1 Scope of the assessment

The risk assessment determined:

- the extent of food safety risk associated with the consumption of poultry meat and poultry meat products in Australia; and
- the factors along the poultry meat supply chain that have the greatest impact on public health and safety.

The risk assessment examined food safety hazards across the entire poultry meat supply chain– from importation of fertilized eggs¹¹ through to consumption of poultry meat products.

¹¹ Only those fertilised eggs from chickens, ducks and turkeys are permitted to be imported into Australia.

The microbiological hazards considered included *Salmonella* and *Campylobacter* species, pathogenic *Escherichia coli*, *Staphylococcus aureus*, *Clostridium perfringens*, and *Listeria monocytogenes*. Chemical hazards considered were agricultural and veterinary chemicals, contaminants, food additives and processing aids.

The assessment considered the major avian species consumed in Australia– including chickens, ducks, turkeys, geese, pigeons, quail, pheasants and guinea fowls. Wild caught birds (e.g. magpie geese and mutton birds) where processed in a registered establishment were also considered. However, ratites (emus and ostriches) were not included in this assessment as, they are processed using different methods to those used for the other avian species considered and the vast majority are processed in export-registered premises which are heavily regulated. Ratites will be considered in a subsequent primary production and processing standard.

As chicken meat represents the majority of poultry consumed, the risk assessment was largely informed by chicken meat data. The majority of the Australian data used was obtained from members of the poultry standard development committee. The hazards associated with chicken meat and chicken meat products were assumed to be similar to those associated with products from other poultry species, unless contrary data was available. This assumption was supported by the poultry standard development committee.

4.2 Main findings of the assessment

4.2.2 Salmonella and Campylobacter

Salmonella and *Campylobacter* are two of the most commonly reported causes of food-borne illness in Australia. Symptoms generally consist of self-limiting gastroenteritis, sometimes requiring hospitalisation. In a small proportion of cases, infection can lead to more severe, long-term illness such as septicaemia, reactive arthritis or Guillain Barré syndrome.

Based on epidemiological data, results from raw carcase microbiological surveys and outputs from the probabilistic model, there is reasonable evidence to indicate poultry is the vehicle for a proportion of salmonellosis and campylobacteriosis cases in Australia, however, due to a lack of quantitative data it is not possible to estimate the extent to which this is the case.

The following is a description of factors along the primary production, primary processing and food service/consumer handling and preparation stages that impact on the likelihood of contamination.


4.2.2.1 On-farm (from nucleus breeding stock to processing)

Contamination of poultry by *Salmonella* and *Campylobacter* on-farm is multifactorial and there are no data on the relative importance of one factor compared with another. Because of this, it was not possible to estimate the risk associated with various on-farm practices quantitatively. The report summarises current knowledge on practices that impact on contamination on-farm and highlights the differences between *Salmonella* and *Campylobacter* transmission at the primary production level.

There are a number of pathways by which poultry can become contaminated with *Salmonella* or *Campylobacter*. Some are more likely for one organism than for the other.

Contamination of birds by *Salmonella* on-farm can usually be traced to one or more of three factors: contaminated feed; environmental sources; and/or vertical transmission from contaminated eggs. For *Campylobacter*, age of the birds and environmental contamination are the most important risk factors on-farm.

Based on domestic and international data, the major risk factors and their relative importance for *Salmonella* and *Campylobacter* contamination on-farm are shown in the following table. Significant variability and uncertainty is associated with the transmission of *Salmonella* and *Campylobacter* on-farm and the list should not be considered exhaustive nor the importance of each factor absolute.

Risk Factor					
Biosecurity ¹²					<i>Salmonella</i>
					<i>Campylobacter</i>
Vertical transmission from breeder flocks	<i>Campylobacter</i>				<i>Salmonella</i>
Positive chicks	<i>Campylobacter</i>				<i>Salmonella</i>
Previously positive flocks		<i>Campylobacter</i>			<i>Salmonella</i>
Litter/Insects		<i>Campylobacter</i>	<i>Salmonella</i>		
Contaminated Feed	<i>Campylobacter</i>				<i>Salmonella</i>
Age of birds		<i>Salmonella</i>			<i>Campylobacter</i>

4.2.2.2 Processing (from arrival at processing plant to poultry meat ready for distribution)

The contamination of poultry meat is very much dependent on the status of the birds prior to slaughter and on operational hygiene during poultry meat processing. Processing converts live birds into meat and in doing so exposes the meat to contamination from the outside of the bird, the intestinal contents of the bird and the processing environment.

Processing can be divided into a number of stages. Published studies on the effect of these stages on both the level and prevalence of *Salmonella* and *Campylobacter* on chicken carcasses are often conflicting, indicating a large amount of variability associated with each process. The following table highlights the typical effect of processing factors on the numbers of *Salmonella* and *Campylobacter* on chicken carcasses. It is recognised that individual plants or companies may perform these tasks differently and to different levels of hygiene.

¹² Threats to biosecurity includes factors such as partial depopulation, other animals/birds, personnel, proximity to other poultry sheds etc.

Process stage	Effect on contamination by <i>Salmonella</i> and <i>Campylobacter</i>		
	Reduce	Minimal	Increase
Stun/Kill		<i>Salmonella</i> <i>Campylobacter</i>	
Scald - Low temperature	<i>Campylobacter</i>		<i>Salmonella</i>
Scald - High temperature	<i>Salmonella</i> <i>Campylobacter</i>		
De-feathering			<i>Salmonella</i> <i>Campylobacter</i>
Washing	<i>Salmonella</i> <i>Campylobacter</i>		
Evisceration			<i>Salmonella</i> <i>Campylobacter</i>
Washing	<i>Salmonella</i> <i>Campylobacter</i>		
Chilling – immersion		<i>Campylobacter</i>	<i>Salmonella</i>
Chilling – air ¹³		<i>Salmonella</i> <i>Campylobacter</i>	
Portioning		<i>Campylobacter</i>	<i>Salmonella</i>

Generally, there is a tendency for the numbers of contaminated birds to increase during transport from farm to processing plants. The levels of *Salmonella* and *Campylobacter* on poultry carcasses generally fall during processing, although prevalence (i.e. proportion of contaminated birds) tends to increase, especially after evisceration. Chilling, under effective operation, usually results in a decrease in both numbers and prevalence. Although air chilling has been reported to reduce levels of *Campylobacter* contamination on carcasses, the extent of this is considered low.

4.2.2.3 Handling, preparation and consumption of poultry meat – a quantitative assessment

Available evidence indicates hygienic handling and proper preparation of poultry meat (either at home or food service) play a significant role in reducing the risk of food-borne illness associated with *Salmonella* and *Campylobacter* spp. This part of the risk assessment incorporates a quantitative model and was largely based on work undertaken by the FAO/WHO. Each module in the model deals with one or a set of specific factors that affect the levels and prevalence of *Salmonella* and *Campylobacter*. Parameters used in the model were based on published literature and/or data from government and industry surveys. An Excel™ based program (@Risk, Palisade Corporation) was used to model the handling and preparation of poultry meat as well as the uncertainty and variability associated with the various model inputs. Uncertainty and variability were modelled using probability distributions.

The model considered factors such as:

- the prevalence and levels of contamination at the end of processing;
- the effect of freezing on the levels of *Salmonella* and *Campylobacter*;
- growth of *Salmonella* during transport and storage (retail as well as home storage) of fresh chicken meat (no growth was assumed for *Campylobacter*);

¹³ There is evidence to suggest that prevalence of *Salmonella* and *Campylobacter* post air-chill is significantly lower than that post immersion-chilling (Sánchez et al., 2002).

- possible cross contamination during preparation of foods;
- reduction due to cooking; and
- the probability of illness from the consumption of contaminated poultry meat.

The output of the mathematical model simulating poultry meat transportation, storage and handling, is an estimate for the likely number of salmonellosis and campylobacteriosis cases resulting from consumption of poultry meat in Australia. The relevance of the risk estimate depends on (1) the extent to which the model represents precisely the practices in the various stages of poultry meat processing, handling and preparation, and (2) the availability of suitable and accurate data.

Due to a lack of both suitable and accurate Australian data across the entire model pathway, it is of little value in scientific terms to present final risk estimates in this document. More relevant to this risk assessment, however, is the impact on the estimated number of salmonellosis and campylobacteriosis cases by changing various model inputs.

A sensitivity analysis of the model inputs indicates that the probability of illness due to *Salmonella* contamination of poultry meat was most sensitive to the level and prevalence of the organism on the carcass at the end of processing, and its growth during distribution and storage. Improper thawing was also a significant factor. Cross-contamination and inadequate cooking were positively correlated with increased likelihood of illness.

For *Campylobacter*, the probability of illness was influenced by its level and prevalence at the end of processing and cross-contamination during preparation, e.g. not washing hands after handling raw poultry or using contaminated cutting boards to prepare other foods. Cooking adequacy was also influential on the final probability of illness.

The level and prevalence of both *Salmonella* and *Campylobacter* on carcasses at the end of processing had a large influence on the estimated number of illness. Based on the model, a ten-fold reduction in the level of contamination of *Salmonella* and *Campylobacter* at the end of processing resulted in a 74% and 93% reduction in the number of predicted cases of illness respectively. For both organisms there was a linear relationship between the prevalence at the end of processing and the final number of illness. In other words, halving the prevalence could halve the estimated number of illnesses. Halving the level of cross-contamination during preparation resulted in an 18% and 27% reduction in the estimated number of illnesses, respectively. Other scenarios were modelled, and the results are given in the body of the assessment.

4.2.3 Other microbial pathogens

According to available data, there are no significant public health and safety risks resulting from pathogenic *E. coli* in poultry or poultry meat products in Australia. Although human pathogenic strains such as enterohaemorrhagic *E. coli* (EHEC) have infrequently been isolated from poultry internationally, there has been no documented case of food-borne illness due to *E. coli* associated with consumption of poultry meat in Australia.

The public health and safety risk due to *S. aureus* in poultry or poultry meat products is of minor significance. Although food-borne illness from ingestion of staphylococcal enterotoxin associated with the consumption of poultry meat has been documented, it is almost always due to contamination through post-processing handling.

Illness resulting from consumption of cooked poultry meat contaminated by *S. aureus* presents a risk due to the inactivation of competing microorganisms during cooking. Time and temperature abuse could allow growth of *S. aureus* that subsequently produce enterotoxin.

Although food-borne illness from consumption of *C. perfringens* contaminated poultry dishes has been documented, the public health and safety risk due to *C. perfringens* in poultry is of minor significance. Poultry meat can be contaminated with *C. perfringens* at the end of processing, however the levels are typically low, and significant temperature abuse and mishandling are required to allow growth of the pathogen to levels sufficient to cause illness. These risk factors occur primarily in the retail, foodservice/catering and home sectors, rather than the production and processing environments.

L. monocytogenes is often present on raw poultry meat but is rarely cited as cause of food-borne illness following poultry meat consumption. There is little evidence that multiplication of *L. monocytogenes* on raw poultry meat during storage is a major risk factor in human Listeriosis. *L. monocytogenes* is primarily a concern for ready-to-eat poultry meat products, particularly for susceptible populations. Contamination of ready-to-eat poultry meat may be as a result of inadequate heat treatment (i.e. cooking) or occur post processing, either directly from the processing environment or via cross-contamination at retail (e.g. sliced ready-to-eat meats). In the absence of competition with normal flora usually associated with raw poultry the organism can multiply, even when stored at <4°C.

4.2.4 Chemical hazards

Regulations that control the use of chemicals in poultry meat and protect public health and safety are outlined in the general standards applicable to all food in Chapter 1 of the *Australia New Zealand Food Standards Code* (the Code). There are six Standards in Chapter 1 of the Code that regulate chemical inputs that are relevant to poultry meat products (Standard 1.3.1 – Food Additives; Standard 1.3.3 – Processing Aids; Standard 1.3.4 – Identity and Purity; Standard 1.4.1 – Contaminants and Natural Toxicants; Standard 1.4.2 – Maximum Residue Limits; and Standard 1.4.3 – Articles and Materials in Contact with Food).

Given the data available for this review of chemical hazards in poultry and poultry meat products, the current regulatory measures outlined in the Code adequately protect public health and safety with respect to chemical hazards in poultry meat products in Australia. Data gaps relevant to the review of chemical hazards in poultry and poultry meat products have been identified.

4.2.4.1 Agricultural and veterinary chemicals

Standard 1.4.2 – Maximum Residue Limits of the Code lists the maximum permissible limits for agricultural and pesticide chemical residues present in food. Contemporary survey results from the National Residue Survey (NRS) and Australian Total Diet Survey (ATDS) indicate that there is a high level of industry compliance with agricultural and veterinary chemical maximum residue limits (MRLs) in poultry meat products. These results indicate that dietary exposure to agricultural and veterinary chemicals through poultry meat products presents a negligible risk to the consumer.

Notwithstanding the results, there are concerns surrounding the adequacy of the agricultural and veterinary chemical testing regime particularly relating to the NRS. In 2002-2003 the NRS tested 165 chickens out of a yearly kill in excess of 400 million. Non-chicken poultry species were not tested. All tests were conducted on liver samples. Only five birds were tested for anticoccidials. Of specific concern was the breach of the MRL associated with the anticoccidial lasalocid. This data indicates either there was a sporadic breach associated with the use of the anticoccidial lasalocid or alternatively high-level breaches of MRLs associated with anticoccidials.

4.2.4.2 Contaminants

As part of the review of chemical hazards in poultry meat products, eleven contaminants with the potential to contaminate poultry meat were reviewed. FSANZ regulates the presence of contaminants in food through Standard 1.4.1 – Contaminants and Natural Toxicants. Two of the eleven contaminants reviewed (lead and polychlorinated biphenyls) have maximum limits (MLs) included in the Standard. Overall, none of the contaminants investigated demonstrated an immediate public health and safety concern in relation to poultry meat products, however further investigation may be needed on the following contaminants:

- Arsenic – consistent presence of arsenic residues in poultry tissue and the absence of a permission for the anticoccidial roxarsone (4-hydroxy-3-nitrophenyl arsonic acid) in the Code;
- Fluoride – reported high levels of fluoride in mechanically separated poultry at levels sufficient to contribute to an increased risk of dental fluorosis when combined with other sources of fluoride;
- Lead – reported high levels of lead in wild-caught birds, specifically the Magpie Goose (*Anseranas semipalmata*) harvested in the Northern Territory by local Aboriginal peoples. The use of lead shot will be phased out by 2005 in Northern Territory wetlands;
- Mercury – reported high levels of mercury in piscivorous waterfowl. There is currently an absence of data on mercury levels in mutton birds (*Puffinus tenuriostriis*) to characterise the risk associated with consumption of this species.

The presence of dioxins and dioxin-like polychlorinated biphenyls were reviewed as part of the review of chemical hazards in poultry due to data made available through the National Dioxins Program. The NRS provided data on 15 poultry meat samples and FSANZ on 11 poultry breasts. Though the data showed the dioxin dietary contribution from poultry meat to be low, the degree of testing is not sufficient to detect incidents of sporadic dioxin contamination in poultry in Australia.

Mycotoxins (aflatoxins, trichothecene toxins, zearalenone, ochratoxin A and fumonisin B₁) were reviewed for their potential to contaminate poultry meat products via contaminated feeds. Though data on the carry-over of mycotoxins into poultry tissue is relatively scarce, the data consistently demonstrated low-levels of mycotoxin carry-over, insufficient to contribute substantially to total human dietary intake of these constituents.

4.2.4.3 Food Additives

FSANZ regulates food additives through Standard 1.3.1 – Food Additives. The Standard, through Schedule 1, specifies permitted uses of food additives by food type for meat and meat type products (including poultry). The permissions for meat and meat type products relate mainly to preservative and colouring functions. There is a lack of data pertaining to the monitoring of food additives in poultry meat products.

4.2.4.4 Processing Aids

FSANZ regulates processing aids through Standard 1.3.3 – Processing Aids. The Standard is currently under review (Proposal P276 Review of Enzyme Processing Aids and Proposal P277 – Review of Processing Aids (other than enzymes)). The review will address the safety of currently permitted processing aids; remove any obsolete processing aids; and correct errors, remove anomalies and improve consistencies within the Code. It is not anticipated that the structure of Standard 1.3.3 – Processing Aids - will be changed.

The review of Standard 1.3.3 might result in changes which could be relevant for the proposed Poultry Meat Primary Production Standard, and this needs to be taken into consideration when the review has been finalised.

4.2.4.5 Packaging

FSANZ regulates food contact uses of primary packaging materials through Standard 1.4.3 – Articles and Materials in Contact with Food. The Standard regulates food contact materials in general terms. The Standard does not specify individual packaging materials for food contact or how they are produced or used. FSANZ does not directly monitor for the migration of chemicals from packaging materials into food and as such the review is unable to characterise the risk associated with packaging materials in poultry meat products.

5. Risk Management (determination of residual risk)

Based on the available evidence, the scientific assessment concluded that chemical hazards from poultry meat and poultry meat products produced and processed under current food safety management strategies represent little risk to consumers. In addition, the probability of food-borne illness associated with pathogenic *E. coli*, *S. aureus*, *C. perfringens* and *L. monocytogenes* contamination of raw poultry meat and poultry meat products is also low. However, a potential food safety risk was identified for *Salmonella* and *Campylobacter* from consumption of poultry meat.

For each hazard considered within the scientific assessment, the table below identifies where there is a residual risk to public health and safety, having regard to the current management strategies in place to address these hazards. A ‘residual risk’ is considered to be present when the current management strategies in place either do not address the identified hazard or do not adequately address this hazard.

Table 1: Identification of a residual risk from hazards examined in the risk assessment.

Hazard	Current food safety management strategy addressing hazard	Is there a residual public health and safety risk?
Microbiological Hazards	<p><i>Salmonella</i> spp.</p> <p>Biosecurity and animal health requirements on-farm. No specific food safety requirements.</p> <p>State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail.</p> <p>Chapter 3 Food Safety Standards at retail.</p>	Yes
	<p><i>Campylobacter</i> spp.</p> <p>Biosecurity and animal health requirements on-farm. No specific food safety requirements.</p> <p>State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail.</p> <p>Chapter 3 Food Safety Standards at retail.</p>	Yes
	<p><i>Escherichia coli</i></p> <p>Biosecurity and animal health requirements on-farm. No specific food safety requirements.</p> <p>State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail.</p> <p>Chapter 3 Food Safety Standards at retail.</p>	<p style="text-align: center;">No</p> <p>Poultry meat is rarely implicated in exposure to pathogenic <i>E. coli</i>.</p>
	<p><i>Staphylococcus aureus</i></p> <p>Biosecurity and animal health requirements on-farm. No specific food safety requirements.</p> <p>State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail.</p> <p>Chapter 3 Food Safety Standards at retail.</p>	<p style="text-align: center;">No</p> <p>Generally a problem caused by poor processing and handling practices.</p>
	<p><i>Clostridium perfringens</i></p> <p>Biosecurity and animal health requirements on-farm. No specific food safety requirements.</p> <p>State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail.</p> <p>Chapter 3 Food Safety Standards at retail.</p>	<p style="text-align: center;">No</p> <p>Introduced on-farm but requires poor handling throughout the chain for human health problem.</p>
	<p><i>Listeria monocytogenes</i></p> <p>Biosecurity and animal health requirements on-farm. No specific food safety requirements.</p> <p>State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail.</p> <p>Chapter 3 Food Safety Standards at retail.</p>	<p style="text-align: center;">No</p> <p>Generally a problem caused by faults in the later stages of processing (i.e. cross contamination during slicing and/or packaging and general hygiene standards of the processing premises).</p>

Hazard	Current food safety management strategy addressing hazard	Is there a residual public health and safety risk?	
	<i>Arcobacter</i> spp.	Biosecurity and animal health requirements on-farm. No specific food safety requirements. State and Territory legislation generally requires HACCP plans from slaughter to backdoor of retail. Chapter 3 Food Safety Standards at retail.	No Limited data available.
Chemical Hazards	Agricultural and veterinary chemicals	APVMA register and control sale of these chemicals. APVMA and FSANZ set MRLs (Standard 1.4.2 of the Food Standards Code). State and Territories control use of these chemicals.	No Dietary exposure to these chemicals through poultry meat and poultry meat products poses a negligible risk to consumers.
	Contaminants	Food Standards Code Standard 1.4.1 – Contaminants and natural toxicants.	No However, contamination of mechanically separated poultry with finely powdered bone could increase the risk of mild dental fluorosis for children less than eight years of age when combined with other sources of fluoride exposure. This issue has been discussed with the poultry meat industry. Data on the levels of fluoride present in mechanically separated poultry products is severely lacking. There appears to be a consistent presence of arsenic in poultry tissue and no MRL set for arsenic in poultry meat products. This issue has been raised with the poultry meat industry and with the APVMA.
	Food additives	Standard 1.3.1 – Food additives.	No Limited data available.
	Processing aids	Standard 1.3.3 – Processing aids.	No Standard 1.3.3 is currently under review.
	Packaging	Standard 1.4.3 – Articles and materials in contact with food. Australian Standard for Plastic Materials for Food Contact Use (AS2070:1999).	No Limited data available.

From this table, it can be concluded that there is a residual risk present for *Salmonella* and *Campylobacter* in poultry meat, i.e. the current management strategies in place are considered to be inadequate to address these hazards.

The risk assessment identified a range of factors at the primary production, processing, retail and consumer stages that affect the prevalence and levels of contamination by *Salmonella* and *Campylobacter* on poultry and poultry meat products. The key findings for each stage of the poultry meat supply chain are summarized in the following sections alongside a discussion evaluating the current management strategies to determine the extent of the residual risk for each of these stages.

5.1 Primary production

The risk assessment identified the main sources for *Salmonella* contamination at the primary production or poultry farm stage being the environment (i.e. lack of appropriate control measures), contaminated feed and contaminated eggs (i.e. vertical transmission), whereas for *Campylobacter*, the main source for contamination at the primary production stage is from environmental sources.¹⁴ Transport of birds to the slaughter facility was also found to increase prevalence of *Campylobacter*.¹⁵

5.1.1 Contamination of eggs with *Salmonella*

There are strict quarantine requirements for the importation of eggs and the hatching of those eggs to form the nucleus breeding stock (see Attachment 4 for summary of the requirements). Due to the extent and comprehensiveness of these requirements, the importation of eggs and the hatching of those eggs to form the nucleus breeding stock are not considered to contribute to the residual risk.

The sanitation of eggs and monitoring of disease at breeding farms and hatcheries reduces the potential for microbial contamination of chicks. However, it must be noted that there have been reports of *Salmonella* being detected at these facilities. It is expected that environmental sources of contamination is the main avenue of *Salmonella* introduction into these facilities and subsequently into eggs.

5.1.2 Contamination of poultry with *Salmonella* and *Campylobacter* from environmental sources

Environmental sources were found to be a significant route for both *Salmonella* and *Campylobacter* introduction into breeding farms, hatcheries and broiler farms. The measures in place at these facilities to control the residual risk due to environmental sources are contained in voluntary industry codes of practice and guidelines: there are no regulations requiring farms to implement or comply with these measures.

These measures alone do not seem to be effective in reducing the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* spp. This may be because there is not sufficient market incentive for poultry farmers to implement the controls necessary to lower the likelihood of poultry being infected with these pathogens – the yield of poultry infected with these pathogens not being greatly affected, particularly with respect to *Campylobacter*.

¹⁴ The risk assessment also identified the age of birds prior to slaughter as being a risk factor for contamination with *Campylobacter* spp.. However, this is considered to be due to a greater chance that *Campylobacter* spp. will be introduced from the environment.

¹⁵ The bird stress associated with transport would be likely to increase the shedding and growth of all microorganisms and not just *Campylobacter*. However, this type of data was not available.

This is a gap in the current food safety management strategies in place in the poultry meat industry, which is considered to contribute significantly to the residual risk.

One example of a voluntary industry code of practice is the National Biosecurity Manual for Contract Meat Chicken Farming, which covers facility, personnel and operational standards. This manual also has record-keeping templates for some farm practices. However, there is no information on the extent and effectiveness of the implementation of this and other codes of practice or guidelines, by industry. In addition, these codes of practices and guidelines were developed for animal health reasons and, although they may contribute to addressing food safety, were not designed with food safety as a focus.

In conclusion, the lack of enforceable national industry codes of practice is considered to contribute to the residual risk of poultry flocks becoming contaminated with *Salmonella* spp. or *Campylobacter* spp. at the primary production phase.

5.1.3 Contamination of feed with *Salmonella*

Feed was also identified as a potential source for *Salmonella* contamination of poultry flocks. Both meat meal and grains can be contaminated with *Salmonella* and the heat treatment applied when the feed is pelletised is not effective at lowering *Salmonella* to safe levels if contamination levels are high. There are currently no existing nationally consistent regulations to prevent *Salmonella* contaminated feed being used to feed poultry. However, there are two strategies in place that address feed. These are the *Australian Standard for Hygienic Rendering of Animal Products* (AS 5008:2001), and an industry run FeedSafe accreditation program.

The Australian Standard has been adopted as a regulatory measure in a few States and Territories and requires that all rendering plants test for *Salmonella* weekly. A rendering plant must take corrective action after four positive samples in a window are detected, however rendered products can still be used to produce the feed that is fed to poultry.

Feedmills operating under the industry-run FeedSafe accreditation program, which also requires sampling and testing of poultry feeds for *Salmonella*.

Although industry is monitoring this potential problem, the lack of measures to prevent *Salmonella*-contaminated feed¹⁶ being fed to poultry is considered to contribute to the residual risk and considered a gap in the food safety management strategies currently in place in the poultry meat industry.

5.1.4 Contamination of poultry with *Campylobacter* during transport

Transportation of live birds to slaughter facilities was found to potentially increase the contamination of live birds with *Campylobacter*. Transportation of live birds is currently regulated under State and Territory animal welfare legislation and associated industry codes of practice. The legislation is concerned with factors such as water and feed requirements, shelter, loading and unloading birds and inspections.

¹⁶ Feed can become contaminated at various stages – the raw ingredients being supplied to feed mills such as the meat meal and grains can be contaminated, additionally the processed feed can become contaminated after heat treatment and pelletising.

There is a requirement in the *Code of Practice for the Welfare of Animals- Land Transport of Poultry* that transport cages must be ‘thoroughly cleaned prior to use’. However, no further guidelines on how to achieve this requirement are provided and no outcome is stated.

Based on this information, the current food safety management strategies to address the transportation of live birds to slaughter facilities are not considered adequate to reduce the risk of birds becoming contaminated with *Salmonella* or *Campylobacter* spp.. This is a gap in the current food safety management strategies in place in the poultry meat industry.

5.2 Processing

The various State and Territory legislation requires that all poultry be processed (from slaughter to a finished product) under a comprehensive HACCP-based food safety program. Under such a program hazards are identified, evaluated and, if significant for food safety, controlled.

Various steps, in particular the scalding, defeathering, evisceration and chilling steps, in the processing of poultry and poultry meat products were identified in the risk assessment to impact on the prevalence and levels of *Salmonella* and/or *Campylobacter* spp.. It is expected that these steps are already monitored and controlled through the HACCP systems already in place in the processing sector.

These existing requirements address the risk at the processing stage. The processing stage does not contribute to the residual risk provided the HACCP program is effectively implemented and complied with.

5.3 Retail

Table 3 lists the factors identified in the risk assessment that impact on *Salmonella* and *Campylobacter* contamination at retail and the existing requirements in the Code that address this risk. The existing requirements in the Code are considered adequate to address the risk at the retail level and ensure this stage does not contribute to the residual risk.

Table 2: The requirements in the Code that address the residual risk at the retail level

Risk factor	Requirement in the Code
The level and prevalence of these microbiological organisms entering retail establishments	<p>The Code requires a food business to take all practicable measures to ensure that only food that is safe and suitable is received. However, a food business is limited as to what it can do on a practical basis when receiving potentially hazardous food (which includes all products containing raw and cooked meat). A business can really only check the food is protected from the likelihood of contamination and check that it is under appropriate temperature control.</p> <p>However, after receipt the food business will be able to assess the safety and suitability of the food. The food business must take all practicable measures to use only food that is safe and suitable. Safe and suitable food is food that will not cause illness or physical harm to a person eating it, provided that the food is used as it is intended to be used, and has not deteriorated, perished or contains a substance foreign to the nature of the food.</p>

Risk factor	Requirement in the Code
Conditions in which poultry meat and poultry meat products are distributed and stored at retail	The food storage clause lists the temperature requirements for potentially hazardous foods. There are similar temperature requirements for the distribution (transport) of food products. Product must also be protected from the likelihood of contamination during storage and distribution.
Improper thawing of frozen product	The Code requires the time that potentially hazardous food is kept at temperatures that support the growth of microbiological organisms when being thawed to be minimised. Frozen food must remain frozen.
Cross-contamination due to lack of hygienic handling during preparation	The Code sets out a number of requirements for the hygienic handling of food products. These include requirements for: <ul style="list-style-type: none"> • food handlers to take all reasonable measures not to compromise the safety and suitability of food; • food handlers to notify the business if he/she suspects he/she may have or could potentially (due to health) contaminate the food; • hygiene practices that minimises the contamination of the food; and • food businesses to have appropriate facilities to enable hygienic food handling practices.
Inadequate cooking of product	There are no specific requirements for cooking food products. However, a food business must ensure that if a food is to be cooked then the cooking step must be adequate to achieve a safe product (i.e. thoroughly cooked).

5.4 Consumer

The handling and preparation of poultry meat at the consumer stages of the poultry meat supply chain also have a significant impact on the risk of food-borne illness due to the consumption of poultry meat and poultry meat products. The main factors identified in the risk assessment that impact on contamination at the consumer level are:

- the level and prevalence of *Salmonella* or *Campylobacter* spp. on poultry meat products entering the consumers' home;
- conditions in which poultry meat and poultry meat products are distributed and stored at retail and in the home;
- improper thawing of frozen product;
- cross-contamination due to lack of hygienic handling during food preparation; and
- inadequate cooking of product.

If consumers handled and cooked poultry correctly, the residual risk from the primary production, processing and retail stages from raw poultry would be managed. However, as there are still cases of food-borne illness associated with consumption of poultry meat and poultry meat products in the home,¹⁷ it suggests that consumers are not able to fully manage the risks associated with poultry contaminated with *Salmonella* and *Campylobacter*.

¹⁷ In an, as yet, unpublished report by OzFoodNet, food-borne disease outbreaks associated with chicken meat and eggs between 2001-4¹⁷ are discussed (Kirk et al, 2005). Of the 52 chicken-associated outbreaks reported, in ten percent of these outbreaks, the food was prepared in a private residence. This indicates that unsafe practices are still occurring in the home, in respect to the handling of poultry.

Modelling within the scientific assessment clearly showed that reducing the level and/or prevalence of *Salmonella* and *Campylobacter* on poultry meat would result in a significant reduction in food-borne illness.

However, as the other stages of the poultry meat supply chain cannot completely eliminate all contamination of poultry from *Salmonella* and *Campylobacter*, it is important to reinforce to consumers the importance of handling and cooking poultry correctly.

The food safety management strategies for the consumer of poultry meat and poultry meat products are primarily education and information dissemination. These strategies are delivered through industry, governments, or non-specific consumer forums (i.e. associations, television programs, magazine articles etc) however are generally not specific for poultry meat and poultry meat products. The main messages conveyed to consumers are variations on the following six themes:

1. keep hot food steaming hot;
2. keep cold food refrigerated;
3. cook food properly;
4. separate raw and cooked foods;
5. keep kitchen and utensils clean; and
6. wash hands with soap and dry thoroughly.

Evidence from a recent consumer survey on poultry meat handling practices in the home undertaken for FSANZ suggests that most consumers report to be adhering to these practices (CRC, 2005). However, as food-borne illness in the home continues to occur, it is unclear to what extent these practices are actually applied.

The consumer stage is therefore considered to contribute to the residual risk.

5.5 Regulatory problem

The scientific assessment identified a potential food safety risk from *Salmonella* and *Campylobacter* from consumption of poultry meat. Table 5 lists the conclusion on the adequacy of current food safety management strategies to address the risk from these pathogens. In summary, the residual risk of *Salmonella* and *Campylobacter* contamination of poultry and poultry meat products is due to gaps in the current food safety management strategies at the primary production (breeding farms to the transport of birds to slaughter facilities) and consumer stages of the poultry meat supply chain. In contrast, the primary production stage prior to breeding farms, and the processing and retail stages do not significantly contribute to the residual risk, provided the current management systems in place are implemented correctly and enforced.

Where gaps risks are identified there may be a number of options may be proposed to control those risks. These options will be discussed the following section. The management options discuss strategies to address the identified residual risk within the scope of the FSANZ Act. There may also be other strategies that can be used to address the residual risk. For example, with respect to feed, the Meat Standards Committee and the Department of Agriculture, Fisheries and Forestry are already working on initiatives to improve the quality of the feed being produced. These initiatives are:

- the current review of the Australian Standard for the hygienic rendering of animal products through the Meat Standards Committee; and
- the Department of Agriculture, Fisheries and Forestry framework for updating control of animal feeds in Australia. The scope of this review would allow Salmonella in protein meals to be examined. FSANZ will contribute to this process, which will lead to a new national standard for animal feeds being developed.

Table 3: Adequacy of the current food safety management strategies to control the risk factors identified in the assessment of the risk to public health and safety

Identified risk factor	Current food safety management strategy to address risk	Perceived gaps in the current food safety management strategy
Primary Production		
Contamination of eggs with <i>Salmonella</i>	<ul style="list-style-type: none"> – Stringent quarantine requirements for importation – Comprehensive biosecurity requirements at import quarantine facilities – Disease monitoring and testing for <i>Salmonella</i> at import quarantine facilities – Egg sanitation protocols at breeding farms – Voluntary biosecurity requirements 	<p>Arrangements for imported eggs and quarantine facilities are considered adequate</p> <p>There is no national regulatory requirement for breeding farms, hatcheries and broiler farms to specifically address issues relating to food safety.</p>
Contamination of poultry with <i>Salmonella</i> and <i>Campylobacter</i> from Environmental Sources	<ul style="list-style-type: none"> – Voluntary biosecurity requirements – Requirements demanded by chicken meat processors – Animal welfare legislation 	<p>There is no national regulatory requirement for breeding farms, hatcheries and broiler farms to specifically address issues relating to food safety.</p>
Contamination of feed with <i>Salmonella</i>	<ul style="list-style-type: none"> – State and Territory legislation – Voluntary industry codes of practice 	<p>There is inconsistent regulation of feed (particularly raw materials) and no regulatory requirement for minimum <i>Salmonella</i> level.</p>
Contamination of poultry with <i>Campylobacter</i> during transport	<ul style="list-style-type: none"> – Requirements demanded by chicken meat processors – Animal welfare legislation – Voluntary codes of practice 	<p>There is no national regulatory requirement to specifically address issues relating to food safety. The main focus in transport is on animal welfare.</p>
Processing		
Contamination of poultry meat with <i>Salmonella</i> and <i>Campylobacter</i>	<ul style="list-style-type: none"> – State and Territory legislation requiring a HACCP- based food safety management system from slaughter to back door of retail. 	<p>Current food safety management strategies are considered adequate, provided these strategies are effectively implemented and enforced.</p>

Identified risk factor	Current food safety management strategy to address risk	Perceived gaps in the current food safety management strategy
Retail		
Contamination of poultry meat with <i>Salmonella</i> and <i>Campylobacter</i>	– Food Safety Standards in the Food Standards Code	Current food safety management strategies are considered adequate, provided these strategies are effectively implemented and enforced.
Consumer		
Contamination of poultry meat with <i>Salmonella</i> and <i>Campylobacter</i>	– Promotion of food safety	Consumers have significant impact on the safety of meals prepared using poultry meat but appear not to be using safe and hygienic food handling and preparation practices.

6. Risk management options

Section 6 of this Report discusses the residual risk for each stage of the poultry meat supply chain, that is, primary production, processing, retail and consumer and concludes that there are gaps in the current management strategies to address this residual risk.

Various measures, both regulatory (standards) and non-regulatory (codes of practice, guidelines), can be used to address food safety risks. The decision as to what risk management measures are proposed takes into account the outcomes of the risk assessment process (what are the hazards and risks and where are they most effectively managed) and factors such as economic, social and technical feasibility.

Regulatory impact analysis is a critical part of the standards development process. Such an analysis must take into account the impacts on, and views of, all stakeholder groups affected by the proposed regulatory options – including industry, consumers, and governments. FSANZ must also ensure that the cost of the overall system is commensurate with the assessed level of risks and benefits. These issues are considered in this report and will be further considered in the development of the Final Assessment Report and will address the requirements of the guidelines provided by the Council of Australian Governments (COAG) (COAG, 2004). FSANZ must also ensure that the primary production and processing standard does not unnecessarily restrict trade and that it fulfils Australia's obligations to World Trade Organisation (WTO) agreements.

This section:

- analyses the risk management options for addressing the residual risk for the **primary production** stage of the poultry meat supply chain;
- discusses the need for a consistent national standard that brings together the regulatory arrangements in the States and Territories at the **processing** stage;
- states the importance of continuing to address the risks at the **retail** stage through application of Chapter 3 of the Food Standards Code; and
- discusses the need for **consumer** education to improve consumer handling practices in respect to poultry.

The development and discussion of the risk management options have been informed by:

- the evaluation of the food safety management strategies currently in place in the poultry meat industry;
- the outcomes of the Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia (the risk assessment);
- discussions with the Standard Development Committee and with other stakeholders, including the comments received in the submissions from the Initial Assessment Report; and
- an assessment of the regulatory impact.

FSANZ also commissioned Colmar Brunton Social Research to undertake research on the knowledge and awareness of safe food handling of poultry meat within the poultry meat industry, enforcement officers and consumers. The findings from this benchmark research have been used in the development and discussion of the risk management options.

6.1 Primary production

The risk assessment identified breeding farms, hatcheries, broiler farms and the transport of birds to slaughter facilities as significantly contributing to the residual risk of *Salmonella* and *Campylobacter* contamination of poultry. Four risk management options to address this residual risk are proposed and will be discussed in the following sections. The four options are:

1. maintain the *status quo*;
2. encourage compliance with a code-of-practice (non-regulatory approach);
3. require poultry growers to control food safety hazards and obligate poultry processors to ensure growers supplying them are meeting this requirement; and
4. require poultry growers to implement a documented HACCP based food safety management system.

6.1.1 Option 1 – *status quo*

In maintaining the *status quo*, there would be no regulatory requirements for breeding farms, hatcheries, broiler farms or poultry transport operators to address food safety. However, these businesses could choose to follow industry based codes and would also be subject to any requirements placed on them by poultry processors.¹⁸ These measures alone do not seem to be effective in reducing the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* spp. This may be because there is not sufficient market incentive for poultry farmers to implement the controls necessary to lower the likelihood of poultry being infected with these pathogens – the yield of poultry infected with these pathogens not being greatly affected, particularly with respect to *Campylobacter*.

Without additional incentive, such as regulatory requirements on the primary production sector, the maintenance of the *status quo* is not likely to reduce the residual risk identified in the risk assessment.¹⁹ This means the levels of live birds contaminated with *Salmonella* and *Campylobacter* being supplied to poultry processors would remain the same. This affects the processor's ability to control the levels of *Salmonella* and *Campylobacter* during processing. While, the retailer or consumer could address these hazards through adequate cooking and correct handling of poultry, the current illness and outbreak data indicates this does not always occur.

6.1.1.1 Regulatory impact – industry

There would be no new costs for industry for maintaining the *status quo*.

¹⁸ Processors require the farms to meet food safety obligations as part of their contract of supply and audit the farms to ensure they are meeting these obligations.

¹⁹ The Risk Assessment concluded that there is a residual risk to public health and safety of poultry meat being contaminated with either *Salmonella* or *Campylobacter* spp. and that measures to reduce the prevalence and levels of these microorganisms throughout the poultry meat supply chain, particularly during primary production and processing, will reduce the likelihood of salmonellosis and campylobacteriosis as a result of consuming contaminated poultry meat and poultry meat products.

6.1.1.2 Regulatory impact – government

There would be no new enforcement costs for government as there would be no government inspection of poultry farms. Enforcement officers would only enter poultry farms where it was suspected there were *Salmonella* positive flocks as a result of an outbreak investigation. Governments would continue to experience considerable costs in relation to the investigation of food-borne illness outbreaks.

6.1.1.3 Regulatory impact – consumers

The current levels of food-borne illness from *Salmonella* and *Campylobacter* contamination of poultry meat and poultry meat products and associated costs to consumers and society would continue. An (as yet) unpublished report from OzFoodNet on food-borne disease associated with chicken meat and eggs, indicates that there were 52 reported chicken associated outbreaks between 2000-4 affecting at least 860 people, with 88 people hospitalised and one death (Kirk et al, 2005). In 1999, the then, ANZFA estimated an average cost of each food-borne illness case at \$630 (ANZFA, 1999). This included both direct and indirect costs. Direct costs include those associated with medical care, loss of productivity, investigation of illness, loss of business and legal action. Indirect costs primarily include those associated with emotional loss. The Allen Consulting Group in its report on the costs and benefits of food safety management systems indicated that a range of literature suggests costs of between \$4 and \$6 million for the loss of life (The Allen Consulting Group, 2002).

6.1.1.4 Conclusion

The risk assessment concluded that the lack of food safety controls at the primary production stage contributes to the residual risk of food-borne illness due to the consumption of contaminated poultry meat and poultry meat products. As this option does not provide for any lowering of this residual risk, this option is not preferred. Enforcement officer access to poultry farms would be restricted to when there is a reasonable belief that unsafe practices are occurring, by which time contaminated poultry would have already been processed and consumed. While under this option there are no new costs for industry and government, the levels of food-borne illness from poultry contaminated with *Salmonella* and *Campylobacter* are likely to remain the same.

6.1.2 Option 2 – Code of practice – non-regulatory approach

Under this option, poultry farms would be encouraged to follow a code of practice that specifically addresses food safety issues at the primary production level. The food safety issues would need to cover those areas identified within the risk assessment as contributing to the residual risk which were:

- the lack of measures on-farm to minimise environmental contamination of poultry from *Salmonella* and *Campylobacter* (including breeding farms, hatcheries and broiler farms)²⁰;
- measures to minimise *Salmonella* contaminated feed being fed to poultry; and
- measures to minimise contamination of live poultry during transport.

²⁰ The current food safety management system that covers the importation of eggs and the hatching of those eggs to form the nucleus breeding stock are not considered to contribute to the residual risk. (see Section 6.3).

The code of practice could be developed by industry, in conjunction with government.

One option is to base the code of practice on the National Biosecurity Manual Contract Meat Chicken Farming, which is the main guide poultry growers currently refer to, with 65% of growers indicating they adhere to it when prompted (Colmar Brunton Social Research, June 2005). However, the Manual primarily addresses animal diseases and welfare biosecurity measures and would need to be up-dated to cover all food safety hazards on poultry farms, particularly managing feeds, which is not specifically addressed.

There would need to be a high level of compliance with the code of practice for this option to be effective at reducing the residual risk. This would be difficult to measure, as enforcement officers would have no power to inspect the farms to assess compliance. Their powers would be limited, as per option 1. Processors could make compliance with the code of practice part of the contractual arrangements with the farm and check compliance. However, there would be no legal obligation on them to do so.

6.1.2.1 Regulatory impact – industry

The costs of compliance with a code of practice will depend on the degree to which procedures/practices on the farm would need to be modified to comply with the code of practice.

6.1.2.2 Regulatory impact – government

Similar to option 1, there would be no new enforcement costs for government as there would be no government inspection of farms.

6.1.2.3 Regulatory impact – consumers

The potential for the levels of food-borne illness from contaminated poultry and poultry meat to be lowered is dependent on the level of compliance with the code of practice. What this level would be is uncertain.

6.1.2.4 Conclusion

A voluntary code of practice that specifically addresses food safety risks has the potential to reduce the residual risk to public health and safety of poultry meat being contaminated with either *Salmonella* or *Campylobacter* spp. if it is applied. However, the degree to which this residual risk can be lowered under this option is uncertain, as it is difficult to predict the percentage of farming operations that would comply with a code of practice. While poultry processors could require poultry farming operations to comply with a code of practice as part of a contractual agreement, this would not be a legal obligation.

It is reasonable to assume there would be a percentage of poultry farmers who would comply with the code of practice and correspondingly there would be a lowering of the residual risk. Therefore, it is assumed that this option would have greater benefits for consumers than option 1, where the residual risk is expected to remain the same. However, this option could be more costly to poultry farmers than option 1, as there may be costs associated with complying with the code of practice. As per option 1, this option does not present any new costs to government.

6.1.3 Option 3 – require the poultry primary production sector to control food safety hazards and processors to manage this requirement with individual growers

Under this option Standard 4.2.2 – Primary Production and Processing Standard for Poultry Meat is adopted and requires:

- businesses in the primary production sector to systematically examine all of their primary production operations to identify potential poultry food safety hazards and implement controls²¹ that are commensurate with the food safety risk; and
- a poultry processor to ensure only poultry is received from a grower who complies with the above requirement. A poultry processor would also be required to keep records to demonstrate compliance with this requirement.

This option aims to recognise existing commercial arrangements between a poultry grower and a poultry processor. Poultry growers would normally be under a contract to supply a processor with the live birds, with the birds invariably being owned by the processor. For example, the chicken meat industry has advised that chicken which may not be grown under contract, i.e. where the processor is not also the owner of the chickens, is likely to be less than 1%. Discussions with the game bird industry have also confirmed that growers are usually contracted to processors for the provision of birds.

Most poultry processors require poultry farms to meet food safety obligations as part of their contract of supply and audit the farms to ensure they are meeting these obligations, as 87% of poultry growers indicated they adhere to contractual arrangements in relation to food safety (65% unprompted) (Colmar Brunton Social Research, June 2005). Therefore, if this relationship between the grower and processor is recognised in terms of legal obligations, greater public accountability can be provided.

This option has a greater potential to lower the residual risk from *Salmonella* and *Campylobacter* than options 1 and 2 as it has legislative force. The enforcement agency can assess whether the processor is adequately monitoring the controls that address food safety hazards at the primary production level. It can also determine, by auditing records kept by the processor, whether the processor is inspecting the farm to assess the degree to which the farm is controlling its food safety hazards and whether it is following up areas of non-compliance. If the enforcement agency has any concerns with this arrangement, it can inspect the farm. Additionally, a primary production business could be prosecuted if it continued to follow unsafe practices.

6.1.3.1 Regulatory impact – industry

This option requires poultry farming operations to address food safety hazards on farm by putting in place controls to minimise contamination of poultry from:

²¹ The Risk Assessment identified the following areas that if controlled, contamination of poultry can be minimised:

- wild and domestic animals and birds;
- insects and rodents;
- drinking water;
- feed and litter;
- personnel; and
- equipment.

- wild and domestic animals and birds;
- insects and rodents;
- drinking water;
- feed and litter;
- personnel; and
- equipment.

These controls cover those areas identified within the risk assessment as contributing to the residual risk, as outlined under option 2.

The specific practices a poultry farmer would be expected to implement for the above controls, that could incur a cost include:

- protecting poultry from wild birds and rodents (this would require the shed to be wild bird and rodent proofed to the extent that is practicable²² and for pest control management to be in place);
- providing clean continuous drinking water for the birds;
- providing good quality feed (poultry to be fed feed that has been treated to reduce *Salmonella* levels to the extent practicable and stored so that it is protected from contamination from pests, wild birds, other livestock);
- cleaning (and disinfecting) sheds in between each flock;
- cleaning pickup equipment, crates and trailers (where the responsibility of the farmer);
- providing clean or treated litter for each new flock (stored litter to be protected from contamination by birds, pests and other livestock);
- providing protective boots and clothing for personnel and visitors;
- providing hand washing facilities at sheds (this could be wipes or gels);
- providing appropriate facilities to dispose of dead birds (sealed pest-proof containers or incinerators);
- providing toilet and handwashing facilities for staff;
- providing adequate facilities for waste disposal (including water disposal); and
- keeping stocking densities to a level that minimises stress and susceptibility to microbial disease.

There are other practices a farm would need to follow that would have no or minimal costs associated with them such as:

- keeping partial depopulation to a minimum (this is where part of a flock in a shed is separated for slaughter);
- withdrawing feed for a time prior to slaughter to ensure the crop is empty;
- cleaning up feed spills immediately;
- minimising stress of birds during transport (this includes not overcrowding and handling birds with care during loading and unloading);
- maintaining the farm in a clean and tidy condition;
- separation of sick or dead birds from main flock;
- ensuring farm staff do not have contact with other poultry, avian species or pigs;
- limiting access to sheds; and

²² It is not possible to completely wild bird and rodent proof a shed. However, sheds should be pest-proofed to accepted industry standards.

- storing chemicals separately (away from feed, litter and poultry).

It would be expected that the vast majority of poultry growers are already complying, or are substantially complying, with these minimum requirements for food safety and therefore the proposed requirements under this option. This expectation is supported by the benchmark research results quoted previously where 87% of poultry farmers indicated they adhere to contractual arrangements in relation to food safety (65% unprompted) and 65% of growers indicating they comply with the National Biosecurity Manual for Contract Meat Chicken Farming, when prompted (Colmar Brunton Social Research, June 2005). This Manual covers the majority of areas listed above, with the exception of feed. This is also supported by industry who have advised that the biosecurity guidelines in the Manual have been in place for some years and stipulate practices in line with those necessary to meet the requirements proposed under this option.

The benchmark research also asked growers what sorts of things they did to reduce the risk of food-borne illness from poultry meat products. When asked spontaneously, growers most often mentioned that sheds are cleaned out between batches of birds (34%), followed by maintaining a clean water supply (22%). When prompted, most farmers (89% and higher) indicated they do a wide range of activities to reduce the risk of food-borne illness from poultry meat products. These activities and the percentage of prompted and unprompted responses, were:²³

- rodent control is in place (99% prompted, 10% unprompted);
- a clean water supply is maintained for birds (98% prompted, 22% unprompted);
- sheds are cleaned out between batches (97% prompted, 34% unprompted);
- feed spillages are cleaned up immediately (97% prompted, 8% unprompted);
- dead birds are disposed of in a biosecure manner (96% prompted, 17% unprompted);
- foot baths are in place (93% prompted, 31% unprompted);
- employees regularly wash their hands (90% prompted, 10% unprompted);
- bird health is checked regularly (90% prompted, 10% unprompted);
- sheds are left for 7-10 days between batches (89% prompted, 8% unprompted); and
- wild species are kept off the farm (89% prompted, 9% unprompted).

For poultry growers not currently controlling their food safety hazards, there are likely to be costs associated with improving their practices. There could also be costs associated with up-grading sheds and equipment if this is necessary to achieve hazard control. For example, if chickens are housed in sheds that cannot be proofed against rodents and wild birds and/or cleaned, they will need to be up-graded. One grower, who has recently built new sheds, indicated the cost was approximately \$60 000 per shed (the sheds house 24 000 birds each).

A duck processor has indicated that of the 20 poultry farmers supplying birds, there is a possibility of three not meeting the requirements under this option. However if an extended implementation period was provided, the costs per year to these producers would not be excessive.

²³ The limitation of these results is that it indicates the percentage of farmers who have reported they follow these practices and not the percentage who are actually following them.

To lessen the burden of cost for growers with this option, an implementation period of two years should be provided.

The other costs that need to be considered are licensing and inspection fees. These are discussed in detail below.

Under this option, government can inspect poultry primary production operations to assess whether growers are controlling their food safety hazards. However, it is expected that the enforcement of the requirement under this option would be primarily through the processor, as the processor is required to ensure poultry is received only from a farming operation that is controlling its food safety hazards and must also keep records to demonstrate compliance with this requirement. The enforcement agencies have indicated they will limit their inspection of poultry farms to those occasions where there is concern that a farm may not be controlling food safety hazards. This could occur when:

- a farm is supplying a processor without a contract or the existing contract does not require adequate food safety controls to be in place on the farm;
- there is no or insufficient evidence that the processor is checking its farms to assess whether adequate food safety controls are in place;
- a processor has not satisfactorily followed up on unsatisfactory practices found to be occurring on its farms;
- despite efforts on behalf of the processor, records indicate that a grower is not satisfactorily controlling its food safety hazards; and
- to follow up a suspected food-borne illness outbreak or a complaint.

Therefore, there will be some inspections at the primary production level. With respect to inspection costs, jurisdictions have indicated the following:

- Victoria will only inspect on farm if there is a concern with the arrangement between the processor and the farm and is proposing to absorb these costs;
- New South Wales may charge a license fee for each farm in the order of \$200 annually to cover random checking of farms, as deemed necessary. If a farm needed follow up inspections because there were non-conformances it would be charged for this at approx \$200 per hour;
- Queensland would inspect a farm if there was a concern but would not charge for this initial inspection. However, charges would apply if follow up inspections were needed at approx \$200 per hour (this follow up inspection may be conducted by a third party auditor);
- In South Australia farms may need to be accredited (or licensed), with the charge being approximately \$120/year. South Australia would restrict auditing of farms to where corrective action by the processor has been unsuccessful. In such cases, the farm would pay for the audits until compliance is achieved (current rate is \$128/hr). The length of the audit would depend on the nature of the non-compliance and the size of the farm;
- Tasmania is not proposing to charge license fees on farms. It proposes to enforce this requirement through the auditing of the processor and if it is necessary to go back on farm, would recoup these costs from the processor; and

- Western Australia is not anticipating inspecting or auditing farms on a routine basis. Farms may be inspected when evidence held by a processor indicates there is an issue on farm that is not being adequately addressed. At the present time, Western Australia has no scope to charge licence fees or charge for inspections and audits. However, this may change in the future.

The Northern Territory and the Australian Capital Territory do not have any farming operations growing poultry for sale for human consumption.

6.1.3.2 Regulatory impact – government

The enforcement agencies have indicated that the main costs will be associated with the physical inspections that need to be conducted and will include:

- staff time to inspect farms and follow up on areas of non-compliance;
- maintaining either an electronic database or paper records of farms and inspection results;
- transport to and from farms; and
- the provision of protective clothing and boots.

It is not expected that there will be additional costs to set up a database as existing systems can be used for this new function. The costs associated with inspecting/auditing farms (where required) will be largely recouped through licensing and inspection/audit fees, as outlined above under the discussion on the regulatory impact to industry. Therefore, the impact of these changes on government is likely to be low.

6.1.3.3 Regulatory impact – consumers

The regulatory component of this option will give greater public accountability to existing arrangements that are in place between poultry processors and the growers that supply these processors with live poultry. If there are any concerns that this arrangement is not working and hence food safety hazards are not being controlled on farm, government will be able to intervene. Therefore, it is expected that this option has a greater potential to lower the residual risk of poultry contaminated with *Salmonella* and *Campylobacter* reaching the consumer, than options 1 and 2 where no government checking is recommended. If the likelihood of poultry being contaminated with *Salmonella* and *Campylobacter* is reduced, it follows that the incidence of food-borne illness occurring from these pathogens will also be reduced. This will directly benefit consumers.

However, this benefit may come at a cost to consumers if the poultry industry charges consumers more for poultry meat and poultry meat products to recoup any additional costs it incurs.

6.1.3.4 Conclusion

Unlike options 1 and 2, this option introduces a regulatory component. It aims to recognise existing arrangements in place between a processor and farms that supply this processor by requiring poultry growers to minimise food safety hazards and for the processor to demonstrate compliance of its growers with this requirement. This approach enables the government to scrutinise these existing arrangements and to intervene only where necessary.

It is anticipated that this government intervention will result in improved food safety practices, more so than under options 1 and 2, thereby lowering the residual risk to consumers of suffering food-borne illness from contaminated poultry meat and poultry meat products. However, this lowering of the residual risk comes at a cost. The likely costs to poultry primary production operations are:

- costs to improve food safety practices and up-grade facilities and equipment where necessary to meet the new requirements;
- license or accreditation fees in some jurisdictions (in the order of \$120-\$200 per annum); and
- costs associated with auditing/inspection if there are concerns the farming operation is not meeting its legal obligations. Costs will include direct costs for the audit/inspection and indirect costs such as staff time spent with the auditor/inspector.

It is expected that the vast majority of primary production operations would already be meeting the food safety practices necessary under this option and therefore the cost impact is expected to be minimal. While the licence/accreditation fees represent new costs (for those poultry growers located in jurisdictions where these will apply), the audit/inspection fees can be avoided if the processor and the grower adequately meet the legal obligations. Therefore, the overall cost of this option is considered to be minimal.

6.1.4 Option 4 – documented HACCP based food safety management system

Under this option, a poultry grower would be required to implement a documented food safety management system that effectively controls the hazards. A poultry grower could be taken to comply with this requirement if it implements:

- a Codex Hazard Analysis Critical Control Point (HACCP) food safety management system; or
- a HACCP based food safety management system recognised by the Authority²⁴ (this would include recognised industry developed programs).

The HACCP program would need to:

- identify potential food safety hazards that may be reasonably expected to occur on the farm;
- identify where each of these hazards can be controlled and how they will be controlled; and
- indicate what corrective actions will be taken if a hazard is found not to be under control.

The program would need to be fully documented and records would need to be kept to demonstrate compliance with this program, for example, pest control records, monitoring control measures and corrective actions taken.

This option differs from option 3, where there is no requirement for the grower to provide documentation to support the control of hazards.

²⁴ 'Authority' means the State, Territory or Commonwealth government agency or agencies having the legal authority to implement and enforce this requirement.

6.1.4.1 Regulatory impact – industry

Compliance with this option would be the most costly for poultry growers. In addition to the compliance costs discussed under option 3, the poultry grower would also incur the following costs:

- HACCP training for management and staff in supervisory positions;
- management time to write the program and to pay consultants to assist with this task;
- once the program is written, training of all staff on how to comply with the HACCP program;
- possible employment of additional staff, such as a quality control manager, to assist with these tasks;
- ongoing costs of having the program audited;
- ongoing costs of reviewing the program to ensure its adequacy;
- ongoing costs of amending the program when practices on the farm change;
- training for new staff and up-dating all staff on any changes to the HACCP program; and
- keeping records to demonstrate compliance with the program.

The cost of developing and implementing a HACCP program for a duck processor has been estimated at approximately \$100,000 to \$150,000.

The above costs could be significantly reduced where a specific guideline is available for poultry farming operations to use to assist in developing the HACCP program for the business. The Australian Chicken Meat Federation (ACMF), the peak industry body for the chicken meat industry, is finalising such a guideline, *Food Safety HACCP Programme for the Chicken Meat Industry*. This Programme includes generic HACCP programs for the entire chicken meat industry – from farming through to processing, including feed mills, hatcheries, breeder farms, broiler farms and processing plants. The ACMF is proposing to circulate copies of this program to the entire chicken meat industry and run training workshops. It is not yet clear how applicable this guideline will be for non-chicken poultry.

While recognising that guidance material such as that being finalised by ACMF would significantly reduce the costs to poultry growers, the costs associated with this option will still be higher than under option 3. It is expected that the majority of farming operations would already be complying with the proposed requirements under option 3. However, most farming operations do not have HACCP programs in place and therefore would incur costs to develop and implement such a program to comply with option 4. There would also be the ongoing costs to comply with the program, maintain it and have it audited. These costs are also likely to be prohibitive to a greater percentage of growers than under option 3 and therefore it is expected that a larger percentage of growers would close their businesses.

6.1.4.2 Regulatory impact – government

This option would be the most costly for government to implement. There would be initial costs in ensuring HACCP programs developed by primary production businesses met acceptable standards and assistance and guidance to poultry farms.

All farms would need to be regularly audited to ensure compliance with the food safety program requirement. Government could employ or train staff to perform this auditing function and/or approve third-party auditors²⁵ to carry out this function. Even if the enforcement agency utilises third-party auditors, it will incur the cost of managing the administration required to ensure all poultry farms are regularly audited and non-conformances are followed up satisfactorily. The additional costs to government are likely to be recouped through licensing fees and auditing fees, if government officers carry out the audits. These costs will be higher than those indicated under option 3.

6.1.4.3 Regulatory impact – consumers

This option potentially provides greater benefit to consumers, in respect to lowering poultry contamination with *Salmonella* and *Campylobacter*, as it would more actively and comprehensively require primary production operations to control food safety hazards. However, this benefit is likely to come at a greater cost than that predicted under options 1-3. The additional costs to growers to comply with the HACCP program proposed under this option are likely to be passed on to the consumer and the resultant increases in the price of poultry meat and poultry meat products are expected to be higher than the minimal rises expected under option 3.

6.1.4.4 Conclusion

This option is expected to have the highest costs for poultry growers, as they would need to develop and implement a documented HACCP program. There would also be significant ongoing costs to comply with the program (in terms of record keeping), to maintain it and to have it regularly audited. Though the developmental costs could be lowered where appropriate guidance material and assistance is available, the overall cost is expected to be much higher than the other options. These costs could be prohibitive to a significant number of poultry growing operations, causing these operations to be either sold or closed.

While compliance costs are expected to be higher for this option than the other options, arguably this option would be the most effective in reducing the residual risk of poultry being contaminated with *Salmonella* and *Campylobacter*. As additional costs to industry are normally passed on to the consumer, it is uncertain how much more the consumer is willing to pay for potentially safer food.

As option 3 provides for a lowering of the residual risk at a lower cost than this option, at this time there does not seem sufficient justification for this level of intervention.

6.1.5 Preferred option

Option 3 is the preferred option as it represents the most cost effective way of addressing the residual risk at the primary production stage of the poultry meat supply chain. This option proposes to strengthen existing arrangements in place between a processor and farms that supply this processor by legally obligating poultry growers to control their food safety hazards and for the processor to demonstrate that its growers are meeting this obligation.

²⁵ A third-party auditor is a person who has been certified by an accredited certification company as meeting the approval criteria for auditing, in this instance, poultry farming operations and has state/territory approval to practice as a food safety auditor in this respect.

This enables the government to scrutinise these arrangements and to intervene where necessary. The resultant improved poultry growing food safety practices should flow on to a lowering of the residual risk to consumers. The costs associated with this option are considered minimal, as the vast majority of poultry primary production operations are reportedly already controlling their food safety hazards.

Option 1 (*status quo*) does not lower the residual risk from poultry primary production operations identified within the risk assessment, thereby representing no benefit to consumers. There would be no change in the incidence of food-borne illness due to the consumption of poultry meat and poultry meat products and there would be no change to the current arrangements for poultry primary production.

In terms of the incidence of food-borne illness, an (as yet) unpublished report from OzFoodNet on food-borne disease associated with chicken meat and eggs indicates that between 2001-4,²⁶ there were 52 chicken-associated outbreaks affecting at least 860 people, with 88 people hospitalised and one death (Kirk et al, 2005). This does not include non-outbreak associated illness, that is, sporadic occurrences related to the consumption of chicken meat and eggs.

Option 2 (*Code of practice*) potentially lowers the residual risk but the degree to which this residual risk can be lowered under this option is uncertain, as it is difficult to predict the percentage of poultry primary production operations that would comply with a code of practice. While poultry processors could require poultry growers to comply with a code of practice as part of a contractual agreement, there would be no public accountability, through government inspection/audit to assess the effectiveness of this arrangement. Therefore options 3 and 4 are predicted to be more effective at lowering the residual risk.

Option 4 (*documented HACCP programs*) potentially lowers the residual risk to the greatest degree, however, at a higher cost than option 3. As option 3 still provides for a lowering of the residual risk, without the additional costs, this is the preferred option.

6.2 Processing

In March 1995, the (then) Agriculture and Resource Management Council of Australia and New Zealand²⁷ determined that aspects of all existing national meat industry codes relevant to human health would be mandated by amendment of legislation in all States and Territories. This decision was given effect by appointment of a Steering Group²⁸, which reviewed existing codes of hygienic practices (in relation to meat) to express mandatory national standards in outcome terms. The mandatory requirements were specified within Australian Standards and require process control to be achieved through the application of HACCP methodology as defined by the Codex Alimentarius Commission.

²⁶ This also includes partial data from 2000 and 2005.

²⁷ This Council has been replaced by the Primary Industries Ministerial Council and consists of the Australian/State/Territory and New Zealand government ministers responsible for agriculture, food, fibre, forestry, fisheries and aquaculture industries/production and rural adjustment policy.

²⁸ The Steering Group comprised Chairmen and Chief Executives of State and Territory meat hygiene authorities, the Australian Quarantine Inspection Service, meat industry organisations, food safety technical advisers and the (then) Australia New Zealand Food Authority.

The Australian Standard requires poultry processors to develop and implement HACCP programs. This program must address the food safety hazards associated with the processing of poultry. The Australian Standard for poultry also requires businesses to comply with specific requirements relating to the design and construction of the premises, the processing of poultry, health and hygiene requirements and cleaning and sanitising.

The development of a national standard for poultry primary production and processing will enable the food safety hazards associated with the entire poultry meat supply chain (from the farm to the consumer) to be addressed within the one regulatory document i.e. the Food Standards Code. The risks from the processing stage of this chain can be addressed by the Standard for Poultry Meat, requiring poultry processors to:

- develop and implement a documented HACCP based food safety management system as currently required under State/Territory legislation which mandates compliance with the AS 4465; and
- comply with Standards 3.2.2 - Food Safety Practices and General Requirements and 3.2.3 - Food Premises and Equipment of the Code (the requirements within these Standards reflect the requirements within the existing Australian Standard for poultry for the design and construction of the premises, health and hygiene and cleaning and sanitising).

To ensure that the documented food safety management system addresses and controls the main hazards associated with the consumption of poultry meat, they should be specified within the Standard for Poultry Meat. These hazards are:

- the removal of unacceptable poultry prior to slaughter and unacceptable carcasses during processing;
- the minimising of contamination of poultry, carcasses and poultry meat; and
- minimising the levels and growth of pathogenic microorganisms potentially present on the poultry carcass or poultry meat.

The scope of activities to be covered within the documented food safety management system should be consistent with AS 4465. This means it should cover the primary processing of poultry (from holding of poultry before slaughter to carcass stage and deboning and portioning). It should also cover any further processing of poultry undertaken by a poultry processor such as marinating, crumbing, cooking and packaging. However, it should not cover food businesses handling poultry not currently covered by AS 4465, which are those within the retail/food service sector. These businesses are required to comply with Chapter 3 of the Code.

A specific requirement for poultry processors to maintain sufficient records to identify the immediate supplier and immediate recipient of poultry or poultry meat products for the purposes of ensuring the safety of the poultry meat products, has also been included in the proposed Standard. This is an important component of a food safety management system to enable tracing when product becomes contaminated. It enables contaminated product to be recalled and also assists in determining the cause of the contamination, such as a particular farm supplying contaminated poultry.

The Standard will need to be supported by a comprehensive interpretive guide that explains the intent of these requirements and in doing so, carries across the detailed food safety information contained within the AS 4465. The interpretive guide will also provide further detail on the controls that are critical to the safe production of poultry, as identified within the risk assessment. The poultry industry may also develop specific guidance material, for example, the guideline already being developed for the chicken meat industry by the Chicken Meat Federation, *Food Safety HACCP Programme for the Chicken Meat Industry*.

The requirements in the AS 4465 that do not relate to food safety such as animal welfare and occupational health and safety matters will need to be addressed through other mechanisms. The Food Regulation Standing Committee (FRSC) Primary Production and Processing Working Group has begun discussions on possible transitional issues in relation to the incorporation of the food safety elements of AS 4465 into the proposed Standard for Poultry Meat.

6.2.1 *Regulatory impact*

There are four main requirements proposed for poultry processors:

1. develop and implement a documented HACCP based food safety management system as currently required under State/Territory legislation which mandates compliance with the AS 4465;
2. comply with Standards 3.2.2 - Food Safety Practices and General Requirements and 3.2.3 - Food Premises and Equipment (to reflect current requirements under State/Territory legislation);
3. to ensure poultry farmers supplying poultry are controlling food safety hazards (to support the requirement on poultry farming operations); and
4. maintain sufficient records to enable the traceability of poultry and poultry meat products, where necessary for food safety.

The regulatory impact of these requirements is discussed separately below.

6.2.1.1 A HACCP based food safety management system

There is no regulatory impact as this is a current requirement within State/Territory legislation, which mandates compliance with AS 4465. This Australian Standard already requires poultry processors to develop and implement a HACCP based food safety program.

6.2.1.2 Compliance with Standards 3.2.2 and 3.2.3

There is no regulatory impact as the requirements within these Standards reflect those within AS 4465, which is mandated under State/Territory legislation.

6.2.1.3 Requirement to ensure poultry farmers supplying processors with poultry are controlling food safety hazards

The preferred risk management option for the primary production phase of the poultry meat supply chain (Option 3), recommends that poultry processors be required to ensure that poultry growers supplying poultry are controlling food safety hazards.

The enforcement agencies that will be responsible for enforcing this requirement have indicated they will audit the processor's records to assess whether systems are in place to ensure poultry growers are controlling food safety hazards. If a processor is not currently monitoring poultry growers to assess compliance with contractual agreements, this requirement will mean additional costs.

Costs will include:

- having access to appropriately skilled staff to assess compliance on poultry farms;
- keeping records of farm compliance; and
- following up areas of non-compliance.

Some of the smaller processors purchase poultry from the larger poultry companies and not directly from growers. They would therefore not be responsible for inspecting these growers. In such cases, the processor in question would need to obtain documented evidence from the company who has direct responsibility for the farms, that food safety hazards are being controlled.

The larger players in the poultry industry have indicated they already regularly check their growers to assess whether they are controlling food safety hazards and therefore this requirement will have little impact. The enforcement agencies have also indicated that the time needed to assess additional records required by this requirement will add minimal costs to the overall auditing cost (in the order of 1%).

The poultry processors on whom this new requirement will have most impact are those not currently conducting regular monitoring of poultry growers. While this represents a small percentage of the industry, this will have a financial impact on the affected processors. One such processor has indicated this new requirement will cost the business an additional \$50 000 per annum. This cost could not be absorbed by the business and hence it would be passed on to the consumer through increased prices.

To avoid this cost, the requirement on poultry processors to ensure its poultry growers are controlling food safety hazards could be deleted and instead government would need to regularly inspect poultry farms to assess compliance. This would be duplicative as the majority of the poultry industry has indicated it already carries out this function and would continue to do so even if government inspected poultry growing operations.

The requirement for poultry processors to ensure poultry growers are controlling food safety hazards reflects current industry practices for the majority of the industry. Therefore, the overall additional costs on the industry and therefore to the consumer are expected to be minimal.

6.2.1.4 Requirement for product tracing

Australian Standard 4465 does not explicitly require traceability of product. However, product traceability is a necessary component of a HACCP program, which is required by AS 4465, and therefore processors should already have systems in place to enable them to meet this requirement. The regulatory impact of a traceability requirement is therefore expected to be minimal.

However, comment is invited from the poultry processing sector on the possible impacts.

6.2.2 Conclusion

As these regulatory requirements are considered appropriate to the risks being managed, no other regulatory options have been considered. Maintaining the requirements within AS 4465 in a national standard is consistent with the *Australia and New Zealand Food Regulation Ministerial Council Overarching Policy Guideline on Primary Production and Processing Standards*.

6.3 Retail

The risk assessment concluded that the potential risks from poultry at the retail stage of the poultry meat supply chain are adequately addressed through the requirement for these businesses to comply with Standards 3.2.2 (*Food Safety Practices and General Requirements*) and 3.2.3 (*Food Premises and Equipment*). Although the risk management for the retail stage remains unchanged, FSANZ will reiterate the importance of effective implementation of the Chapter 3 requirements to retailers as part of the communication strategy for the primary production and processing standard for poultry meat.

6.4 Consumer

The risk assessment concluded that improvements in the way in which consumers handle and cook poultry would significantly lower the levels of illness. To lower the risk of consumers becoming ill from *Salmonella* and *Campylobacter* they need to:

- keep raw poultry refrigerated and well away from cooked and other ready-to-eat foods;
- after handling raw poultry, wash and dry hands thoroughly;
- cook the poultry thoroughly so that juices run clear and no pink is visible; and
- ensure that the cooked poultry does not become contaminated with juices from the raw poultry by ensuring only clean, dry utensils and equipment are used for the cooked poultry.

The Food Safety Information Council, the Australian organisation with primary national responsibility for conveying food safety messages to consumers, aims to improve consumer's knowledge of how to handle, store and cook food safely. However, the food safety messages it promotes are general and not specific to poultry, for example, 'Cook food properly' and 'Separate raw and cooked food'.

To reduce the risk that raw poultry poses to consumers, there may be a need for more specific poultry food safety messages for consumers. One of FSANZ's functions, in cooperation with the Australian states and territories and New Zealand, is to help develop food education initiatives, including the publication of information to increase public awareness of food standards and food labels. Initiatives could include information targeted to specific sub-populations of the community (e.g. allergen sufferers, vulnerable populations etc).

Education raises awareness and increases understanding of food regulations, making them more effective, thereby making the food supply safer. FSANZ's capacity is reduced if the agency works by itself in this area. The Poultry CRC may be an avenue to progress this through their program of improved education and skills of staff at all levels of the industry.

7. Consultation

In addition to statutory consultation, that is the consultation required of FSANZ under the FSANZ Act, further consultative mechanisms have been built into the development process for the Primary Production and Processing Standard for Poultry Meat. Additional consultation reflects the recognition that close consultation with industry, regulators and consumers is needed throughout the development of the Standard. This is considered particularly important as the setting of primary production and processing standards is a new function of FSANZ.

Accordingly, in the early stages of standard development, the level of awareness of FSANZ processes in the community and within the primary production sector may be minimal.

As part of FSANZ's statutory consultation, the Initial Assessment Report was released for a six week public comment period from 26 May 2004 until 21 July 2004. Eleven submissions were received in response to the Initial Assessment Report. There were four main areas of comment, which are briefly explained below. Where relevant, submitters comments have been discussed in the appropriate section of this report. A detailed response to each submission is at Attachment 5.

7.1 Scope of the draft Standard

Some of the submitters stated that the poultry meat Standard should include all avian species including ratites. This issue has been addressed under section 5.1 of this report.

There were a number of comments regarding processing and retail practices, which are currently covered by Chapter 3 of the Code. Consistent with the guidance provided by the Ministerial Council, the Standard for poultry meat will not duplicate any current provisions in the Code.

7.2 Minimisation of pathogen load at all steps of the supply chain

Although many submitters acknowledged inappropriate food safety practices by consumers, they believe that all sections of the poultry meat supply chain should be responsible for reducing the pathogen load in poultry and poultry meat products so as to minimise the impact of inappropriate handling and cooking at the consumer level of the supply chain. Section 8 of this report discusses and recommends how each step in the supply chain should contribute to the overall safety of poultry meat and poultry meat products.

7.3 Education

Many submitters suggested a need for more consumer education programs, as ultimately consumers are able to reduce the potential for food-borne illness by appropriate cooking of poultry meat products and implementation of measures to reduce cross-contamination. FSANZ is working with industry through the Poultry Cooperative Research Centre to develop an appropriate consumer information package.

7.4 Strategies to Support the Standard for Poultry Meat

A number of submissions from consultation on the Initial Assessment Report emphasised that an essential part of the standard will be the guides that will accompany it.

These guides could include an interpretive guide which describes each provision in the standard and an ‘industry guide’ which details the processes and procedures that an operator could use to meet the standard. Submitters believe such guides are essential for consistency in enforcement, compliance and food safety practices within the poultry meat industry.

FSANZ will develop an interpretive guide to the Standard for Poultry Meat in consultation with the Standard Development Committee. The guide will explain the requirements of the Standard and briefly summarise other requirements in the Code that apply to poultry meat (requirements in Chapters 1 and 2 of the Code). As has been the case with previous food safety standards, FSANZ would develop an interpretive guide for dissemination to enforcement agencies prior to the standard coming into effect.

The Australian Chicken Meat Federation has recently completed the development of a guideline, *Food Safety HACCP Programme for the Chicken Meat Industry* to provide specific guidance to the chicken meat industry on developing HACCP programs. This would assist the chicken industry meet the legal obligations being proposed within this report by assisting:

- processors to develop HACCP based food safety management systems; and
- poultry primary production businesses identify and control their hazards.

The Australian Chicken Meat Federation proposes to run workshops in every State and Territory on this guideline program.

7.5 Consumer education

Many submitters felt that there should be a consumer education program to accompany the standard, as ultimately consumers are able to reduce the potential for food-borne illness by appropriate cooking of poultry meat products and implementation of measures to reduce cross-contamination. This is discussed in section 7.6 of this report.

7.6 World Trade Organization (WTO)

As members of the World Trade Organization (WTO), Australia and New Zealand are obligated to notify WTO member nations where proposed mandatory regulatory measures are inconsistent with any existing or imminent international standards and the proposed measure may have a significant effect on trade.

The proposed Standard for poultry meat in Chapter 4 of the Code will have implications for imported product. Notification will therefore be made in accordance with Australia’s obligations under Sanitary and Phytosanitary Measure (SPS) Agreement. This will enable other WTO member countries to comment on proposed changes to standards where they may have a significant impact on them.

8. Evaluation of other requirements for poultry meat in the Code

As part of the development of the Standard for Poultry Meat, an evaluation of other poultry requirements in the Code was undertaken.

Two requirements already evaluated as part of the chemical risk assessment process²⁹ and were not within the general food or food safety standards³⁰ are:

- Standard 1.6.2 - Processing Requirements (Australia only), Clause 4 Eviscerated Poultry; and
- Standard 2.2.1 - Meat and Meat Products, Clause 2 Limit on Fluid Loss from Thawed Poultry.

8.1 Eviscerated poultry

Evisceration is the process for removing the crop, intestines and other internal organs from the poultry carcass. As some of these organs can be highly contaminated with microorganisms such as *Salmonella* and *Campylobacter*, evisceration was considered in the assessment of the risk to public health and safety to have the potential to significantly contribute to carcass contamination. The significance of evisceration is recognised under State and Territory legislation where the processing of poultry must include evisceration.

However, the Code currently allows viscera to remain in the carcass. The relevant requirement is clause 4 of Standard 1.6.2, which applies in Australia only, and states that:

Poultry in the form of an eviscerated carcass may include the gizzard, heart, liver, neck or a combination thereof.

As the Australian Standard requires the evisceration of all poultry and the food safety elements of this Standard are being transferred to the Poultry Meat Standard, it is proposed that this clause be deleted from the Code. Partly eviscerated poultry has the potential to be highly contaminated with pathogenic bacteria and therefore poses an unacceptable risk to consumers. Deleting clause 4 will not impact on industry as it must currently comply with the Australian Standard or on the jurisdictions as deletion brings the Code into alignment with requirements jurisdictions currently enforce.

8.2 Limit on fluid loss in thawed poultry

8.2.1 Background

During the processing of poultry, water is used for washing and chilling, which results in the absorption or take up of water by the skin or muscle tissue of carcasses. This take up of water contributes to a loss of fluid that occurs when frozen poultry is thawed.

A limit on the amount of fluid that can be lost when a frozen poultry is thawed is stipulated within clause 2 of Standard 2.2.1 - Meat and Meat Products, of the Code. This fluid loss limit is 60 g/kg (6%) of thawed poultry and applies in both Australia and New Zealand.

This limit was set in 2000 as part of the process of developing the meat standard for the joint Australia New Zealand Food Standards Code. Initially it was proposed that the limit of fluid loss from thawed poultry be 80 g/kg (8%), the limit in Australia at the time.

²⁹ The chemical risk assessment evaluated the majority of the standards in Chapter 1 of the Code.

³⁰ The remaining standards in Chapter 1 that were not evaluated as part of the risk assessment process are general food standards that relate to all food sectors. The standards in Chapter 3 of the Code are general food safety standards that apply across the retail food sector and so were not evaluated.

Eight submissions were received of which 5 supported the proposal to limit fluid loss to 8%, one questioned whether the issue of fluid loss could be handled as a fair trading issue and one proposed a level of 6% because it was the level in the New Zealand Food Regulations and reflected practice at that time. From these submissions, FSANZ (then ANZFA) proposed to lower the limit from 8% to 6% and subsequently sought a second round of public comment. No further comments were received concerning the proposed lower limit.

A limit on the amount of fluid that can be lost from thawed poultry was set to assist in preventing deceptive or misleading practices and not set for food safety reasons. For example, because poultry is purchased by weight, the presence of additional water would increase the final weight of the product meaning that consumers could be paying for water and not meat. Water may be used when poultry is processed to remove visible contamination and to chill the carcass. This will result in some water being absorbed by the poultry. The limit aims to recognise that while some water may be absorbed during processing, it should not be excessive.

8.2.2 *Regulatory problem*

Following some recent surveillance of fluid loss from thawed poultry, the Australian poultry industry raised concerns that it may not be feasible to consistently comply with the current fluid loss limit of 6% for thawed poultry. Industry has indicated this is mainly due to the implementation of Hazard Analysis Critical Control Programs (HACCP) in the poultry processing sector in 1997 and a market preference for larger birds. HACCP has led to an increase in the number of washing steps during processing, the volume and pressure of water used for washing and the need for poultry to spend longer in water chillers³¹ to achieve lower carcass temperatures. The market preference for larger birds has also meant longer times are needed to chill these birds.

Therefore the current 6% limit may no longer be achieving its regulatory objective i.e. to ensure poultry processors minimise the uptake of water in poultry to be frozen, as industry has indicated it is having difficulty meeting this limit due to changes in its practices. Water uptake is also an issue for all poultry, not just frozen poultry. If fresh poultry were bulked with water, the limit would not apply.

8.2.3 *Consultation*

This issue arose just prior to the finalisation of the poultry Draft Assessment Report. While it is considered appropriate to address this issue within this report, stakeholder input needed to be sought, prior to the report's completion, to better inform the consultation process. This was achieved through the release of a discussion paper from 10 - 25 October 2005.

8.2.4 *Summary of submissions received*

Fifteen submissions were received in response to the discussion paper and a summary is provided at attachment 5.

³¹ The majority of poultry processors chill poultry carcasses by immersing them in chilled water in large tanks. Paddles may be used in these tanks to move the carcasses through the tank.

Of the eight submissions received from industry, seven support increasing the limit to 8% and calculating the limit over 20 birds to determine an average fluid loss. The remaining industry submission recognises that processors who use only water for chilling may have difficulty meeting the 6% limit (this processor uses a combination of water and air chilling and therefore can meet the 6% limit).

There were four government submissions from the Department of Health in Western Australia, Safe Food Production Queensland, Department of Human Services Victoria and the New Zealand Food Safety Authority. The Department of Health in WA supports retaining the 6% limit but allowing it to be determined over a number of birds to determine an average fluid loss. The Department of Health in WA also supports requiring poultry to be labelled with the percentage of water uptake. Safe Food Production Qld considers that this matter is best addressed through fair trading provisions and that the current limit is inappropriate given current processing technology. The Department of Human Services Victoria recognises that there may be a need to increase the limit for fluid loss for larger birds but recommends this issue be dealt with through HACCP Programs and current practices. The New Zealand Food Safety Authority questions the need for the fluid loss limit in the Food Standards Code.

There was one submission from consumers, Australian Consumers Association (ACA). ACA does not believe there is sufficient justification to justify raising the level from 6 to 8% and that more information should be obtained from New Zealand on whether New Zealand processors have difficulty meeting the 6% limit.

The Food Technology Association of Victoria queried the justification to lower the level from 8 to 6% during the review of the meat standard as it appears to have been made on the basis of one submission.

Worcestershire Scientific Services (United Kingdom) stated that this issue has caused much debate and analysis in Europe. A 6% limit has been shown to be a workable ceiling for water uptake extraneous to the poultry by the European Commission (EC). This submitter also queried setting a limit on fluid loss as the issue relates to water uptake and chicken processors can use technologies to ensure water absorbed by chicken is retained. This water would therefore not be calculated as part of the fluid loss.

8.2.5 Summary of data received

Data was requested from government and industry on any testing conducted to assess compliance with the current 6% limit. Raw data was received from the NSW Food Authority (results from testing on 4 frozen chickens), Department of Health in South Australia (results from testing on 2 frozen chickens) and from one major supermarket (results from testing on 38 frozen chickens). The Department of Health in WA and a poultry processor in New Zealand provided averaged results.

The results from raw data obtained from NSW, SA and the major supermarket indicated 68% complied with the 6% limit and 32% did not. If an 8% limit was in place, 89% of the chickens would have complied and 11% would not have.

The Department of Health in WA indicated the following:

- of our two largest processors, water take up achieved by one processor is in the region 5.7% for small birds and 4.9% for large birds and the other processor is 5% for all birds;
- of a sample of 200 birds thawed annually by one processor, a fluid loss of 3.8% (average) has been recorded; and
- other processors' records show a 5% (average fluid loss for thawed birds).

The processor from New Zealand, Tegel Foods stated that water pick up is measured routinely at some plants and at one of its plants, 900 samples were taken over a period of 3 months. The range was 1-14.9%. This was measured by weighing and tagging birds pre-chill wash, recording the retention time in the chill wash, draining the birds for 20 minutes after chill wash and re-weighing them.

The mean of the 900 samples was 5.5% with a standard deviation of 2.26%. This test only measured water pick up from the chill wash process – inevitably the birds would have picked up some water from the scalding, plucking, washing and evisceration before the pre-chill wash weighing.

No data was available from the remaining jurisdictions, including New Zealand. While requested, no data was received from the poultry processors in Australia or other processors in New Zealand, with respect to results from testing fluid loss limits in frozen poultry.

8.2.6 *International regulations*

8.2.6.1 European Union

Fluid loss limits apply to fresh, chilled or frozen whole carcasses as well as portions of poultry. Different limits apply depending on the method of chilling and the test method used. For frozen poultry that is chilled by immersion and tested using a drip test, a 5.1% limit applies. This is determined as an average over 20 carcasses.

8.2.6.2 United States of America (USA)

Previously, the USA permitted 8-12% fluid loss, 8% for whole poultry and 12% for poultry portions and ice packed poultry. In 1997, the USA Food Safety Inspection Service was taken to court on these limits (the Kenney case) and the USA District Court determined that the water absorption and retention limits were arbitrary and capricious because there was no demonstrated evidence for the basis of the limits. Since this ruling, processors must be able to justify (with data collected in accordance with a written protocol) that any water up-take is from meeting food safety requirements or time/temperature chilling requirements. If water up-take has not been minimised, the product may be considered adulterated. The maximum percentage of retained water must also be declared on the label, where applicable³².

8.3.1 *Relevant issues*

Issues that have arisen in submissions and as a result of discussions with stakeholders are discussed below.

³² An establishment having data demonstrating that there is no retained water in the products could choose not to label the products with the retained-water statement or to make a no-retained water claim on the product label.

8.3.1.1 Do current requirements for declaration of water apply?

One submitter indicated that the requirements for declaration of added water in subparagraph 3(c)(iii) of Standard 1.2.4 - Labelling of Ingredients would apply. The effect of this requirement is that water must be declared if it constitutes 5% or more of the final food. If water is used for processing at the lowest level necessary to perform this processing function, it is considered a processing aid under Standard 1.3.3 - Processing Aids and need not be declared. If water was used in addition to that needed for processing, it would be considered an ingredient and the requirements relating to declaring added water in subparagraph 3(c)(iii) of Standard 1.2.4 would apply. This is further discussed under option 4.

8.3.1.2 Is the setting of a fluid loss limit an appropriate mechanism to address this issue?

Several submissions queried whether setting a fluid loss limit was the appropriate mechanism to address the issue of frozen poultry being bulked with excess water and suggested other ways this issue could be addressed. These are considered within options 3-5 below.

8.3.1.3 If a fluid loss limit is set, should it just be for frozen poultry carcasses?

The current limit only applies to frozen poultry carcasses, which represents a very small percentage of the poultry market. For example, in the submission from Golden Cockerel it is indicated that frozen birds represent <1% of current chicken production. The European Union sets limits for all poultry, frozen, fresh and portions. The US requirements apply to all meat, including poultry. This issue is further considered under option 4. If limits were set for fresh poultry, they would need to be calculated by weighing poultry post evisceration before immersion chilling and then post chilling, before being packed.

8.3.1.4 Can we justify continuing to regulate water uptake of frozen poultry, when there are no regulations that apply to the bulking of other meats or seafood with water?

Several submissions indicated that it was inconsistent to only set limits for poultry and not other meats.

The fluid loss limit for frozen chicken was included in the Code to recognise that when frozen chickens are thawed, fluid loss occurs. This fluid will consist of fluid that is normally present in chicken that is lost because of cellular breakdown during the thawing process but it may also contain water that has been absorbed during processing. The intent of the limit is to ensure that processors do not allow poultry to uptake water in excess of what is unavoidable during primary processing.

When other animals such as cattle, lambs and pigs are slaughtered, water is used to wash carcasses but is not used for chilling. There is therefore minimal, if any, uptake of water during the primary processing of these animals. Hence, there is no need for limits to be set. Water may be used when these meats are further processed but the requirements within Standard 1.2.4 would apply i.e. if water is used as an ingredient, it would need to be declared where it constitutes 5% or more of the final food.

Water may be used to process seafood for washing and chilling. Different methods are used to cool seafood, depending on the type of seafood. Methods used include iced water, ice slurries and ice/salt slurries. Where water is used for chilling, the seafood could potentially absorb water during the cooling process.

The use of water during the processing of any animal, including seafood would be subject to the same requirements as that applying to poultry. These requirements are discussed in option 4.

8.3.1.5 Should different limits be set for different sized birds?

One submission from government indicated that a higher limit may be applicable for larger birds. Larger birds take longer to chill and therefore, if they are water chilled, they will be exposed to water longer than smaller birds and potentially uptake more water. Industry has not indicated that different limits should be set for different sized birds, but does support the limit being averaged over 20 birds so variabilities such as bird size, can be taken into account. If a fluid loss limit is stipulated, these variabilities need to be considered.

8.3.1.6 If an average is permitted, should all birds tested be the same size or varying sizes?

One submission queried whether all the birds tested should be the same size when the fluid loss limit is calculated over a number of birds. Industry has argued that the testing of fluid loss should be calculated over a number of birds, because variability will occur, particularly between different sized poultry. Therefore, different sized poultry could be used to determine this average.

8.3.1.7 Should the method of analysis be reviewed?

Many submissions supported changing the method of analysis to allow fluid loss to be calculated over a number of birds. This is considered within options 2 below.

8.3.2 Possible options and regulatory impact

Possible options to address the issue and their regulatory impact are discussed below.

8.3.2.1 Option 1 – Maintain the *status quo*

This means the 6% limit would be retained as well as the method of analysis. Poultry processors using water chilling have indicated they have difficulty meeting the 6% limit due to:

- the introduction of HACCP (in 1997) requiring:
 - additional washes and an increase in the volume and pressure of water used;
 - additional chilling time to achieve lower carcass temperatures; and
- the market demand for increased carcass weights – these larger carcasses requiring longer chilling times.

Industry has also indicated the method of analysis, by not allowing an average to be calculated over a number of birds, does not recognise the range in moisture uptake that occurs due to inherent variability in incoming flocks.

Industry has stated that if the current requirements are retained, food safety will be compromised to comply with the limits. Specifically, less contact time will occur in the chiller tanks. The chiller tanks lower carcass temperatures but also, provided free chlorine is available, can be effective at reducing microbial contamination of the carcass.

While industry has provided justification for increasing the limit to 8%, data provided from the Department of Health in WA, where the current 6% limit has been actively enforced, indicates poultry processors within this State can consistently meet the current limit, provided an average is calculated.

8.3.2.1.1 Regulatory impact

It is unclear whether industry can meet the 6% limit, without compromising food safety due to the contradiction between the information provided by industry and the Department of Health in WA. However, the information from the Department of Health in WA and industry suggests that the setting of an absolute limit may be unreasonable.

The regulatory impact of having to meet an absolute limit would be high if enforcement officers rigorously enforced the current fluid loss limit. Penalties would apply for any non-complying frozen birds. A greater impact would be supermarkets refusing to sell frozen poultry that was not in compliance. This was threatened when this issue arose and as poultry processor cannot always guarantee that frozen poultry will meet the 6% limit, they may not be able to sell their product. This option is therefore not preferred due to the potential difficulty and associated costs industry may experience when trying to comply with an absolute limit.

8.3.2.2 Option 2 – Retain a limit but allow this limit to be calculated over an average number of birds

There is conflicting evidence as to whether a 6 or 8% limit is appropriate. Industry strongly favours applying an 8% limit that is calculated as an average over 20 birds. However, the Department of Health in WA has indicated processors within this State can and do routinely meet the 6% limit.

Therefore, if a limit is to be applied, further discussions with industry and government should occur as to what would be an appropriate limit. A limit should allow for the unavoidable water uptake that occurs during poultry processing but not be too high such that it effectively permits the absorption of water excess to processing needs. In particular, discussions should occur with poultry processors in WA who appear to be consistently meeting the 6% limit, as to their views on this issue. While processors in New Zealand have had to comply with a 6% limit since it was introduced in the 1970s, they have indicated they have difficulty consistently meeting this limit.

Therefore, while it is debateable as to whether a 6 or 8% limit is appropriate, it seems reasonable to allow the limit to be calculated over a number of birds, to account for the variabilities that will occur. Allowing an average to be calculated was well supported in submissions.

8.3.2.2.1 Regulatory impact

Allowing an average to be calculated would go some way to addressing industry concerns with option one. However, there is conflicting evidence as to what an appropriate limit might be. If a limit were applied to frozen birds, it would only address the issue of water uptake in these birds. This issue applies to all poultry. Therefore, this option is not preferred, as it does not fully address the regulatory problem of water uptake in all poultry, in excess of processing needs.

8.3.2.3 Option 3 - Delete the requirement and defer to fair trading/Food Act offences

If the requirement were deleted and there was a concern that a poultry processor was allowing excessive water uptake to bulk product, recourse could be available through the:

- general offences under the State/Territory Food Acts which prohibit misleading or deceptive practices or sale of food not complying with purchaser's demands; or
- fair trading legislation.

Several State jurisdictions in Australia support deleting the fluid loss limit and deferring the matter to fair trading legislation.

In respect to fair trading legislation, the ACCC has advised that if the fluid loss limit were deleted, there is nothing specific in State/Territory fair trading legislation that would stop processors from adding excess water. However, consumers could have a case for being misled if the label does not indicate that water has been 'added'. State/Territory fair trading legislation is not enforced unless there is a complaint from a consumer or business. There would also be no guidance for processors as to what would be considered misleading unless it was provided.

Having no requirement in relation to the unnecessary uptake of water in poultry may not provide adequate assurance for consumers for the following reasons:

- if some poultry is bulked with water, and there is no labelling to this effect, consumers may be misled as they will be unknowingly paying for water;
- there would be no enforcement of water uptake in poultry and therefore poultry processors may maximise rather than minimise water uptake; and
- consumers concerned about water loss would need to make a complaint and in the absence of any guidance on what percentage of water uptake would be considered excessive, it may be difficult to assess whether this was occurring.

8.3.2.3.1 Regulatory impact

This option would be the least costly for industry and government, as there would be no requirement to comply with or enforce. However, it offers the least assurance to consumers that water uptake is being minimised by poultry processors.

If a poultry processor allowed water absorption to occur, in excess of processing needs to improve profit margins, the consumer may unwittingly pay more for poultry than it should.

8.3.2.4 Option 4 - Delete fluid loss limit and reinforce obligation to minimise water uptake under Standard 1.3.3 - Processing Aids

The limit on fluid loss for frozen poultry could be deleted and poultry processors specifically referred to their legal obligations under Standard 1.3.3 - Processing Aids, with respect to the use of water as a processing aid. Where water is used to assist with processing (such as for the removal of visible contamination from carcasses and for chilling), it must be used at the lowest level necessary to perform this processing function. For example, during chilling, the contact time with the poultry should be the minimum necessary to achieve the required temperature. If water is used in excess of what is necessary to meet processing needs, it is not considered a 'processing aid' but an ingredient that is added to the food and must therefore be declared in accordance with Standard 1.2.4 - Labelling of Ingredients. Added water must be declared if it constitutes 5% or more of the final food.

Poultry processors could be reminded of these legal obligations through the inclusion of an editorial note within the proposed Standard for poultry meat. As this Standard will only apply in Australia, the New Zealand Food Safety Authority has advised they would bring these obligations to the attention of their poultry processors through another mechanism. These obligations would be further explained in the interpretive guide for the Standard for Poultry Meat and would advise on appropriate practices to minimise water uptake and what would be considered to be a reasonable percentage of water uptake, having regard to bird size.

This option may better address the objective of setting a fluid loss limit, which is to minimise water uptake in frozen poultry by reinforcing the current legal obligations on poultry processors to ensure water uptake does not exceed what is unavoidable during primary processing. While a fluid loss limit would indirectly require poultry processors to minimise water uptake, fluid loss in itself, is not the issue. The issue is excessive water uptake.

The editorial note would also clarify that the obligations under Standard 1.3.3 apply to all poultry, not just frozen poultry. Water uptake is an issue for all poultry that is water chilled.

8.3.2.4.1 Regulatory impact

With this option, there is no regulatory impact for either industry or government as it is a reinforcement of the current obligations.

This option should benefit consumers, as it will highlight poultry processors obligations with respect to minimising water uptake in all poultry. However, there may be a concern that in the absence of an actual legal limit, enforcement will be more difficult and therefore consumers may not be as adequately protected. To address this concern, the guidance provided in the interpretive guide needs to be clear on what steps poultry processors need to take to minimise water uptake and the percentage of water uptake that would be considered reasonable.

8.3.2.5 Option 5 – Require the percentage of water uptake to be declared on the label

The discussion paper queried whether this issue could be addressed in other ways such as labelling poultry with the percentage of water content.

The Department of Health in Western Australia strongly supports the labelling of poultry with average percentage water content. However, it was not supported by industry. One industry submission stating that it is not practical or sensible to label carcasses with the percentage of water content. Industry submissions also queried its value to consumers with a New Zealand processor stating that as processors within New Zealand use similar processes, the percentage water content will be similar.

If labelling were required, it would be more meaningful for the percentage of water uptake to be declared. It would also need to be expressed as an average. Otherwise the percentage of water uptake for every poultry carcass would need to be determined and uniquely labelled, which would be very costly and impractical.

If an average were required to be included in the label, it is uncertain whether this would be effective in ensuring poultry processors minimise the amount of water absorbed by poultry during processing. It could provide an incentive to minimise water uptake, if a lower stated average percentage water pickup gave a poultry producer a competitive edge. For this to be effective, consumers would need to understand that the lower the stated percentage, the less retained water is present in the poultry and hence it represents better value for money.

This option could unduly penalise those poultry processors that exclusively use water for chilling as processors that use a combination of air and water or air only would have less water absorption occurring. The chicken meat industry has advised that approximately 75% of chicken carcasses are chilled using water only, with the remainder being chilled using a combination of water and air and a very small percentage air only.

8.3.2.5.1 Regulatory impact

This option is likely to be the most expensive for industry as in addition to minimising water uptake during processing, it would have to:

- calculate the average percentage of water uptake occurring; and
- print this average in the label.

It could also unduly penalise those processors who exclusively use water for chilling, which for chicken meat sector is approximately 75% of the market.

This option could potentially benefit consumers if poultry could be compared, through the average percentage of water stated on the label, to determine which is the best value for money. However, as indicated by a New Zealand processor, as the processes used are similar, the averages stated may also be similar.

Therefore, this option is not preferred due to the potential cost to processors, particularly those who use water for chilling. The benefit to consumers is also uncertain.

8.3.3 Preferred option

Option 4 is the preferred option (as discussed in section 9.2.8.4), which is to delete the current fluid loss limit for frozen poultry and refer poultry processors (through the inclusion of an editorial note in the Standard for poultry meat) to their legal obligations under Standard 1.3.3 - Processing Aids, with respect to the use of water as a processing aid.

This will indicate that where water is used to assist with processing it may only be used at the lowest level necessary to perform the processing function. Under Standard 1.3.3, if water is used in excess of what is necessary to meet the processing needs, it is no longer considered a 'processing aid' but rather an ingredient that is added to the food. As an ingredient, the water would need to be declared according to Standard 1.2.4 - Labelling of ingredients. Under Standard 1.2.4, added water must be declared if it constitutes 5% or more of the final food.

These obligations would be further explained in the interpretive guide for the Standard for Poultry Meat and would advise on appropriate practices to minimise water uptake and what would be considered to be a reasonable percentage of water uptake, having regard to bird size.

9. Conclusion and recommendations

9.1 Standard for Poultry Meat

9.1.1 Decision

The main outcome of Proposal 282 is draft Standard 4.2.2 - Primary Production and Processing Standard for Poultry Meat (see Attachment 1 for a copy of this Standard). The standard applies in Australia only, to all poultry primary production businesses and poultry food businesses.

Standard 4.2.2 will be a new national, through-chain standard for the poultry meat industry. The impact of these new requirements is expected to be minimal, particularly if a two-year implementation period is provided. However, comments from poultry farming operations and processors are welcome on the possible impacts.

The Standard does not include retail, as the risk assessment concluded that the potential risks from poultry at the retail stage of the poultry meat supply chain are adequately addressed through current management systems. However, the risk assessment did identify consumers as an important contributor to the safety of poultry meat and although consumers cannot be covered under a standard, FSANZ proposes to work with the Poultry Cooperative Research Centre in developing a more targeted food safety education strategy to improve consumer handling of raw poultry.

9.1.1.1 Requirements at primary production

Standard 4.2.2 will require a businesses involved in the growing of poultry intended for sale for human consumption (and includes breeding, hatching and transporting to the processing facility) to systematically examine all of their operations to identify potential poultry food safety hazards and implement controls that are commensurate with the food safety risk. In particular, the controls must minimise contamination of poultry from –

- (a) breeder stock; and
- (b) wild and domestic animals and birds; and
- (c) insects and rodents; and
- (d) drinking water; and
- (e) feed and litter; and
- (f) personnel; and
- (g) equipment.

9.1.2 Requirements at processing

- develop and implement a HACCP based food safety management system as currently required under State/Territory legislation which mandates compliance with the *Australian Standard for Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption AS 4465:2001* (the Australian Standard);
- comply with Standard 3.2.2 - Food Safety Practices and General Requirements and 3.2.2 - Food Premises and Equipment (to reflect current requirements in State/Territory legislation);
- be obligated to ensure farmers supplying them with poultry are minimising food safety hazards (to support the requirement on poultry primary production businesses); and
- maintain sufficient records to enable poultry and poultry meat products to be traced, where necessary for food safety.

9.2 Statement of Reasons

A Standard for Poultry Meat (Standard 4.2.2) specifying requirements at the primary production and processing stages of the poultry meat supply chain should be inserted into Chapter 4 of the Code for the following reasons:

- the proposed variation to the Code is consistent with the section 10 objectives of the FSANZ Act to reduce the incidence of food-borne illness in Australia through a whole-of-chain approach to the safety of poultry;
- at the primary production stage, the new requirement for poultry farming operations to control their food safety hazards will address the residual risk identified by the scientific assessment, with the aim of lowering the percentage of poultry contaminated with *Salmonella* and *Campylobacter* spp;
- at the processing stage, although the scientific assessment did not identify a residual risk/no gaps in current strategies, the transfer of the current food safety requirements for poultry processing within State/Territory legislation³³ to a Standard for Poultry Meat, will enable a whole-of-chain approach to the safety of poultry within the Code;
- the new legal requirements proposed for poultry farming operations and processors strengthen existing arrangements between processors and poultry farmers that supply processors, by enabling enforcement agencies to scrutinise these existing arrangements and to intervene where necessary; and

³³ These food safety requirements are set out in *Australian Standard for Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption AS 4465:2001*, which State/Territory legislation requires poultry processors to comply with.

- the cost-benefit analysis indicates that Standard 4.2.2 is the most cost effective means of addressing the food safety hazards within the poultry meat supply chain.

9.3 Other poultry requirements in the Code

Two existing requirements within the Code that apply to poultry were evaluated as part of this proposal. The recommended risk management strategies for each of these are outlined below.

9.3.1 Eviscerated Poultry

9.3.1.1 Decision

It is recommended that clause 4 of Standard 1.6.2 - Processing Requirements be deleted. This clause permitted poultry to be sold that was not completely eviscerated. This standard applies in Australia only.

9.3.1.2 Statement of Reasons

Clause 4 of Standard 1.6.2 - Processing Requirements be deleted for the following reasons:

- it permits poultry to be sold that is not completely eviscerated which is in conflict with the Australian Standard which requires poultry to be completely eviscerated and is currently mandatory under State and Territory legislation; and
- partly eviscerated poultry has the potential to be highly contaminated with pathogenic bacteria and therefore poses an unacceptable risk to consumers.

9.4 Limit on fluid loss from thawed poultry

During the development of the standard, the Australian poultry industry raised concerns that it may not be feasible to consistently meet the current legal limit applying to fluid loss from frozen whole birds. The current fluid loss limit in the Code is 60 g/kg (6%) of thawed poultry and was set in 2000 as part of the process of developing a meat standard for the joint Australia New Zealand Food Standards Code. Prior to this, the limit for fluid loss was 80 g/kg (8%) in Australia and 60 g/kg in New Zealand. The Australian poultry industry has indicated a preference for returning to the 8% limit. A limit is set in the Code to prevent fraudulent practices i.e. to prevent the bulking of frozen poultry with water.

9.4.1 Decision

The preferred option is to delete the current fluid loss limit for frozen poultry and refer poultry processors (through the inclusion of an editorial note in the Standard for poultry meat) to their legal obligations under Standard 1.3.3 (Processing Aids), with respect to the use of water as a processing aid.

This will indicate that where water is used to assist with processing it may only be used at the lowest level necessary to perform the processing function. Under Standard 1.3.3, if water is used in excess of what is necessary to meet the processing needs, it is no longer considered a 'processing aid' but rather an ingredient that is added to the food. As an ingredient, the water would need to be declared according to Standard 1.2.4 (Labelling of ingredients).

Under Standard 1.2.4, added water must be declared if it constitutes 5% or more of the final food.

These obligations would be further explained in the interpretive guide for the Standard for Poultry Meat and would advise on appropriate practices to minimise water uptake and what would be considered to be a reasonable percentage of water uptake, having regard to bird size.

9.4.2 *Statement of Reasons*

The current fluid loss limit in clause 2 of Standard 2.2.1 - Meat and Meat Products should be deleted for frozen poultry and replaced with an editorial note in the Standard for Poultry Meat for the following reasons:

- the poultry industry has indicated it can no longer consistently meet the current 6% limit due to changes in the processing of poultry because of the implementation of Hazard Analysis and Critical Control Programs (HACCP) in 1997 and a market preference for larger birds;
- setting a fluid loss limit for frozen poultry is problematic because the issue is excessive water uptake occurring during processing for all poultry, not just frozen poultry – a fluid loss limit is an indirect way of measuring water uptake in frozen poultry only; and
- poultry processors are already legally obligated to minimise water uptake during the processing of poultry under the Standard 1.3.3 (Processing Aids) – if this does not occur, the water used is considered an ingredient and must be declared in accordance with Standard 1.2.4 (Labelling of Ingredients).

10. Implementation and review

10.1 Implementation of the proposed Standard for Poultry Meat

Once accepted into the Code, the proposed Standard for Poultry Meat would become mandatory in Australia only on a national basis. It would then be adopted into the appropriate legislation of each Australian State and Territory, providing each jurisdiction with the necessary legal basis for enforcement of the standard.

Factors influencing successful implementation of the standard include:

- implementation timeframe;
- provision of a suitable compliance timeframe for industry (it is proposed that businesses will have 2 years from the gazettal of Standard before they are required to comply with the new requirements); and
- implementation of appropriate audit management and inspection systems and appropriate tools to provide assistance and guidance to industry (of which many currently exist).

Because of the non-prescriptive nature of the new Primary Production and Processing Standards, interpretive documents are essential for enforcement officials (such as Environmental Health Officers) to assist with consistent implementation and for training organisations helping poultry businesses to meet the requirements of new standards.

FSANZ will develop an interpretive guide to the Standard for Poultry Meat, in consultation with the standard development committee, to aid consistent interpretation of the standard by enforcement agencies. The guide will explain the requirements of the Standard for Poultry Meat and briefly summarise other requirements in the Code, that apply to poultry meat (requirements in Chapters 1 and 2 of the Code).

The guide will be developed in conjunction with jurisdictions, industry and the Implementation Sub-Committee (ISC) of the Food Regulation Standing Committee (FRSC).

Implementation is the responsibility of the States and Territories. The issue of how State and Territory legislation will apply to primary production (currently these are not considered to be food businesses) under the Model Food Act/State and Territory Food Acts is a matter that will need consideration. The FRSC Primary Products Working Group and ISC are currently examining this matter further.

ISC facilitates consistent national implementation of food standards. ISC is charged with responsibility for overseeing cross-jurisdictional agreement on consistent approaches to implementing and ensuring compliance with food standards. To facilitate this, ISC is developing nationally endorsed principles and criteria for the implementation of the primary production standards. To ensure the Standard for Poultry Meat is implemented in accordance with these principles and criteria, editorial notes have been inserted following clauses 3 and 6 to refer to these.

10.2 Review of the proposed risk management strategies

In some cases it is not possible to measure the effect of implementing a food standard against the end objective. This is because the external influences on public health and safety as a whole are so complex and influenced by many external factors that a measured change to the level of public health and safety of a given population group cannot generally be attributed to a single influence, a single agency or action by an agency, such as a change in food regulatory measures. This will be especially the case in PPP standards as they aim to protect public health and safety by reducing the risk of food borne illness and contamination across the entire food chain.

In addition, other factors apart from the standard itself impinge on the safety of the food consumed, such as the level of enforcement of the standards at the place where the ingredients or whole food are manufactured or sold, a consumer's own actions once the food is purchased in terms of appropriate storage and preparation of that food and their individual susceptibility to microbiological hazards. It would, therefore, not be likely to attribute the introduction of a standard to changes in the prevalence of food borne illness in the population as a whole.

However, to produce safe food there are several interim steps that need to occur, for which reasonable performance measures can be developed to assess if these interim objectives have been achieved.

For example, FSANZ can assess food businesses' awareness and understanding of the new standards; and/or assess their actual practice in relation to implementing key elements of the standards. If the results from these assessments indicate that the introduction of a standard has had a positive outcome, then it can be assumed that this in turn will be a starting point for improvements in overall food safety and public health.

Therefore to enable future evaluation of the Standard for Poultry Meat, FSANZ initiated a survey, as part of its Evaluation Strategy,³⁴ collecting baseline data on awareness, knowledge and behaviour of participants from all stages of the poultry meat supply chain³⁵, enforcement officers and consumers in relation to food safety issues. The final report of this benchmark survey has now been completed by Colmar Brunton Social Research (See Attachment 7 for executive summary) and is available on the FSANZ website.

FSANZ intends to undertake future follow-up research at least two years following implementation of the Standard for Poultry Meat in all States and Territories to assist in evaluating the effectiveness of the standard.

References

ANZFA, *Food Safety Standards Costs and Benefits*, Commonwealth of Australia, 1999.

COAG (Council of Australian Governments) 2004a as amended, *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies* <http://www.coag.gov.au/meetings/250604/coagpg04.pdf> (accessed 2 November 2005).

Colmar Brunton Social Research *Benchmark research on the Poultry Meat Industry*, Canberra ACT, June 2005.

Kirk M, Own R, Oxenford C *Foodborne Disease Associated with Chicken meat & Eggs*, OzFoodNet Unpublished Data, 2005.

Standards Australia, *Australian Standard for Construction of premises and hygienic production of poultry meat for human consumption*, AS 4465-2001, Standards Australia International Ltd, Australia, 2001.

The Allen Consulting Group, *Food Safety Management Systems - Costs, Benefits and Alternatives*, Final Report to the Commonwealth Department of Health and Ageing, May 2002.

³⁴ The Evaluation Strategy aims to assess how well regulatory arrangements, contained in the *Australia New Zealand Food Standards Code* (the Code), are working in relation to the objectives stated in the *Food Standards Australia New Zealand Act 1991* (FSANZ Act) for setting food standards. The outcome evaluation process aims to provide information on the effectiveness and appropriateness of food standards that will assist in developing or amending food standards in the future. Evaluation of the new primary production and processing standards has been identified as one of the evaluation activities to be undertaken under that Strategy for 2004-2008.

³⁵ The three groups surveyed were the poultry meat industry (primary producers, processors, wholesalers, retailers), enforcement officers (local government officers, officers from State / Territory departments), and consumers.

Attachments

1. Draft variation to the *Australia New Zealand Food Standards Code*
2. Food safety management strategies in the poultry meat supply chain
3. Summary of the *Scientific Assessment of the Public Health and Safety of Poultry Meat in Australia*
4. Requirements for the importation of fertilised eggs
5. Summary of submissions from the Initial Assessment Report
6. Summary of submissions from the discussion paper, Limit on fluid loss from thawed poultry
7. Summary of the *Benchmark Research on the Poultry Meat Industry*
8. Requirements for poultry meat and poultry meat products in the *Australia New Zealand Food Standards Code*

Draft variation to the *Australia New Zealand Food Standards Code*

To commence: 12 months from gazettal

Note on commencement:

Subclause 1(2) of Standard 1.1.1 applies to these amendments to the Code. The effect of this subclause is that a food is taken to comply with Standard 4.2.2 for a period of 12 months after the commencement of the Standard, provided the food otherwise complied with the Code. This means that poultry primary production businesses and poultry food businesses (as defined in the Standard) have 2 years from the gazettal of Standard 4.2.2 before they are required to comply with the new requirements.

The Australia New Zealand Food Standards Code is varied by inserting –

STANDARD 4.2.2

**PRIMARY PRODUCTION AND PROCESSING STANDARD FOR
POULTRY MEAT
(AUSTRALIA ONLY)**

Purpose and commentary

Reserved

Table of Provisions

Division 1 – Preliminary

- 1 Interpretation
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Division 4 – Production of ready-to-eat poultry meat

- 8 Requirements for producers of ready-to-eat poultry meat

Clauses

Division 1 – Preliminary

1 Interpretation

(1) Unless the contrary intention appears, the definitions in Chapter 3 of this Code apply in this Standard.

(2) In this Standard –

carcass means the whole dressed body of slaughtered poultry, but excludes any part that has been removed from the dressed body, for example, the head, feathers, viscera and blood.

poultry means chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl and other avian species (except ratites).

poultry food business means a business, enterprise or activity that involves the processing of poultry intended for sale for human consumption.

poultry primary production business means a business, enterprise or activity that involves the growing of poultry intended for sale for human consumption and includes –

- (a) breeding; and
- (b) hatching; and
- (c) transporting between poultry primary production businesses and to a poultry food business.

Editorial note:

Under this definition a poultry primary production business includes the activities on breeding farms, hatcheries and broiler farms.

processing of poultry means the –

- (a) holding before slaughter; or
- (b) stunning; or
- (c) slaughtering; or
- (d) bleeding; or
- (e) scalding; or
- (f) defeathering; or
- (g) removing of head or feet; or
- (h) removing of viscera; or
- (i) washing or trimming; or
- (j) chilling or freezing; or
- (k) deboning or portioning; or
- (l) marinading; or
- (m) injecting or massaging; or
- (n) crumbing; or
- (o) cooking; or

- (p) packaging;

of poultry, carcasses or poultry meat, as the case may be, and similar activities.

unacceptable carcass means a carcass that has, or is reasonably suspected of having been, affected by a disease or condition that makes it unsafe or unsuitable.

unacceptable poultry means poultry that is dead prior to slaughter or poultry that has, or is reasonably suspected of having been, affected by a disease or condition that makes it unsafe or unsuitable.

2 Application

- (1) This Standard does not apply in New Zealand.
- (2) This Standard, other than Division 4, does not apply to retail sale activities.

Division 2 – Primary production of poultry

3 Requirement on poultry primary production business

- (1) A poultry primary production business must systematically examine all of its primary production operations to identify potential poultry food safety hazards and implement controls that are commensurate with the food safety risk.
- (2) Without limiting the generality of subclause (1), the controls must minimise contamination of poultry from –
 - (a) breeder stock; and
 - (b) wild and domestic animals and birds; and
 - (c) insects and rodents; and
 - (d) drinking water; and
 - (e) feed and litter; and
 - (f) personnel; and
 - (g) equipment.

Editorial note:

These controls are to be implemented in accordance with nationally endorsed principles and criteria.
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Division 3 – Processing of poultry

4 Application

- (1) To avoid doubt, Standards 3.2.2 and 3.2.3 apply to the processing of poultry, other than the holding of poultry before slaughter.

5 Poultry for processing

- (1) A poultry food business must not process poultry unless it has been received from a poultry primary production business that complies with clause 3 of this Standard.
- (2) A poultry food business must keep records that demonstrate that it meets the requirements of this clause.

6 Food safety management system

- (1) A poultry food business must implement a documented food safety management system that effectively controls the hazards.
- (2) Without limiting the generality of subclause (1), the controls must -
 - (a) address the removal of unacceptable poultry prior to slaughter and unacceptable carcasses during processing; and
 - (b) address the minimising of contamination of poultry, carcasses and poultry meat; and
 - (c) minimise the levels and growth of pathogenic micro-organisms potentially present on the carcass or poultry meat.

Editorial note:

The system referred to in clause 6 is to be implemented in accordance with nationally endorsed principles and criteria.

‘Hazard’ is defined in Standard 3.1.1 as a biological, chemical or physical agent in, or condition of, food that has the potential to cause an adverse health effect in humans.

‘Contamination’ is defined in Standard 3.1.1 as the introduction or occurrence of a contaminant.

‘Contaminant’ is also defined in Standard 3.1.1 as any biological or chemical agent, foreign matter, or other substances that may compromise food safety or suitability.

- (2) A poultry food business is taken to comply with subclause (1) if it implements –
 - (a) the Codex Alimentarius Hazard Analysis and Critical Control Point System (HACCP) for food safety management set out in Annex to CAC/RCP 1-1969, revision 4 (2003); or
 - (b) any other Hazard Analysis and Critical Control Point (HACCP) based food safety management system recognised by the Authority.

7 Traceability

A poultry food business must maintain sufficient written records to identify the immediate supplier and immediate recipient of poultry or poultry meat products for the purposes of ensuring the safety of the poultry meat products.

Editorial note:

Water used to assist with processing (for example, the removal of visible contamination from carcasses or for chilling) may only be used at the lowest level necessary to perform the processing function. Poultry food businesses should refer to Standard 1.3.3 -Processing Aids, which contains the legal obligations concerning the use of water as a processing aid.

Under Standard 1.3.3, if water is used in excess of what is necessary to meet the processing needs, it is no longer considered a ‘processing aid’ but rather an ingredient that is added to the food. As an ingredient, the water would need to be declared according to Standard 1.2.4 - Labelling of ingredients. Under Standard 1.2.4, added water must be declared if it constitutes 5% or more of the final food.

Division 4 – Production of ready-to-eat poultry meat

8 Requirements for producers of ready-to-eat poultry meat

(1) Division 3 of Standard 4.2.3 (ready-to-eat meat) applies to the producers of ready-to-eat poultry meat.

Drafting note:

This clause relates to Proposal P289 (Food safety plans for manufactured meat) and is included for completeness only – it is not part of Proposal P282 Primary Production and Processing Standard for Poultry Meat.

Food safety management strategies in the poultry meat supply chain

At the primary production level there are no specific management strategies designed or implemented to address food safety. The management strategies that do exist and could impact on food safety at primary production include:

- regulations for the importation of fertilised eggs and for the registration, sale and use of pesticides and veterinary medicines; and
- regulations and codes of practice for poultry feed (general stock feed requirements), poultry farming practices, animal health and welfare and the transportation of live poultry to the slaughter facility.

At the processing level, State and Territory regulations require that a hazard analysis critical control point (HACCP) plan be in place from slaughter to the 'back door' of retail. There are also other food safety requirements in the *Australia New Zealand Food Standards Code* (the Code)³⁶ and in the various codes of practice for animal welfare during slaughter. Certain industry groups also have operating procedures or similar programs that must be followed by all facilities within that group.

Food safety at retail establishments is covered by Chapter 3 of the Code, which is adopted under State and Territory regulations.

The primary strategy to address food safety at the consumer level is through the promotion of food safety awareness. These promotions are generally not specific for the poultry meat industry and are presented to consumers on an ad hoc basis. Such food safety promotions could also be targeted at the other stages of the poultry meat supply chain (e.g. growers, processors etc).

³⁶ Although the food safety standards in the *Australia New Zealand Food Standards Code* apply to processing, in practice these standards are not enforced at this level.

Food safety management strategies relevant to the primary production of meat poultry

Regulatory or Non-regulatory Strategy		Comments
Requirements for the Importation of Fertilised Eggs		
AQIS	Import Conditions for Eggs-Fertile	<ul style="list-style-type: none"> The importation of fertilised eggs is not permitted for all poultry species, with the Australian Quarantine and Inspection Service (AQIS) only permitting the importation of fertilised chicken, duck and turkey eggs and only from approved countries.
Registration, Sale and Use of Pesticides and Veterinary Medicines		
APVMA	Pesticides and Veterinary Medicines	<ul style="list-style-type: none"> The APVMA is responsible for registration, granting permits for the use of chemical products and regulating the sale of pesticides and veterinary medicines. Their evaluation of these products prior to registration includes the intended use and effects of food processing on levels of pesticides and veterinary medicines. For antimicrobial agents, the APVMA also seeks approval from the NHMRC Expert Advisory Group on Antimicrobial Resistance prior to a product being registered.
FSANZ	Code: Standard 1.4.1 – Contaminants Natural Toxicants Standard 1.4.2 – Maximum Residue Limits	<ul style="list-style-type: none"> Although these standards are not enforced at the primary production level, the appropriate use of pesticides and veterinary medicines ‘on-farm’ will ensure that Standard 1.4.1 and 1.4.2 are met at the point of sale. State and Territory agencies are responsible for testing products at the point of sale for residues. It is illegal to sell food products that contain chemicals at levels that exceed the maximum residue limit. Maximum residue limits in human food products are set in conjunction with the APVMA.
State and Territory Governments	State and Territory ‘Control of Use’ legislation	<ul style="list-style-type: none"> State and Territory agencies regulate the use of pesticides and veterinary medicines after sale, through ‘Control of Use’ legislation.
Requirements for Poultry Feed		
State and Territory Governments	Stock Feed regulations	<ul style="list-style-type: none"> State and Territories are responsible for the control of production and use of animal feeds. These regulations vary between States/Territories and cover general labelling requirements and feed ingredients. The latter is primarily chemical, mineral and nutrient requirements rather than microbiological contamination.

Regulatory or Non-regulatory Strategy		Comments
Stock Feed Industry	Codes of Good Manufacturing Practice, Codes of Practice and Guidelines.	<ul style="list-style-type: none"> The feed industry has a number of codes of good manufacturing practice, codes of practice and guidelines for feed production. These address a variety of issues from construction of premises to operation of plants and information on feed ingredients.
FSANZ	Standard 1.5.2 – Food Produced Using Gene Technology	<ul style="list-style-type: none"> This standard regulates the use of genetically modified organisms (GMO) in human food. Although it is not solely related to the poultry meat industry, feed containing GMO may be given to poultry. Only those GMO that are permitted for use in human food are permitted for use in livestock industries. FSANZ amends this standard in conjunction with the Office of the Gene Technology Regulator.
Animal Health and Welfare Requirements		
State and Territory Governments	Animal Health and Welfare regulations.	<ul style="list-style-type: none"> Animal health and welfare is regulated under State and Territory regulations. These regulations set out the requirements for disease notifications and provision of adequate food, drink for animals and protection of animals from cruelty.
Primary Industries Standing Committee	Code of Practice for the Welfare of Animals- Domestic Poultry	<ul style="list-style-type: none"> The Code of Practice for the Welfare of Animals- Domestic Poultry addresses areas such as housing, space allowances per bird, lighting, ventilation, health and distress, food and water requirements and has specific requirements for hatcheries. Compliance with this code of practice is implied by compliance with the <i>Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i>, which is mandated by a number of State and Territory Governments.
Controls over Poultry Farming Practices		
State and Territory Governments	Codes of practice and guidelines for poultry farming	<ul style="list-style-type: none"> These codes of practice/guidelines vary between States and Territories and generally cover environmental issues such as pollution, or layout and construction of meat poultry farms. In some States and Territories these measures must be complied with for registration of the premise or for compliance with other regulations, such as animal welfare or environmental regulations.
Industry	Guidelines for organic and free-range production	<ul style="list-style-type: none"> These guidelines are set by industry and cover issues such as housing, feed and water, free-range run, husbandry practices, pest control, cleaning and maintenance, slaughter and product labelling. These guidelines can apply either at a State/Territory level or at a national level. Compliance by a farm with one of these guidelines is required for poultry meat products derived from birds on that farm to be able to be certified as ‘free-range’ or ‘organic’.

Regulatory or Non-regulatory Strategy		Comments
Industry	National Biosecurity Manual Contract Meat Chicken Farming	<ul style="list-style-type: none"> This manual is a guide for meat chicken growers which sets out biosecurity requirements. Areas covered include facility standards, personnel standards and operational standards. This manual also has record-keeping templates for some farm practices.
Requirements for the Transportation of Live Birds to the Slaughter Facility		
State and Territory Governments	Animal Welfare regulations	<ul style="list-style-type: none"> Transport of poultry to slaughter facilities is regulated by State and Territory Governments under their animal welfare legislation and the associated codes of practice. These regulations set out the requirements for adequate provision of water for birds and protection of birds from environmental conditions during transport.
Primary Industries Standing Committee	Code of Practice for the Welfare of Animals- Land Transport of Poultry	<ul style="list-style-type: none"> The Code of Practice for the Welfare of Animals- Land Transport of Poultry, sets out requirements for minimising stress, preparations required, measures to load and unload birds and requirements for transport vehicles. This code of practice is referred to by the Code of Practice for the Welfare of Animals- Domestic Poultry.
General		
Various sources	Promotion of food safety	<ul style="list-style-type: none"> It is not clear if there are any food safety promotion mechanisms used at the primary production level, due to the focus on animal health.

Food safety management strategies relevant to the processing of poultry meat products

Regulatory or Non-regulatory Measure		Comments
Requirements for Slaughter of Poultry		
State and Territory Governments	Meat /Food Production regulations	<ul style="list-style-type: none"> Most State and Territories have adopted the <i>Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i> under their Meat/Food Production regulations. The Australian Standard requires that a HACCP plan be in place at all activities in the processing of poultry meat, including slaughter. For those States and Territories who do not specifically mandate the Australian Standard, the requirement for a food safety program being implemented at slaughter has been legislated.
Primary Industries Standing Committee	Code of Practice for Livestock at Slaughter Establishments	<ul style="list-style-type: none"> This code of practice sets guidelines for pre-slaughter holding and holding times for poultry and catching, shackling, stunning and bleeding out of poultry. Compliance with the code of practices is implied by compliance with the <i>Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i>, which is mandated by a number of State and Territory Governments.
Requirements for Primary Processing - Dressing the Carcass		
State and Territory Governments	Meat/Food Production regulations	<ul style="list-style-type: none"> Most State and Territories have adopted the <i>Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i> under their regulations. The Australian Standards requires that a HACCP plan be in place at all activities in the processing of poultry meat. For those States and Territories who do not specifically mandate the Australian Standard, the requirement for a food safety program being implemented at all steps in processing has been legislated.
Requirements for Secondary Processing – From a Dressed Carcass to a Finished Product		
State and Territory Governments	Meat/Food Production regulations	<ul style="list-style-type: none"> Most State and Territories have adopted the <i>Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i> under their regulations. The Australian Standards requires that a HACCP plan be in place at all activities in the processing of poultry meat. For those States and Territories who do not specifically mandate the Australian Standard, the requirement for a food safety program being implemented at all steps in processing has been legislated.

Regulatory or Non-regulatory Measure	Comments
FSANZ Code: Chapter 1 – General Food Standards Chapter 2 – Food Product Standards Chapter 3 – Food Safety Standards	<ul style="list-style-type: none"> Some State and Territory regulations also require compliance with the Food Safety Standards of the Food Standards Code. State and Territory Governments that do not require compliance with the Food Standards Code at the processing level do require similar food hygiene and safety standards to those in the Code in their regulations. Other standards in the Food Standards Code that may be implemented during secondary processing, even though compliance is regulated at the point of sale, are labelling, substances added to food, microbiological limits, processing requirements, food product standards, articles in contact with food, novel foods.
Transport of Poultry Meat Products	
State and Territory Governments Meat/Food Production regulations	<ul style="list-style-type: none"> Most State and Territories have adopted the <i>Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption</i> under their regulations. The Australian Standard requires that a HACCP plan be in place at all activities in the processing of poultry meat up to the backdoor of retail. For those States and Territories who do not specifically mandate the Australian Standard, the requirement for a food safety program being implemented for transport of poultry meat products has been legislated.
FSANZ Code	<ul style="list-style-type: none"> The food safety standards in the Code also contain requirements for transportation of food products between food businesses.
General	
Various sources Promotion of food safety	<ul style="list-style-type: none"> There are likely to be a number of mechanisms to promote food safety at the processing stage. These could include fact sheets and flyers produced by government agencies, and industry bodies.

Food safety management strategies relevant to the retail of poultry meat products

Regulatory or Non-regulatory Measure		Comments
Retail		
State and Territory Governments	Food/Food Production/Health/Meat regulations	<ul style="list-style-type: none"> Most States and Territories require retail establishments to comply with the Food Standards Code, or have similar requirements in terms of food safety, hygiene and handling.
FSANZ	Code: Chapter 3 – Food Safety Standards	<ul style="list-style-type: none"> All food products at the point of sale must comply with the Food Standards Code. The food safety standards of the Code details practices which if complied with will ensure food does not become unsafe or unsuitable. Adoption of the Code by State and Territory Governments is required as set out by the <i>Food Regulation Agreement 2002</i>.
Various sources	Promotion of food safety	<ul style="list-style-type: none"> There are likely to be a number of mechanisms to promote food safety at the retail stage. These could include fact sheets and flyers produced by government agencies and industry bodies.

Food safety management strategies relevant to the consumer of poultry meat products

Regulatory or Non-regulatory Measure		Comments
Consumer		
Various sources	Promotion of food safety	<ul style="list-style-type: none"> There are numerous food safety education mechanisms used at the consumer level. These include fact sheets and flyers produced by government agencies, safety information provided on the product packaging by industry, articles and tips in magazines and on television etc.

Requirements for the importation of fertilised eggs

There are three main requirements in the AQIS import regulations that address the presence of pathogens:

1. All eggs must be accompanied by a veterinary certificate certifying to a number of requirements depending on the disease status of the country of origin and the vaccination status of the source flock. The requirements include declarations of disease-free status of source flocks;
2. Eggs for import must be fumigated or disinfected prior to packing in a sealed, air-tight, leak-proof container; and
3. The imported eggs are hatched at a quarantine station or approved private quarantine facility. The conditions in these facilities are set out in an Approved Quarantine Directive Manual. The hatched chicks must remain in quarantine for a period of 9 weeks and are only released subject to satisfactory results of an extensive testing program prescribed by AQIS. Testing of the hatchlings for various diseases is undertaken prior to their release. Flocks that do not pass the tests or are infected with other pathogens (identified at the discretion of enforcement officers) are destroyed.

Summary of submissions from the Initial Assessment Report

Eleven submissions were received for P282. The submissions were from:

- Australian jurisdictions:
 - Department of Health, Western Australia
 - Department of Primary Industries and Resources, South Australia
 - Queensland Health
 - Department of Primary Industries, Water and Environment, Tasmania
 - NSW Food Authority
- New Zealand Food Safety Authority
- Industry groups
 - Australian Food and Grocery Council
 - Food Technology Association of Victoria
 - Ingham's Enterprises
 - Coles Myer Ltd
- Australian Consumers' Association

The submissions provided valuable information and data which has been used to inform the risk assessment and proposed risk management options.

The details of each submission, and the response to each point raised is described in the following tables.

Submitter	Comments
Support for the Standard	
Department of Health, Western Australia	The proposal is generally supported.
Australian Food and Grocery Council (AFGC)	The AFGC supports the development of a Primary Production and Processing Standard for Poultry Meat and supports the principle of minimum effective regulation.
Food Technology Association of Vic (FTA Vic)	The FTA agrees with the general concept of the PPP Standard for Poultry Meat.
Qld Health	Queensland Health supports the development of a Primary Production and Processing Standard for Poultry Meat.
Australian Consumers Association (ACA)	The ACA supports the development of a through-chain standard to manage the food safety risks associated with poultry meat.
Coles Myer	Coles Myer has recognised the need for a specific poultry processing standard, and is in the process of preparing one. We expect this would work in conjunction with, or may indeed be superseded by, the PPP Standard.

Submitter	Comments	Response
General Comments		
ACA	Poultry meat can significantly contribute to the incidence of food-borne illness, as it is a popular choice of meat for many consumers. For this reason, the food safety risks associated with poultry meat must be appropriately managed.	This was noted as it highlights the importance of the proposed standard
	The minimisation of pathogen levels at all stages in the poultry meat supply chain will reduce the likelihood and extent that inappropriate food handling practices further along the chain will result in food-borne illness.	This was considered in the development of the proposed standard. The proposed standard was developed to ensure a national, through-chain, preventative approach to food safety. The proposed standard requires all sectors of the poultry meat industry to control known risks.

Submitter	Comments	Response
General Comments		
	Consumer health would benefit from all sections of the poultry meat supply chain having minimum level of mandatory food safety regulation and some degree of consistency between States and Territories.	This was considered in the development of the proposed standard. The proposed standard was developed to ensure a through-chain preventative approach to food safety. The proposed standard will ensure that all sections of the poultry meat supply chain will have a minimum level of mandatory food safety regulation and as it is a national standard, some degree of consistency between States and Territories.
Coles Myer	As a business that operates nationally, we always seek national consistency in the application of food law and regulation. It is expected that any food regulation of the nature of the PPP Standard results in demonstrable control of known risks in the preparation and consumption of poultry meat products.	This was considered in the development of the proposed standard. The proposed standard was developed to ensure a national, through-chain, preventative approach to food safety. The proposed standard requires sectors of the poultry meat industry to control known risks.
	All major food safety impacts prior to slaughter and during processing appear to have been captured in the report.	This was noted and supports the thoroughness of work done.
DPIWE (Tas)	All Tasmanian poultry meat operations are vertically integrated from production through to at least the packaging of raw product.	This was considered during the development of the proposed risk management strategies.
DPIWE (Tas)	Benefits in terms of consistency and better food safety management should arise from having a consistent through chain, HACCP based approach that includes all retail chicken meat activities.	This was considered in the development of the proposed standard. The proposed standard was developed to ensure a national, through-chain, preventative approach to food safety. The proposed standard requires sectors of the poultry meat industry to control known risks. The standard does not cover retail activities.
NSW Food Authority	The chicken industry is a highly integrated and efficient industry. Price pressures are significant and there is a risk of shortcuts to further cut processing costs. Other poultry meat sectors do not have the same price pressures and often the initial product is more highly valued. A specialised niche sector is often more demanding with a particular quality focus. This is sometimes lacking in the chicken industry, which is geared to mass production.	This was noted.

Submitter	Comments	Response
General Comments		
	Although vertical integration in the chicken industry inherently allows for better control over production and processing, food safety threats are considered more severe in the chicken industry as evidenced not only in Australia but also in many countries.	<p>This was considered during the development of the proposed risk management strategies.</p> <p>The importance of the chicken sector of the poultry industry was considered in the development of the proposed standard.</p>
	Successful control of food-borne pathogens requires a through-chain approach starting at farm level. This integrated strategy is lacking in the Australian system.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard was developed to ensure a through-chain preventative approach to food safety. The proposed standard starts at the farm level and an integrated strategy for addressing food safety in Australia.</p>

Submitter	Comments	Response
Scope of the Standard		
AFGC	Quality attributes and production methodologies not related to food safety and requirements already present in the Code are excluded and standards should not be duplicated.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>The proposed standard only includes food safety requirements and does not include quality attributes or specific production methodologies that do not relate to food safety.</p> <p>The proposed standard does not duplicate existing requirements in the Code.</p>
	Breeder farms, hatcheries, broiler farms and layer farms are not currently covered by the Code.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>The proposed standard covers breeder farms, hatcheries and broiler farms.</p> <p>Layer farms are not covered as these relate to egg production and will be examined in the proposed PPP Standard for Eggs.</p>

Submitter	Comments	Response
Scope of the Standard		
Coles Myer	Wild-caught species have an increased food safety risk, and the PPP Standard should protect consumers of these birds from these risks.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>Wild-caught species (game birds) are covered by the standard in so far as the processing activities in the standard are applicable to wild-caught species. However, pre-processing activities are not included for wild-caught species.</p>
Coles Myer	The Standard should apply to all raw poultry meat, whether it is packaged for consumption as is (whole, portioned or boned out), or intended to be used in other products (further processing). It is difficult to see how the Standard could apply to further processed/value added poultry products (raw, partially or fully cooked) and these products are handled under Chapter 3 of the Code.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>The proposed standard covers all poultry food businesses involved in processing poultry for human consumption. In the proposed standard, processing includes, amongst others, the following activities:</p> <ul style="list-style-type: none"> • washing or trimming; or • chilling or freezing; or • deboning or portioning; or • marinading; or • injecting or massaging; or • crumbing; or • cooking; or • packaging; and • similar activities <p>of poultry carcasses or poultry meat.</p> <p>The standard does not apply to retail sale activities.</p>
Department of Health, Western Australia	Free-range or organically produced birds should not be considered as these issues can be dealt with under Fair Trading or ACCC legislation.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>The proposed standard will apply to all poultry growers, including those involved in free-range and organic production in so much that it sets requirements for the growing of all poultry for human consumption. However, issues that are specific to free-range or organic practices are outside the scope of the standard.</p>

Submitter	Comments	Response
Scope of the Standard		
Ingham's, ACMF and Birling Labs	All poultry should be included in this standard including emus, ostriches, game birds etc.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>Ratites (emus and ostriches) are not included in the standard. This decision was made following advice from the SDC that the processing requirements for ratites are significantly different to those for other poultry.</p> <p>Wild-caught species (game birds) are covered by the standard in so far as the processing activities in the standard are applicable to wild-caught species. However, pre-processing activities are not included for wild-caught species.</p> <p>The proposed standard defines poultry as: <i>chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl and other avian species (except ratites).</i></p>
NSW Food Authority	Consumers often consider further processed product safer and don't handle them with the care required. It is important to extend food safety requirements to fully cover all further processing of poultry product.	<p>This was considered in the development of the scope of the proposed standard.</p> <p>The proposed standard covers all poultry food businesses involved in processing poultry for human consumption. In the proposed standard, processing includes, amongst others, the following activities:</p> <ul style="list-style-type: none"> • washing or trimming; or • chilling or freezing; or • deboning or portioning; or • marinading; or • injecting or massaging; or • crumbing; or • cooking; or • packaging; and • similar activities <p>of poultry carcasses or poultry meat.</p>

Submitter	Comments	Response
Definition of Poultry		
AFGC	The AFGC recommends poultry be defined as ‘any avian species’.	<p>This was considered in the development of the definition of poultry in the proposed standard.</p> <p>The proposed standard defines poultry as: <i>chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl and other avian species (except ratites).</i></p>
Coles Myer	Definition of poultry should include all the species listed in the IAR, including wild-caught species (but excluding ratites) that are offered for sale.	<p>This was considered in the development of the definition of poultry in the proposed standard.</p> <p>The proposed standard defines poultry as: <i>chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl and other avian species (except ratites).</i></p>
DPIWE (Tas)	The Code currently does not have a definition for poultry. Avian species that are harvested in the wild should be included in the definition of poultry insofar as the scope of the new Standard covers processing. The principles involved in processing e.g. mutton birds, post harvest are similar to the processing of domestic poultry.	<p>This was considered in the development of the definition of poultry in the proposed standard.</p> <p>The proposed standard defines poultry as: <i>chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl and other avian species (except ratites).</i></p>
NZFSA	NZ recommends that the definition of poultry is aligned with international documents and domestic legislation. All avian species (i.e. mutton birds) should be included in the definition of poultry. Ratites should be excluded.	<p>This was considered in the development of the definition of poultry in the proposed standard.</p> <p>The proposed standard defines poultry as: <i>chicken, turkey, duck, squab (pigeons), geese, pheasants, quail, guinea fowl and other avian species (except ratites).</i></p>

Submitter	Comments	Response
General Issues for Consideration in the risk assessment		
ACA	RIRDC has undertaken a number of studies relating to the safety of chicken meat.	These were considered in the risk assessment.
	The prevention of food-borne illness caused by chicken meat is of greater significance than illness caused by non-chicken poultry meat due to the far greater volume of chicken meat consumed compared to meat from other poultry species.	This was considered in the risk assessment. As chicken meat represents the majority of poultry consumed, the assessment was largely informed by chicken meat data.
	The risk assessment and risk management of food safety risks should consider the likelihood and severity of illness occurring. The ACA supports a risk assessment that identifies the nature and extent of the food safety risk at all stages of the poultry meat supply chain, even though the standard will only address food safety at the primary production and processing stages of the supply chain.	This was considered in the risk assessment. The risk assessment methodology includes consideration of the likelihood and severity of illness occurring. The risk assessment examined the nature and extent of food safety hazards across the entire poultry meat supply chain– from importation of fertilized eggs through to consumption.
AFGC	The microbiological risks associated with poultry meat are similar across species, although the chance of food-borne illness caused by chicken is probably higher due to greater and more widespread sale and consumption.	This was considered in the risk assessment. As chicken meat represents the majority of poultry consumed, the assessment was largely informed by chicken meat data. The risk assessment assumed the hazards associated with chicken meat and chicken meat products were similar to those associated with products from other poultry species, unless contrary data was available. This assumption was supported by the SDC.
Coles Myer	The most significant/likely public health risks for consumers of poultry meat are pathogens and bone fragments (less likely).	This was considered in the risk assessment. The risk assessment focused on the public health risks from pathogens. Physical hazards, such as bone fragments, were outside the scope of the risk assessment as they are already covered by safety and suitability requirements.
	All raw meat products (including poultry) are potential carriers of pathogens, and all raw meat products are subject to the same strict temperature controls and hygienic handling techniques.	This was considered in the risk assessment. The risk assessment acknowledged that all meats can carry pathogens.

Submitter	Comments	Response
General Issues for Consideration in the risk assessment		
DPIWE (Tas)	Since the introduction of Standards 3.2.2, 3.2.3 and AS 4465:2001, the rate of Campylobacteriosis in Australia has risen slightly and Salmonellosis has remained relatively steady. Although not entirely attributable to poultry meat, these rates of food-borne illness probably reflect the increasing consumption of poultry meat nationally.	This was considered in the risk assessment. A key part of the risk assessment was the rates of illness attributable to poultry meat.
Ingham's, ACMF and Birling Labs	Foodborne illness associated with <i>Listeria</i> or <i>Salmonella</i> , or <i>Staphylococcus</i> or <i>Clostridium</i> in cooked poultry meat products is primarily due to contamination in the processing plant or at the retail/consumer level.	This was considered in the risk assessment. The risk assessment confirms the association between <i>Listeria Salmonella</i> , <i>Staphylococcus</i> and <i>Clostridium</i> in cooked poultry meat products and contamination at the processing, retail and consumer levels.
	Food safety risks have not impacted on Ingham's operations (except for the consumption of raw nuggets).	This was noted.
NSW Food Authority	Informally recognised pathogen contamination levels common on chicken carcasses are well beyond what would be acceptable for most other products. It is acknowledged that this is a raw product that will undergo a further kill step during cooking. However, putting such an onus on the food preparer, at a restaurant or at home, not to make any mistakes is to ask for trouble. Cross-contamination will happen with food-borne illness as an inevitable consequence.	This was considered in the development of the proposed standard. The proposed standard takes a whole-of-chain approach in addressing food safety and recognises that all stages of the poultry meat supply chain have responsibilities in this area.
	Campylobacteriosis is probably the most common cause of human food-borne illness originating from poultry. It is associated with some chronic sequelae of a serious nature appearing several months after the initial illness and thus often not connected to the source of disease. This is a factor currently ignored in assessing risks associated with poultry consumption.	This was considered in the risk assessment.

Submitter	Comments	Response
General Issues for Consideration in the risk assessment		
NSW Food Authority	Risk assessments have pinpointed the production and consumer end as crucial as it relates to food safety impact. A concerted effort to reduce the initial opportunity for contamination at the production stage has proven effective in several countries as previously mentioned.	<p>This was considered in the risk assessment and the development of the proposed standard.</p> <p>The risk assessment highlighted the significance of minimising pathogens entering processing, which was supported by the quantitative modelling. The proposed standard is based on these findings.</p> <p>The consumer end of the supply chain is also recognised as impacting on food safety. Strategies to address this have been proposed.</p>
NZFSA	The contribution of poultry to food-borne illness should be discussed in the context that poultry is just one of the possible vectors of food-borne illness and it should be noted that similar illnesses may also result from other causes.	This was considered in the risk assessment.
	NZFSA in collaboration with ESR is preparing a quantitative risk assessment for <i>Campylobacter</i> spp in broiler chickens across the whole poultry production process, including home preparation and cross-contamination.	FSANZ has requested this paper once it is available.
	There are some reports of <i>E. coli</i> 0157 being associated with poultry meat.	<p>This was considered in the risk assessment.</p> <p>The risk assessment evaluated the risk of <i>E. coli</i> 0157 contamination of poultry meat and poultry meat products.</p>
	When ‘Poultry Meat and Human Disease in Australia’ is discussed, reference could be made to the NZ risk profiles of <i>Salmonella</i> and <i>Campylobacter</i> .	This was noted.

Submitter	Comments	Response
Microbiological Data		
DPIWE (Tas)	FSANZ should seek data on heavy metals in feed e.g. mercury in fish meal. Ultimately, this may not be an issue in poultry meat.	This was considered in the risk assessment.
Ingham's, ACMF and Birling Labs	Hazards that have been associated with poultry meat products include: (a) <i>Salmonella muenchen</i> (1979); (b) <i>Salmonella typhimurium 126</i> (2002); (c) <i>Clostridium perfringens</i> (not major outbreak); and (d) <i>Staphylococcus aureus</i> (not major outbreak).	This was considered in the risk assessment.
	Hazards have been associated with poultry feed-breeders-broilers-processing (for (a) and(b) above), and food service/retail handling (for (c) and (d) above).	This was considered in the risk assessment.
NSW Food Authority	Lack of data is a big problem in undertaking quantitative risk assessment and diversity in data acquisition methodology can make comparisons of the data that is available, difficult. Industry does collect processing data. Specification of sampling programs, testing methodology and compulsory central reporting requirements in a food safety program could provide a cost effective way of gathering relevant data. The NSW Food Authority provided data in their submission from a 2001 a hygiene survey (<i>E. coli</i> and <i>Salmonella</i>) undertaken on 43 of the poultry processors in NSW. Data was also provided on the number of cases of salmonellosis and their association with poultry meat consumption.	This data was considered in the risk assessment.
	The Authority has no specific information on the impact of consumer and retail handling of poultry meat products. A Danish study has looked in detail at the consumer aspect.	This was noted.

Submitter	Comments	Response
Microbiological Data		
NZFSA	<p>NZ has recently undertaken a survey of <i>Campylobacter</i> in poultry meat. Interim results of a survey of ground/diced poultry meat at retail show a <i>Campylobacter</i> prevalence of 91%. However, the numbers of bacteria are very low and serotype information that could link these products to human disease has not been done.</p>	<p>This was considered in the risk assessment.</p> <p>Data collected for the risk assessment showed that the prevalence of <i>Campylobacter</i> can be highly variable.</p>
	<p>There has been a risk profile of <i>Salmonella</i> in NZ poultry (whole and pieces). A link to the document on the web was provided. In NZ the prevalence of <i>Salmonella</i> on broiler carcasses is 1.8% and of <i>Salmonella</i> in ground/diced poultry meat at retail is 1.7%.</p>	<p>This data was considered in the risk assessment.</p>
	<p>NZ considers that there is not enough data available to determine which factors along the poultry meat supply chain have the greatest impact on food safety.</p>	<p>This was considered in the risk assessment.</p> <p>The risk assessment noted the lack of quantitative data.</p>
	<p>There are a number of papers from overseas studies that suggest that good biosecurity helps maintain flock freedom from <i>Salmonella</i> and <i>Campylobacter</i> on the farm.</p>	<p>This was considered in the development of the proposed standard.</p>
	<p>There is a vertical chain study being undertaken by ESR.</p> <p>NZ has initiated a study to determine differences in handling of different foods by retail and consumers and the effect this has on food safety.</p>	<p>FSANZ will obtain this report when it becomes available.</p>
PIRSA	<p><i>Staphylococcus aureus</i> is a common organism present on dressed poultry. Levels are regularly tested by processors.</p>	<p>This information was considered in the risk assessment.</p>
QLD Health	<p>Queensland Health Scientific Services have provided data to FSANZ on <i>Campylobacter</i> isolates for chickens and humans in North Queensland.</p>	<p>This data was considered in the risk assessment.</p>

Submitter	Comments	Response
Issues Raised Concerning Primary Production		
Coles Myer	If contaminated poultry feed is considered a major avenue of <i>Salmonella</i> introduction to poultry flocks, then measures need to be taken to control such introduction, this may or may not be through PPP Standard.	<p>This was considered in the risk assessment and in the development of the proposed standard.</p> <p>The contaminated feed was identified as a major source of <i>Salmonella</i> contamination of poultry flocks.</p> <p>The issue of contaminated feed is being dealt with by the Department of Agriculture, Fisheries and Forestry through its work to strengthen the existing feed regulatory framework in order to control the risk of hazards entering the human food supply chain through this avenue.</p>
Department of Health, Western Australia	The primary producers should have continual improvement programs in place to manage safety, as HACCP-based programs designed to totally control pathogens would be unlikely to be effective.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard does not prescribe any methods of controlling hazards or of meeting the legal requirements. This fosters the development of new methodologies and innovations.</p>
DPIWE (Tas)	There are likely to be differences between free-range/organic production of meat poultry in the animal health and biosecurity measures only. However, there may be merit in comparing <i>Campylobacter</i> and <i>Salmonella</i> data from free range and barn production systems.	This was considered in the risk assessment.
	The withholding of feed prior to slaughter can affect cross contamination. Industry organisations' recommendations may need to be verified in this regard.	This was considered in the risk assessment.
	Stress related shedding of <i>Salmonella</i> substantiates the inclusion of, or reference to, animal welfare provisions in the proposed Standard.	The proposed standard requires that poultry primary production businesses <i>systematically examine all of its primary production operations to identify potential poultry food safety hazards and implement controls that are commensurate with the food safety risk</i> . This would include the management of shedding of <i>Salmonella</i> .

Submitter	Comments	Response
Issues Raised Concerning Primary Production		
Ingham's, ACMF and Birling Labs	Despite NRA guidelines many raw materials for poultry feed are <i>Salmonella</i> positive including meals, grains. Heavily contaminated raw materials may result in <i>Salmonellae</i> contaminated finished feeds and live birds even though feed is heat-treated.	<p>This was considered in the risk assessment and in the development of the proposed standard.</p> <p>Contaminated feed was identified as a significant source of <i>Salmonella</i> contamination of poultry flocks.</p> <p>The issue of contaminated feed is being dealt with by the Department of Agriculture, Fisheries and Forestry through its work to strengthen the existing feed regulatory framework in order to control the risk of hazards entering the human food supply chain through this avenue.</p>
NSW Food Authority	There is quite an amount of pressure put on layers and they can easily succumb to illnesses. No specific information is available to the Authority covering this issue.	This was not considered as part of this process. This will be considered during the development of the PPP Standard for Eggs.
	It is very important to apply an integrated approach to attacking pathogen contamination in the through-chain. Feed is a common source of pathogens and water can easily spread contamination across a production shed. A serious attempt to reduce pathogen contamination must include parent flocks, production system and cleaning between batches, feed and water as a source of contamination and environmental conditions including rodents and other animals.	<p>This was considered in the development of the proposed standard and in the risk assessment.</p> <p>The proposed standard covers breeder farms (parent flocks), hatcheries and broiler farms.</p> <p>The proposed standard specifically states that the controls implemented must minimise contamination of poultry from:</p> <ul style="list-style-type: none"> • breeder stock; and • wild and domestic animals and birds; and • insects and rodents; and • drinking water; and • feed and litter; and • personnel; and • equipment. <p>The issues surrounding contaminated feed is being dealt with by the Department of Agriculture, Fisheries and Forestry through its work to strengthen the existing feed regulatory framework in order to control the risk of hazards entering the human food supply chain through this avenue.</p>

Submitter	Comments	Response
Issues Raised Concerning Primary Production		
NZFSA	<p>Most feed raw materials will have occasional <i>Salmonella</i> contamination. There needs to be effective <i>Salmonella</i> control during feedmilling and subsequent steps. NZ has a detailed example of feed contamination with <i>Salmonella</i>.</p>	<p>This was considered in the risk assessment and in the development of the proposed standard.</p> <p>The contaminated feed was identified as a major source of <i>Salmonella</i> contamination of poultry flocks.</p> <p>The issue of contaminated feed is being dealt with by the Department of Agriculture, Fisheries and Forestry through its work to strengthen the existing feed regulatory framework in order to control the risk of hazards entering the human food supply chain through this avenue.</p>
	<p>The mechanism of contamination is not the same for different pathogens. For instance, <i>Campylobacter</i> suddenly appears in flocks 2 weeks after placement, whereas <i>Salmonella</i> can be detected at any time. Also <i>Campylobacter</i> may not be able to be effectively eliminated from the sheds between batches of birds.</p>	<p>This was considered in the risk assessment and in the development of the proposed standard.</p> <p>The conclusions of the risk assessment highlighted the differences in the mechanism of contamination between <i>Salmonella</i> and <i>Campylobacter</i>. The risk management options have been developed to specifically address the mechanisms of contamination identified for <i>Salmonella</i> and <i>Campylobacter</i>.</p>
	<p>Variability probably exists in the control measures used on farm.</p>	<p>This was considered in the development of the proposed standard.</p> <p>The risk assessment identified a number of control measures on farm that would control contamination.</p>
PIRSA	<p>Sheds are ventilated by fans throughout the brooding and grow-out processes.</p>	<p>This was noted.</p>
	<p>Grow-out sheds may not always be cleaned prior to the next group of chicks arriving, but it is common practice.</p>	<p>This was considered in the risk assessment.</p> <p>The risk assessment identified the cleaning of sheds between batches as one measure to control contamination.</p>
QLD Health	<p>Poultry meat products may still be contaminated at the end of the production line because the 'pathogen load' on the bird was extremely high when it was received from the farm.</p>	<p>This was considered in the risk assessment and the development of the proposed standard.</p> <p>The risk assessment highlighted the significance of minimising pathogens entering processing, which was supported by the quantitative modelling. The proposed standard is based on these findings.</p>

Submitter	Comments	Response
Issues Raised Concerning Primary Production		
QLD Health	Evisceration methods were clearly a factor in carcass contamination. This is an area that should be researched for further improvement.	This was considered in the risk assessment. The risk assessment identified evisceration as one of the key steps at the processing stage that impacts on carcass contamination.

Submitter	Comments	Response
Issues Raised Concerning Processing		
ACA	Requirements for managing food safety risks may differ between poultry species due to differences in processing methods. If this is the case processing differences will need to be reflected in the standard.	This was considered in the risk assessment and in the development of the proposed standard. The main processing differences between species were identified by the SDC, but generally it was assumed the processing of chickens was similar to the processing of other poultry species.
AFGC	The greatest risk in any poultry processing operation is cross-contamination and this risk is greater where raw and cooked poultry are handled in the same premises.	This was considered in the risk assessment. The risk assessment identified cross-contamination as being a significant contributor to food-borne illness as a result of consumption of poultry meat products.
Coles Myer	Farmed birds are processed under similar conditions to chicken and as such, the hazards are likely to be similar.	This was considered in the risk assessment. The risk assessment assumed the hazards associated with chicken meat and chicken meat products were similar to those associated with products from other poultry species, unless contrary data was available. This assumption was supported by the SDC.

Submitter	Comments	Response
Issues Raised Concerning Processing		
Coles Myer	Most of the major poultry processors Coles Myer Ltd deals with have at least one off-site boning facility. Some further processing also occurs at different facilities to the site of initial processing for most major poultry processors. It is our experience that if raw product is transferred from one site to another and the more that is done to it (particularly with the addition of other ingredients/foods), the more avenues for contamination (and/or increased food safety or quality risk) exist.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard covers all poultry food businesses involved in processing poultry for human consumption. In the proposed standard, processing includes, amongst others, the following activities:</p> <ul style="list-style-type: none"> • washing or trimming; or • chilling or freezing; or • deboning or portioning; or • marinading; or • injecting or massaging; or • crumbing; or • cooking; or • packaging; and • similar activities <p>of poultry carcasses or poultry meat.</p>
Department of Health, Western Australia	Birds exiting spin washers/chillers should be further processed in an environment that maintains or reduces the temperature of the birds on a continued basis.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires evaluation of hazards and their control. This includes measures that minimise pathogen growth.</p>
	There appears to have been little change in bird processing technology during the last 15-20 years. Current processes are at an industry acceptable level when industry should be striving for continual improvement.	<p>The proposed standard does not specify methods to meet the food safety outcomes.</p> <p>The proposed standard does not prescribe any methods of controlling hazards or of meeting the legal requirements. This fosters the development of new methodologies and innovations.</p>

Submitter	Comments	Response
Issues Raised Concerning Processing		
DPIWE (Tas)	Off site boning and further processing could occur at any number of wholesale or retail premises. Microbiological data is needed to determine whether such operations warrant specific attention in this Standard or other supply chain standards. 'Value adding' at the retail level e.g. marinading, crumbing, can facilitate further microbial growth unless appropriate measures are taken.	<p>This was considered during the development of the proposed standard.</p> <p>The proposed standard covers all poultry food businesses involved in processing poultry for human consumption. In the proposed standard, processing includes, amongst others, the following activities:</p> <ul style="list-style-type: none"> • washing or trimming; or • chilling or freezing; or • deboning or portioning; or • marinading; or • injecting or massaging; or • crumbing; or • cooking; or • packaging; and • similar activities <p>of poultry carcasses or poultry meat.</p>
	The required cooking regime for boilers reduces the food safety risk.	This was noted.
	Time and temperature parameters for the effective chilling of poultry carcasses vary as: air chilling is a slower cooling process than spin chilling; and larger birds must be chilled for longer periods to achieve target core temperatures.	<p>This was considered in the risk assessment and the development of the proposed standard.</p> <p>Data regarding the effectiveness of different chilling methods is lacking.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires validation of their control measures.</p> <p>The proposed standard does not prescribe any processing method, fostering the development of new methodologies and innovations to meet the desired food safety outcome.</p>
	Certain operators find it difficult to comply with clause 15.96(b) of the Australian Standard for Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption (AS 4465:2001), <i>"in the case of whole carcasses and or deboned poultry meat be further reduced to a core temperature of 5°C or colder within 12 hours of stunning"</i> when processing larger (12+ kg) turkeys.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard does not prescribe a certain processing method or time/temperature combination. However, the proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires the food business to demonstrate that they have controlled their hazards.</p>

Submitter	Comments	Response
Issues Raised Concerning Processing		
Ingham's, ACMF and Birling Labs	<p>Ingham's products are fairly safe provided their HACCP plans are implemented correctly as the numbers of microorganisms are kept to a minimum. There is always the chance of illness from mishandling or abuse at the food handling/retail/consumer level. A simple HACCP plan will keep <i>Salmonella</i> and <i>Campylobacter</i> numbers to a minimum, which will significantly reduce the risk of food-borne illness.</p>	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses. Industry, through their monitoring of operations, and State and Territory agencies, through their enforcement activities, will help ensure contamination is kept to a minimum.</p>
	<p>The current regulations need to list criteria for CCPs for inexperienced operators and need to be the same for any sized operation.</p>	<p>This was considered in the development of risk management strategies.</p> <p>As part of the standard development process, FSANZ has committed to developing an interpretive guide which explains the intent of the standard and may be of use to industry even though it is developed primarily for enforcement officers. Industry has also developed a tool for processors to aid in their implementation of a HACCP-based food safety management system. These tools should help inexperienced operators meet the proposed standard.</p>
	<p>There are some gaps in the current regulations and there is a need to set CCPs for operations not having sufficient expertise.</p>	<p>This was considered in the development of risk management strategies.</p> <p>As part of the standard development process, FSANZ has committed to developing an interpretive guide which explains the intent of the standard and may be of use to industry even though it is developed primarily for enforcement officers. Industry has also developed a tool for processors to aid in their implementation of a HACCP-based food safety management system. These tools should help inexperienced operators meet the proposed standard.</p>
NSW Food Authority	<p>An update and refinement of existing food safety arrangements as described in AS 4465-2001 could easily be incorporated or referenced in the Code as a processing Standard.</p>	<p>This was considered during the development of the proposed standard.</p> <p>All the food safety aspects of 4465-2001 have been incorporated into the PPP Standard for Poultry Meat.</p>

Submitter	Comments	Response
Issues Raised Concerning Processing		
NSW Food Authority	<p>There are not many actual critical control points in poultry processing but chemical treatment of water during final chill steps can provide some protection. This final step is often not well controlled by management, a point identified in Authority audits again and again. Alternative treatment methods have recently been published.</p>	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires evaluation of hazards and their control.</p> <p>The proposed standard does not prescribe any methods of controlling hazards or of meeting the legal requirements. This fosters the development of new methodologies and innovations.</p>
	<p>There is a drive to maximise water retention during processing within legal limits. The carcass surface is never allowed to dry. This creates ideal conditions for survival of <i>Campylobacter</i> spp. on the carcass surface.</p>	<p>This was considered in risk assessment.</p> <p>The extent of moisture on the carcass surface was specifically examined with respect to <i>Campylobacter</i> contamination.</p>
	<p>Little data is available to the Authority in relation to processing differences between poultry species. It is clear from international data that chilling methods have an important influence on the micro flora of the carcass surface. Air cooling as the sole chilling method or as a final step preceded by spin chilling will provide less favourable conditions for bacterial survival or growth. Specific application of such methods to different poultry species is not known to the Authority.</p>	<p>This was considered in risk assessment and development of the proposed standard.</p> <p>The risk assessment evaluated the impact of different chilling methods on contamination.</p> <p>The main processing differences between species were identified by the SDC, and it was assumed the processing of chickens was similar to the processing of other poultry species. This assumption was supported by the SDC.</p>
	<p>Poultry processing is very much standardised worldwide with similar equipment found in most countries. The scale of many operations and throughput speeds prohibit careful quality control and human intervention. Automated methods achieve consistently high cross-contamination avenues with dirty chickens in resulting in dirty chickens out.</p>	<p>This was considered in the risk assessment and in the development of the proposed standard.</p> <p>The risk assessment highlighted the significance of minimising pathogens entering processing, which supports the notion of ‘dirty chickens in resulting in dirty chickens out’. The proposed standard is based on the risk assessment findings.</p>

Submitter	Comments	Response
Issues Raised Concerning Processing		
NSW Food Authority	Because of high initial pathogen levels in the raw material handled, cross-contamination risks are very high in further processing.	This was considered in the risk assessment and in the development of the proposed standard. The risk assessment highlighted the significance of minimising pathogens entering processing, which was supported by the quantitative modelling, and the potential for this to amplified further along the chain. The proposed standard is based on the risk assessment findings.
	There could be merit in differentiating Chinese chicken, Chinese silky and spatchcock production from conventional chicken production because of the very different circumstances for such production.	This was considered in the risk assessment.
	There is a common understanding that older birds are associated with a greater risk of carrying disease.	This was considered in the risk assessment. The risk assessment identified the age of birds at slaughter to be important for <i>Campylobacter</i> contamination. The risk assessment was not clear whether there was an age-related susceptibility or whether the risk is due to a greater chance that <i>Campylobacter</i> will be introduced from the environment.
	On the surface the existing regulatory framework and industry codes of practice seems adequate. Strict application of prescribed HACCP methodology should by definition produce a safe product. In practice poor interpretation is often resulting in an inferior product being presented to the consumer. Microbiological testing prescribed in AS 4465-2001 includes only a Total Viable Count and no specific pathogen testing. It has been shown in numerous studies that there is very little relationship between a general bacterial count and contamination with specific pathogenic microorganisms.	This was considered in the development of the proposed standard. An assessment of the adequacy of current food safety management strategies is an essential part of any impact analysis. See the ‘Discussion of risk management options’ section for further details. The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires evaluation of hazards and their control. The HACCP-based food safety management system must include validation of control measures, which could be achieved through microbiological testing. Validation of such systems will be described further in the interpretive guide to the standard.
NZFSA	The ESR’s Quantitative risk assessment models for <i>Campylobacter</i> and <i>Salmonella</i> could be referred to during the discussion of hazards during the processing stage of the poultry meat supply chain.	This was considered in the risk assessment.

Submitter	Comments	Response
Issues Raised Concerning Processing		
NZFSA	Larger poultry species may be processed with more manual input than chickens, which are usually processed in highly automated plants. The processes used for processing different poultry species are similar.	<p>This was considered in the risk assessment and in the development of the proposed standard.</p> <p>The main processing differences between species were identified by the SDC, and as eluded to by the submitter, it was assumed the processing of chickens was similar to the processing of other poultry species.</p>
	In NZ poultry processors generally use immersion chilling as the main chilling mechanism. This method is effective if done properly. NZ has provided a link to recommendations on how to set up an effective system.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires validation of their control measures.</p>
PIRSA	The further processing of poultry meat products is a significant step that may impact on food safety, especially when cooking and partial cooking is involved.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard covers all poultry food businesses involved in processing poultry for human consumption. In the proposed standard, processing includes, amongst others, the following activities:</p> <ul style="list-style-type: none"> • washing or trimming; or • chilling or freezing; or • deboning or portioning; or • marinading; or • injecting or massaging; or • crumbing; or • cooking; or • packaging; and • similar activities <p>of poultry carcasses or poultry meat.</p>
	The combination of the temperature of the scald tank and the dwell time in the scald tank is critical for the loosening of feathers. Steam tunnels may be an effective replacement for scald tanks and could reduce faecal contamination on the birds.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires evaluation of hazards and their control.</p> <p>However, the proposed standard does not prescribe any methods of controlling hazards or of meeting the legal requirements. This fosters the development of new methodologies and innovations.</p>

Submitter	Comments	Response
Issues Raised Concerning Processing		
QLD Health	<p>In Queensland, the processor is required to test for <i>Salmonella</i> but is not required to test for <i>Campylobacter</i>. Testing for <i>Campylobacter</i> should be mandatory, if only to test the effectiveness of the disinfection step.</p>	<p>This was noted.</p>
	<p>Chlorine chill baths are an unreliable and labour-intensive form of disinfection of poultry carcass as there are occasions when the carcass may not have the necessary contact time of free chlorine to achieve the desired reduction in pathogen numbers.</p>	<p>This was considered in the risk assessment and the development of the proposed standard.</p> <p>Data regarding the effectiveness of chlorine chill baths in disinfecting poultry carcasses is lacking. However, the risk assessment concluded that immersion chilling could increase contamination of carcasses with <i>Salmonella</i>, and to a lesser extent, <i>Campylobacter</i>. However, if under effective operation, chilling can decrease both numbers and prevalence of these micro-organisms.</p> <p>The proposed standard requires a documented HACCP-based food safety management system for poultry food businesses and as such requires validation of their control measures, including chilling practices.</p>

Submitter	Comments	Response
Issues Raised Concerning Retail		
Coles Myer	Proper temperature control and hygienic food handling techniques (such as the avoidance of cross contamination from raw to cooked product and stock rotation/shelf-life management) are integral to the management of the safety and quality of poultry products at retail level, and as such, are incorporated into all food safety programs for Coles Myer Ltd supermarket businesses and are appropriately monitored and controlled.	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>
Coles Myer	Most raw meat products experience some level of temperature abuse from the time they are placed in trolleys/baskets in the store until being refrigerated/frozen at the customer's home, and Coles Myer Ltd have made some allowance for this in our meat products' shelf lives.	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>
	Poultry turnover in our stores does not impact on food safety as it is policy that packaged products are removed from sale the day before their best before date. For unpackaged products, a system of best before date monitoring is in place in serviced delicatessens, to ensure that turnover is appropriately managed. However, we are unable to comment on the practices of other poultry meat retailers.	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>
	Coles Myer Ltd manages risks associated with storage conditions, cross-contamination, personal hygiene of retail workers and compliance with appropriate practices through their food safety programs, which are regularly reviewed to ensure their effectiveness. These factors therefore have a minimal impact on poultry meat safety.	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>

Submitter	Comments	Response
Issues Raised Concerning Retail		
	<p>Coles Myer Ltd manages risks associated with inadequate cooking of product by complying with strict specifications and cooking according to preset cooking programs. The cooking programs have been validated to ensure food safety is maintained and the ovens used are subject to regular maintenance to ensure their correct operation. Food safety training at store level also requires the checking of temperatures post cooking (to ensure adequate temperatures have been reached) and appropriate rotation of stock. This factor therefore has a minimal impact on poultry meat safety.</p>	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>
	<p>Food safety risks are controlled in stores by ensuring temperature controls and proper cooking, handling and storage practices are adhered to.</p>	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>
	<p>Coles Myer Ltd manages risks associated with the transportation of poultry meat products to the consumer by not doing home deliveries of chilled or frozen product unless delivered in refrigerated food transport vehicles. This factor therefore has no impact on poultry meat safety.</p>	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, this submitter appears to be taking an appropriate pro-active approach to minimising contamination at the retail level.</p> <p>Retail activities are not covered by the proposed standard.</p>
QLD Health	<p>The retail sector has a considerable role to play in food-borne illness prevention, by ensuring that proper storage and handling of poultry meat products is practised so as to minimise cross-contamination.</p>	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were a number of factors at retail that impact on contamination of poultry meat and poultry meat products, a residual risk was not identified. However, during the standard development process, the importance of a strategy to 'remind' retailers of their food safety obligations, especially with respect to poultry, was noted.</p>

Submitter	Comments	Response
Issues Raised Concerning Consumers		
ACA	Answers to the impact of current arrangements on consumers would best be asked through other consumer research methods. The ACA is aware that consumer opinion may be included as part of the evaluation project for P282 or through the work of the Food Safety Information Council.	<p>This was considered in the development of the standard.</p> <p>A survey of consumer attitudes to handling and preparing poultry meat and poultry meat products was recently finalised through the Evaluation Section at FSANZ. The survey found that consumers appear to know safe handling practices for poultry meat.</p> <p>The impact of the current and proposed strategies are discussed in the 'Discussion of risk management options' section.</p>
Coles Myer	Household food handling practices have a significant impact on the risk of food-borne illness from poultry products. Incorrect storage and handling, cross-contamination of raw and ready-to-eat product and improper cooking are the most significant practices requiring control.	<p>This was considered in the risk assessment.</p> <p>Although the risk assessment acknowledged that there were control measures and responsibilities at the consumer end, a residual risk was not identified. However, during the standard development process, the importance of a strategy to 'remind' consumers of their food safety obligations, especially with respect to poultry, was noted.</p>
NZFSA	NZ is currently reviewing the impact of consumer food handling and food preparation practices on the risk of food-borne illness from the consumption of poultry meat products.	A copy of the final report from this study was requested by FSANZ.
	NZ has initiated a study to determine differences in handling of different foods by retail and consumers and the effect this has on food safety.	A copy of the final report from this study was requested by FSANZ.
PIRSA	It must be noted that cross-contamination also includes re-contamination after cooking and should be emphasised.	This was considered in the risk assessment.

Submitter	Comments	Response
Issues Raised Concerning Consumers		
QLD Health	Unless an education program for consumers is substantial and ongoing, behaviour change is difficult to achieve. As such, it is imperative that the pathogen load on poultry is at a minimum when it is sold to consumers, given the risk from undercooking or mishandling. The risks associated with the re-heating of cooked or ready-to-eat poultry meat products and the transportation from a retail outlet to a place of consumption also needs to be addressed.	<p>This was considered during the development of risk management strategies.</p> <p>During the standard development process, the importance of a education strategy to ‘remind’ consumers of their food safety obligations, especially with respect to poultry, was noted.</p>

Submitter	Comments	Response
Issues for Consideration in Risk Management		
ACA	FSANZ has a duty to address any risks that are not currently covered in the Code or where it is evident that the current standards are not sufficient to manage these risks.	<p>This was considered during the development of the proposed risk management options.</p> <p>The proposed standard addresses the residual risk in the poultry meat sector. Also as part of the development of this standard, the current standards in the Code were evaluated. The outcome of this was the proposed deletion of the standard relating to eviscerated poultry and consideration of the existing requirements relating to fluid loss from frozen poultry.</p>
Department of Health, Western Australia	WA is requesting through the abattoir-auditing program that poultry abattoirs obtain bird information from the grower that provides assurance to the abattoir that the birds are suitable to slaughter for human consumption (e.g. vendor declaration).	<p>This was considered during the development of the proposed standard.</p> <p>The proposed standard requires poultry food businesses to ensure they supply poultry from growers which have controlled food safety hazards. The implementation of this is outside the scope of the standard.</p>
DPIWE (Tas)	Reports from other countries where supply chain standards and associated food safety management strategies have been implemented would be extremely useful in this current standard development process.	This was considered in the development of the proposed standard.

Submitter	Comments	Response
Issues for Consideration in Risk Management		
Ingham's, ACMF and Birling Labs	Food safety risks are controlled in Ingham's by QA/QC management programs. These programs are HACCP-based.	<p>This was considered during the development of the proposed standard.</p> <p>The proposed standard requires processors to have a HACCP-based food safety management system in place. The cost of implementing this standard will be minimal for those businesses that already operate under such a system. This point was considered in the impact analysis.</p>
NSW Food Authority	<p>A national through-chain approach should be employed to improve the current situation. National pathogen targets should be set based on agreed food safety objectives. A collaborative effort between industry and government has proven successful in other countries. Such an effort, supported by sufficient funding and guided by scientific inputs and risk assessment outputs, should be initiated in Australia.</p>	<p>This was considered during the development of the proposed standard.</p> <p>One aim of the PPP standards is to provide a national, whole-of-chain approach to food regulation. Pathogen levels should be monitored as part of the validation of the food safety management system.</p>
	Countries like Sweden, Denmark, the USA and the UK have introduced national programs to reduce <i>Salmonella</i> and/or <i>Campylobacter</i> in poultry flocks. These programs have been successful not only in reducing the prevalence of these microorganisms in poultry flocks but also in reducing human illness associated with these pathogens.	This was considered during the development of the proposed standard.
	In theory the current food safety management strategies applying to poultry production should work. In practice the situation is quite different with evidence of high contamination levels of raw retail poultry meat products with major microorganisms like <i>Salmonella</i> species and <i>Campylobacter jejuni</i> .	<p>This was considered in the development of the proposed standard.</p> <p>An assessment of the adequacy of compliance with current food safety management strategies is an essential part of any impact analysis. See the 'Discussion of risk management options' section for further details.</p>
NZFSA	Control measures do need to start on farm to minimise pathogens entering processing, but this does not negate the need for control measures throughout the rest of the chain.	<p>This was considered in the development of the proposed standard.</p> <p>The proposed standard has been developed based on the findings of the risk assessment which not only highlighted the significance of minimising pathogens entering processing, but also highlighted the importance of measures throughout the rest of the poultry meat supply chain.</p> <p>In addition, the primary production and processing standards aim to have complete coverage of the poultry meat supply chain.</p>

Submitter	Comments	Response
Issues for Consideration in Risk Management		
NZFSA	Various documents, guidelines, codes of practice and food safety information regarding poultry processing in NZ are available and have been listed in the submission. These may be useful when developing the standard.	These documents were considered in the development of the proposed standard.
QLD Health	Steps to reduce pathogens at the farm level may be required. This could include 'quarantining' some farms until they demonstrated satisfactory results.	<p>This was considered in the development of the proposed standard.</p> <p>The risk assessment highlighted the significance of minimising pathogens entering processing, which was supported by the quantitative modelling. This indicates a need for on-farm requirements. The proposed standard is based on these findings.</p> <p>The proposed standard does not prescribe methods to implement and enforce the proposed standard.</p>

Submitter	Comments	Response
Regulatory Impact Analysis		
AFGC	The AFGC does not consider the size of an individual operation impacting on food safety.	<p>This was considered in the development of the proposed standard.</p> <p>The ability of small businesses to address food safety by complying with the proposed standard is considered in the 'Discussion of risk management options' section for further details.</p>
	The AFGC recommends that FSANZ ensure that in identifying areas of the poultry meat supply chain in need of greater food safety controls, it also assesses whether improved compliance with current regulations/standards/codes would achieve that greater control.	<p>This was considered in the development of the proposed standard.</p> <p>An assessment of improved compliance with current food safety management strategies is an essential part of any impact analysis. See the 'Discussion of risk management options' section for further details.</p>

Submitter	Comments	Response
Regulatory Impact Analysis		
Coles Myer	Business size may impact on food safety; however, all Coles Myer Ltd suppliers are required to comply with minimum standards designed to control food safety and quality prior to commencing supply. The introduction of the PPP Standard should have similar effect for the industry as a whole.	This was considered in the development of the proposed standard. The ability of businesses of all sizes to address food safety by complying with the proposed standard is considered in the ‘Discussion of risk management options’ section.
DPIWE (Tas)	Tasmanian microbiological data (this has been provided to FSANZ) indicates the size of the business has no impact on food safety. However, the fact that larger operations: have greater capacity to manage quality assurance or food safety programs; can afford on site technical expertise; and can obtain discounted, off site analysis due to higher volumes must not influence development of the new Standard to the point it is unattainable to smaller operators.	This was considered in the development of the proposed standard. The ability of businesses of all sizes to address food safety by complying with the proposed standard is considered in the ‘Discussion of risk management options’ section.
	The Tasmanian Department of Primary Industries, Water and Environment has conducted over 100 audits of licensed poultry abattoirs (of which there are currently five) during the past five years. Audit findings indicate routine compliance by operators with AS4465:2001. Most non-conformances observed at audit were classified as ‘minor’ and usually rectified prior to the completion of the audit. Non-conformances (‘minor’ and ‘major’) for which Corrective Action Requests were issued consisted mainly of: failure to update documented procedures; structural defects not recorded as items on the operator’s Repair and Maintenance Program; failure to adhere to the operator’s Cleaning and Sanitising Program. No licences have been suspended or cancelled as a consequence of audit.	This was considered in the development of the proposed standard. An assessment of compliance with current food safety management strategies is an essential part of any impact analysis. See the ‘Discussion of risk management options’ section for further details.
Ingham’s, ACMF and Birling Labs	The costs of the current regulations are extensive but necessary.	This was considered in the development of the proposed standard. See the ‘Discussion of risk management options’ section for further details.

Submitter	Comments	Response
Regulatory Impact Analysis		
Ingham's, ACMF and Birling Labs	Any new standard must be able to be complied with by industry.	This was considered in the development of the proposed standard. The proposed standard has been developed in conjunction with industry, consumers and jurisdictions. The feasibility of industry to comply with the standard is examined in the 'Discussion of risk management options' section.

Submitter	Comments	Response
Implementation and Enforcement		
Coles Myer	Coles Myer has recognised the need for a specific poultry processing standard, and is in the process of preparing one. We expect this would work in conjunction with, or may indeed be superseded by, the PPP Standard. In addition to this, it is expected that all of our food suppliers have a third party audited, HACCP-based food safety program in place, and that they adhere to required standards of good manufacturing practice.	This was noted.
Department of Health, Western Australia	In WA, primary producers of poultry are licensed under local government legislation. In WA, Environmental Health Officers could be utilised to carry out Food Safety Audits/Assessments for the primary production and processing standards alongside assessment carried out for licensing requirements.	This was noted. Enforcement of the proposed standard is the responsibility of State and Territory agencies.
Ingham's, ACMF and Birling Labs	Appropriate guidelines etc also need to be developed for effective implementation.	This was considered in the development of the proposed standard. Interpretive guides and industry guides will be developed as part of the process and will aid effective implementation.

Submitter	Comments	Response
Implementation and Enforcement		
Ingham's, ACMF and Birling Labs	Consistency in compliance across the poultry meat industry with food safety management strategies is essential to prevent industry perception damage.	This was considered in the development of the proposed standard. Interpretive guides and industry guides will be developed as part of the process and will aid consistent compliance.
QLD Health	The overlap between health and agriculture portfolios will require jurisdictions to resolve regulatory responsibilities.	This was noted. This issue has been acknowledged by State and Territory agencies who are addressing it through other committees.

Submitter	Comments	Response
Education and Training - Industry		
Ingham's, ACMF and Birling Labs	RIRDC booklets, ACMF and APIA are communication systems for the industry. Workshops for industry and regulators would be beneficial.	This was considered in the development of the proposed standard and could be used to increase awareness in the poultry meat industry of the proposed standard.
NZFSA	Various documents, guidelines, codes of practice and food safety information regarding poultry processing in NZ are available and have been listed in the submission. These may be useful when developing the standard.	This was considered in the development of the guidelines and tools accompanying the proposed standard.
QLD Health	There is a need for greater awareness on how the poultry meat product is sampled and tested.	This was considered in the development of the guidelines and tools accompanying the proposed standard

Submitter	Comments	Response
Education and Training – Consumers		
ACA	An emphasis on consumer mishandling of poultry may attract negative media attention, which would not benefit consumers or the poultry meat industry.	This was considered in the development of the standard and will be considered further when developing specific strategies for consumers.
Coles Myer	Consumers do understand that poultry meat products cannot be served ‘rare’ but are perhaps still not fully aware that the products should not be served unless all traces of pink in the meat are gone. The avoidance of cross-contamination of ready-to-eat product with raw meat is understood, but perhaps not widely adopted, by consumers.	<p>This was considered in the development of the standard and will be considered further when developing specific strategies for consumers.</p> <p>A survey of consumer attitudes to handling and preparing poultry meat and poultry meat products was recently finalised through the Evaluation Section at FSANZ.</p> <p>The survey found that consumers appear to know safe handling practices for poultry meat.</p>
Coles Myer	Coles Myer Ltd understands that a significant food safety risk can be incurred once the consumer leaves the store with their poultry meat product, if it is not stored appropriately, and transported to refrigeration as soon as possible. To this end, Coles Myer Ltd encourages customers to practice appropriate food safety measures using information services such as the Internet site http://www.coles.com.au/healthyliving/foodsafety/ .	<p>This will be considered further when developing specific strategies for consumers.</p> <p>However, this submitter appears to be taking an appropriate pro-active approach to ensuring the poultry meat product is as safe as possible on consumption.</p>
DPIWE (Tas)	The community needs to be able to cope with the product. Hence, it would be valid to include consumer education (placing emphasis on proper handling and cooking prior to consumption) alongside a new Primary Production and Processing Standard for Poultry Meat as part of future food safety management strategies.	<p>This was noted.</p> <p>This supports the need for a consumer education campaign and will be considered when developing specific strategies for consumers.</p>

Submitter	Comments	Response
Education and Training – Consumers		
DPIWE (Tas)	As outlined earlier in this response, consumer education is the most important food safety management strategy to complement the proposed Standard. This could be presented as advice on proper handling and thorough cooking techniques.	This was considered in the development of risk management strategies and will be considered further when developing specific strategies for consumers.
Ingham’s, ACMF and Birling Labs	Labelling for consumer education.	This was considered in the development of the proposed standard. Labelling was not considered an appropriate inclusion into the proposed standard but was recognised as an important tool to inform consumers. However, as the assessed risk does not lead to labelling as a risk management option for the proposed standard, labelling would have to be an industry initiative.
NSW Food Authority	Consumer education and training could produce a similarly beneficial result at the other end of the chain. However, consumer information is often hampered by the commercial imperative not to highlight chicken meat as a problem product. A preventive approach is thus recommended breaking the contamination cycle at the initial source at farm level.	This was considered in the development of the standard and will be considered further when developing specific strategies for consumers.
	There is a need to let the consumer have a say and drive the process. For such a process to work, full transparency would be necessary. This has the potential of damaging an important industry.	This was considered in the development of the standard and will be considered further when developing specific strategies for consumers.
NZFSA	It may be useful to identify how poultry meat products are perceived and prepared by the consumer (e.g. chicken nuggets are often incorrectly thought to be pre-cooked by the consumer).	A survey of consumer attitudes to handling and preparing poultry meat and poultry meat products was recently finalised through the Evaluation Section at FSANZ. Although the survey did not specifically address issues around chicken nuggets, consumers appear to know safe handling practices for poultry meat.

Submitter	Comments	Response
Other Issues - Antimicrobial resistance		
FTA Vic	Consideration needs to be given to the use of anti-microbial agents in poultry feed leading to other health problems in human consumers. Issues such as the regulation of anti-microbial agents, GMO feed etc should be regulated and standardised in this document. At the least the PPP Standard should list the details of every related legislation, government agency, industry guideline etc that impacts on the production and processing of poultry meat. Reference to the PPP Standard should allow all relevant information to be obtained from one source.	This will be considered in developing tools to accompany the proposed standard.

Submitter	Comments	Response
Other Issues – Traceability		
Coles Myer	Traceability is readily achieved for packaged poultry products. Products offered for sale unpackaged (e.g. from a serviced deli counter) are less easily traced as once the product is put in the display case and the bulk packaging discarded, the traceable information on the bulk pack is lost. Also advice from customers regarding a problem with the product is likely to happen several days or even weeks after the product was sold. However, traceability is really only relevant for physical or chemical hazards, as it has to be assumed that raw poultry routinely carries pathogens.	This was noted. The proposed standard does not apply to retail activities.
DPIWE (Tas)	Tracing poultry meat products from retail to earlier stages of the poultry meat supply chain is feasible as long as packaging and associated documentation is retained by the retailer or wholesaler. Traceback is an issue if the operator has multiple suppliers. The cost to industry in implementing traceback systems must also be considered.	This was considered in developing the proposed standard. This information gives confidence that the traceability clause in the proposed standard will be able to be met. The cost to industry in implementing traceback systems was considered in the 'Discussion of risk management options' section.

Submitter	Comments	Response
Other Issues – Traceability		
Ingham’s, ACMF and Birling Labs	Poultry meat products can be traced back to birds from one of 2-4 sheds killed on a particular day.	This was considered in developing the proposed standard. This information gives confidence that the traceability clause in the proposed standard will be able to be met.
NZFSA	In NZ poultry meat products can be traced to the day of package. Tracing beyond this point is problematic due to ageing of meat, or delays in packaging or processing meat.	This was considered in developing the proposed standard. This information gives confidence that the traceability clause in the proposed standard will be able to be met to some degree.
NSW Food Authority	The Authority is not in a position to comment on the practicality of trace back systems. However, if such a system could be introduced it would be of much benefit to food-borne illness investigations.	This was noted.

**Summary of submissions from the discussion paper,
*Limit on fluid loss from thawed poultry***

Fifteen submissions were received in response to the discussion paper, *Limit on fluid loss from thawed poultry*, released for comment from 10-25 October 2005. The submissions were from:

- Industry groups
 - Australian Chicken Meat Federation
 - Bartter Enterprises
 - Cordina Chicken Farms Pty Ltd
 - Golden Cockerel Pty Ltd
 - Ingham's Enterprises (NZ) Pty Ltd
 - Poultry Industry Association of NZ
 - Red Lea Farm Fresh Chickens
 - Tegel Foods Ltd
- Australian jurisdictions
 - Department of Health in Western Australia
 - Department of Human Services Victoria
 - Safe Food Production Qld
- New Zealand Food Safety Authority
- Food Technology Association of Victoria
- Worcestershire Scientific Services
- Australian Consumers' Association

The information and data provided in the submissions has been used to inform the decision making process.

A summary of the submissions and a response to any issues raised is provided in the table below. As many of the submissions provided responses to the eight questions raised in the Initial Assessment Report, the summary indicates the comments received to each of these questions. Additional comments received are summarised at the end of the table.

Q1. How do poultry processors control the level of water absorption and retention by the poultry carcass?		
Submitter	Comments	Response
Dept of Health, WA, Jim Dodds	Water absorption and retention in poultry carcasses is routinely measured and controlled by industry in Western Australia (and would be routinely carried out Australia wide) and has been demonstrated during auditing. E.g. one of the largest processors, achieved water take up in the region 5.7% for small birds and 4.9% for large birds. Another processor achieved 5% for all birds. Of a sample of 200 birds thawed annually by one processor, a bird fluid loss of 3.8% (average) has been recorded while another processor showed a 5% (average) fluid loss for thawed birds.	This data was considered as part of the assessment of the options (see section 9.2.8).
Golden Cockerel Chicken, R. Turner	Water pickup in whole birds during water chilling is controlled by water temperature, water agitation and length of time birds are in the water. Cold water reduces the temperature of dressed chicken meat and limits bacterial growth. Temperatures are usually controlled in a two stage process [2 tanks] with <10°C in the first tank and 4°C in the final tank. Lower temperatures mean quicker chilling and less water pickup. Necks present during chilling can cause trapping of excess water in the bird cavity. Freezing birds soon after water chilling retains more fluid.	This information was considered as part of the assessment of the options (see section 9.2.8).
Australian Chicken Meat Federation	Processing factors which can raise moisture pickup (MPU) and retention include: <ul style="list-style-type: none"> • high scald tank temperature • excess plucking time/temperature • carcass damage during plucking and evisceration • excess agitation in water/chill tanks • high wash/chill water temperatures • longer dwell time in wash/chill tanks • drainage time/temp/technique in the chill tank as chilled birds retain more moisture. Most processors minimize MPU where possible since excess moisture is undesirable for quality and excessive tares must be allowed to ensure Weights and Measures Regulations are met.	This information was considered as part of the assessment of the options (see section 9.2.8).

Q1. How do poultry processors control the level of water absorption and retention by the poultry carcass?		
Submitter	Comments	Response
Bartter Enterprises, L. Morrison	<ol style="list-style-type: none"> 1. Spin Wash Temperature as the colder the temperature the lower the MPU. Closing pores as soon as possible minimises uptake. 2. Level of agitation. 3. Residence time in spin chillers 4. Applied sprays cleaning birds prior to spin chillers 5. Level of stress on the bird prior.(stressed and dehydrated will pick up more. 6. Size of the bird processed – small birds pick up is harder to control 7. Mechanical damage as cuts and tears increase MPU 8. Level of Evisceration – neck retained increases MPU. 9. Length and method of drip line. 10. Effectiveness of dewatering units.(length and speed) 11. Storage or pre drainage of whole birds. 12 Scald temperature (hot scald increases MPU) 13 Plucking time 	This information was considered as part of the assessment of the options (see section 9.2.8).
Ingham’s Enterprises NZ	<p>Excessive plucking loosens the skin from underlying tissues which allows subcutaneous “water pockets” to develop during the later chill/wash stages.</p> <p>Carcass damage from faulty plucking increases water penetration beneath the skin.</p> <p>Excessive agitation in chill/wash tanks can increase MPU</p> <p>Residence time in the chill wash system influences moisture pick-up. The longer the residence time the greater the water pick-up.</p> <p>The temperature of the water is directly related to pick-up. Pick-up decreases in relation to decreasing water temperature.</p> <p>Drainage time can influence moisture retention but this is of limited practical significance.</p> <p>Poultry processors control moisture pick-up by addressing the above factors.</p> <p>Most processors aim to minimise moisture pick-up as it is undesirable from a consumer perception point of view to have excessive moisture leakage into packaging.</p>	This information was considered as part of the assessment of the options (see section 9.2.8).
Poultry Assoc of NZ, J. Midwinter	<p>Scald Tank Temperature</p> <ul style="list-style-type: none"> • Plucking Time and Technique • Agitation levels, water temperatures and residence times in the chill wash • Drainage time and Temperature • Any damage to the carcass increases water retention <p>Controlling any of these processes to reduce water retention affects other variables such as rate of cooling or muscle temperature.</p>	This information was considered as part of the assessment of the options (see section 9.2.8).

Q1. How do poultry processors control the level of water absorption and retention by the poultry carcass?		
Submitter	Comments	Response
Red Lea farm fresh chickens, An Mai	Scalding temperature and time, plucking time and technique, evisceration technique and water spray, wash / chill temperatures and times. Drip time and quick air chill retain more moisture in tissues.	This information was considered as part of the assessment of the options (see section 9.2.8).

Q2. What processing practices impact on water absorption?		
Submitter	Comments	Response
Dept of Health, WA. Jim Dodds	Agree that time in spin washing and spin chilling impacts on water absorption. Western Australia industry knows precise times required for different weighted birds to reach target temperatures. The argument that additional time during spin washing/chilling to obtain cleaner carcasses under HACCP, is misleading, as contaminated or dirty carcasses are required, under the Australian Standards to be removed from the production line and treated separately, prior to re entering the spin washer/spin chiller. Main processing practice impacting on water absorption is use of spin/wash chiller to chill carcasses. Water absorption depends on time a carcass remains in a spin/wash chiller and the amount of agitation applied.	It is agreed that the main stage of the primary processing of poultry that impacts on the amount of water absorbed by the poultry carcass is chilling. Increasing the fluid loss limit is not the preferred option for various reasons including the conflicting advice received from industry and the Dept of Health, WA.
Golden Cockerel, R. Turner	Water chilling [25-30 min] is followed by air chilling [80 min] at 0-1°C. During air chilling approximately one third of the water picked up during water chilling is lost. Averages of test conducted over last 12 months indicate:- Water pickup during water chill [6.5%]; water pickup remaining after air chill [4.2%]; fluid loss from frozen birds [3.8%] Subsequent loss of water absorbed will depend on bird temperature after chilling, the number of processing steps after chilling, time taken prior to freezing, and the rate of freezing [frozen as individual birds or slower in cartons].	This information was considered as part of the assessment of the options (see section 9.2.8).
Aust Chicken Meat Federation	Factors include: age and size of birds; weather; stress level at slaughter and killing technique; evisceration technique; water/chiller temperature; dwell time in wash/chill tanks; use of chemicals anti-salmonella decontaminants; and drip time/bird temperature/technique.	This information was considered as part of the assessment of the options (see section 9.2.8).
Red Lea farm fresh chickens, An Mai	As above response from ACMF	
Poultry Industry Association of NZ, (Inc) J. Midwinter	As above response from AMCF. Water uptake occurs during all of the following processes but the most significant uptake occurs during the immersion chill wash process.	This information was considered as part of the assessment of the options (see section 9.2.8).
Ingham's Enterprises, NZ, B. Jones	As above. However, the most significant uptake occurs during the immersion chill wash process - scalding; plucking; evisceration; inside-outside wash; and chill/wash	This information was considered as part of the assessment of the options (see section 9.2.8).
Bartter Enterprises, L. Morrison	See response from Bartter Enterprises to Question one on previous page	

Q3. How have these practices changed since the shift in focus to food safety, as illustrated by the introduction of HACCP?		
Submitter	Comments	Response
Dept of Health, WA. Jim Dodds	The industry process has not changed significantly since the introduction of a food safety focus. In Western Australia, the equivalent bacterial effect of 5 mg/L free chlorine is required to be maintained in spin washers/chillers and this has proved to be effective. WA approach since introduction of the Australian Standards requires industry to focus on controlling processes to limit contamination levels rather than introducing washing systems to alleviate processing faults.	Increasing the fluid loss limit is not the preferred option for various reasons including the conflicting advice received from industry and the Dept of Health, WA.
Golden Cockerel,	Water pickup and water temperature monitoring has increased Bird temperatures are now reduced more effectively and efficiently than previously	This information was considered as part of the assessment of the options (see section 9.2.8).
Australian Chicken Meat Federation Inc. V. Kite	Water serves several important food safety functions in poultry processing, including: Evisceration sprays dislodge food borne pathogens present on and in live animals at slaughter and contaminate the carcass by faecal spillage during evisceration. Equipment sprays remove gross faecal contamination on equipment and minimize bird to bird contamination. Pre-chill washes remove gross contaminants like fat, dirt and feathers from carcasses prior to entering the chill tank. This allows maintenance of effective free available chlorine levels in the chill tank to prevent bacterial cross-contamination of carcasses and reduce levels and numbers of food borne pathogens such as <i>Salmonella and campylobacter</i> . Reducing faecal spillage during evisceration, maintaining free available chlorine in the chill tank and reducing the deep muscle temperature of the carcass to a minimum prior to packing are critical control points for incidence and level of pathogens such as <i>Salmonella and Campylobacter</i> . HACCP-based food safety programs focussing on increased water washes and hyper-chlorination in the chill tank have been the most effective strategy internationally for reducing <i>Salmonella and Campylobacter</i> levels in the processing plant. This requires additional water in evisceration sprays, increased carcass washing and lower carcass temperatures ex the chill tank. A major change in Australia is the shift to higher carcass weights (1.75 kg liveweight to 3.5 kg liveweight) and for additional chill residence time to reduce carcass temperature prior to packing.	This information was considered as part of the assessment of the options (see section 9.2.8).
Red Lea farm fresh chickens An Mai	Evisceration and equipment water spray have been increased in pressure and volume to reduce food-borne pathogens and remove gross faecal bird-to-bird contamination. Water replacement (overflow) and maintaining free available chlorine at 1 – 4 ppm for spin washers and chillers. Poultry carcasses remain in the spin chilling tank depending on the size and temperature of birds. Quick air chilling is contributing to increased water retention.	This information was considered as part of the assessment of the options (see section 9.2.8).

Q3. How have these practices changed since the shift in focus to food safety, as illustrated by the introduction of HACCP?		
Submitter	Comments	Response
Poultry Industry Association of NZ (Inc). J. Midwinter	<p>Increased carcass water exposure through the following:</p> <ul style="list-style-type: none"> • Evisceration and other sprays used extensively to keep carcasses free of contamination. • Increase spin/chill retention times to lower the muscle temperature exiting the chill tank reduces microbiological contamination. Larger bird size also increases the time required for spinchill retention. • Increased washing and spraying of equipment 	This information was considered as part of the assessment of the options (see section 9.2.8).
Ingham's Enterprises NZ B. Jones	<p>Since introduction of HACCP:</p> <p>a) forced processors to achieve colder temperatures ex spin chilling to improve microbiological quality of processed carcass – partly for pathogen control and partly to enhance keeping quality i.e. shelf life by controlling spoilage organisms)</p> <p>b) forced processors to use more water to rinse birds and processing equipment during the processing operation. Aim here is to reduce microbiological carriage levels at the end of processing.</p> <p>Evisceration sprays at intervals throughout processing operations remove food borne pathogens and spoilage bacteria from the carcass.</p> <p>Equipment sprays remove gross bacterial contamination from equipment and minimise bird to bird and equipment to bird cross-contamination.</p> <p>As poultry carcasses are chilled by direct immersion in water tanks, water is absorbed into the skin and meat.</p> <p>Removing faecal spillage with water containing free available chlorine in the chill tank and reducing the deep muscle temperature to a minimum prior to packing are critical control points in the control of pathogens such as salmonella and campylobacter.</p> <p>HACCP programs that achieve defined water flow rates per carcass and defined free available chlorine levels are important strategies in reducing these pathogens.</p> <p>A significant change is processing at considerably higher carcass weights, resulting in longer residence times to achieve the required exit temperatures. This has increased MPU.</p>	This information was considered as part of the assessment of the options (see section 9.2.8).
Barter Enterprises. L. Morrison	<p>HACCP and increased live weight have occurred simultaneously. Live weight increase has led to higher residence time in spin chillers to lower body temperature. To limit bacterial contamination during packing, deep muscle temperatures are lower than those accepted in the past. Higher standards have led to more inline sprays to limit bacterial adherence to carcasses and bird to bird transmission. These factors have resulted in more MPU and increased the difficulty of meeting the 6% MPU standard. To offset increased MPU from the processing of larger birds and improved, HACCP programs, dewatering units have been installed. Necks are now removed from chickens along with other techniques known to lower MPU.</p>	This information was considered as part of the assessment of the options (see section 9.2.8).

Q4. Is the current limit of 60g fluid loss/kg weight technologically feasible using good manufacturing practice? If not, what limit can consistently be achieved? (Provide data where possible).		
Submitter	Comments	Response
Dept of Health, WA. Jim Dodds	Industry could work with whatever fluid loss limit is set in the Food Standards Code including the current limit of 60 g/kg, which can be consistently achieved. Any set limit however, can only ever be an average limit because industry will want to work up to the set limit and existing controls are not sensitive enough to achieve an absolute limit. Absolute limits are also too inflexible under a compliance driven auditing regime.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Golden Cockerel Chicken. R. Turner	For our process there is no problem. However processors who water chill only, freeze quickly after water chill, and who aim for 7-8% water pickup during chilling, will have difficulty in achieving <6% of fluid loss.	This information was considered as part of the assessment of the options (see section 9.2.8).
Aust Chicken Meat Federation Inc. V. Kite	The current standard of 60g/kg is achievable in all carcasses only by compromising food safety standards. At an average thaw loss of 60g/kg, the range will vary from 3-9%. Individual carcasses will still exceed the limit. This has been recognised in the previous industry MPU standard of 80g/kg, average over 20 carcasses. The amount of water should not be reduced to the extent that it negatively affects the ability to reduce pathogens or meet chilling requirements. 60g/kg could only be achieved as an average by significantly reducing the immersion time in the chill tank, resulting in excessive product temperatures on the packing floor, and increased Salmonella levels on carcasses.	This information was considered as part of the assessment of the options (see section 9.2.8).
Red Lea farm fresh chickens An Mai	The current limit of 60 g is achievable but not appropriate due to the change of food safety, HACCP, <i>E. coli</i> . standard in Section 2 – Product testing for poultry abattoirs and the free available chlorine standard for spin washing and chilling. Would prefer 80g fluid loss for thawed poultry.	This information was considered as part of the assessment of the options (see section 9.2.8).
Poultry Industry Assoc of NZ (Inc) J. Midwinter	No. With current good manufacturing practice, consumer demands and food safety practices, 60g fluid loss/kg weight limit is not achievable consistently. PIANZ supports the suggested 80g fluid loss/kg limit.	This information was considered as part of the assessment of the options (see section 9.2.8).
Ingham's Enterprises NZ B. Jones	Consider cannot consistently achieve 60g/kg using current processing parameters. This standard could be achieved but would require compromising food safety and shelf life objectives. There is always a range in moisture pickup (MPU) due to inherent variability in incoming flocks. Not possible to achieve a standard where all birds have a uniform MPU. Thus there will always be a range about a mean whether it be 60g or 80g/kg.	This information was considered as part of the assessment of the options (see section 9.2.8).

Q4. Is the current limit of 60g fluid loss/kg weight technologically feasible using good manufacturing practice? If not, what limit can consistently be achieved? (Provide data where possible).		
Submitter	Comments	Response
Bartter Enterprises L. Morrison	The 6% level can only be achieved by compromising the present standards of food hygiene i.e. less residence time in spin chillers or air chilling . Air chilling compared to spin chillers is less effective in controlling contamination . 8% MPU is achievable provided it is averaged across 20 birds. Refers to work of Professor Geoff Scurry (University of Western Sydney) which indicated private tests carried out by CML .The formula for calculation of drip loss should also take account of weight in excess of sale weight which processors may add during periods where it is necessary to increase spin chill dwell time or install new equipment which may increase MPU at the same time it improves product quality .	This information was considered as part of the assessment of the options (see section 9.2.8).

Q5. What are the costs and benefits to industry of maintaining the current requirement of 60g/kg fluid loss for frozen poultry? What are the costs and benefits to industry of returning to a limit of 80g/kg?		
Submitter	Comments	Response
Dept of Health, WA. Jim Dodds	Cannot comment on costs and benefits of retaining the current limit of 60 g/kg fluid loss or returning to a limit of 80 g/kg fluid loss for frozen poultry.	
Golden Cockerel, R, Turner	An extra 20g/kg will equate to approximately and extra 5 cents /kg on the price of the frozen bird.	Comment noted.
Australian Chicken Meat Federation Inc V. Kite	6% Benefits: Less water usage, lower treatment costs, reduced plant equipment costs (fewer chill tanks), lower product tares. Costs: Increased levels and numbers of Salmonella and Campylobacter. 8%: Benefits: Reduced levels and incidence of Salmonella and Campylobacter on carcasses. Costs: Increased water usage, higher water treatment and disposal costs, increased plant equipment costs (chiller baths, in-line wash sprays).	This information was considered as part of the assessment of the options (see section 9.2.8).
Red Lea farm fresh chickens An Mai	Reduced levels and incidence of Salmonella and E. coli and improve the shelf life of the product.	Comment noted.
Poultry Industry Association of NZ (Inc) J. Midwinter	60 g/kg fluid loss for frozen poultry. Costs • regulation costs for non compliance, loss of product quality, increased food safety concerns and reduced shelf life Benefits lower water use and plant equipment costs. 80 g/kg fluid loss for frozen poultry. Costs greater water use, investment in equipment required and public relations issues. Benefits • Achievable regulations and improved food safety.	This information was considered as part of the assessment of the options (see section 9.2.8).

Q5. What are the costs and benefits to industry of maintaining the current requirement of 60g/kg fluid loss for frozen poultry? What are the costs and benefits to industry of returning to a limit of 80g/kg?		
Submitter	Comments	Response
Ingham's Enterprises NZ B. Jones	Costs of retaining 6% include loss of shelf life, reduced pathogen control and loss of customer confidence. Benefits of retaining 6% include less water usage, reduced costs of chilling equipment. Costs of 8% include additional chilling equipment, greater water usage. Benefits of 8% include improved control of carcass microbiological quality.	This information was considered as part of the assessment of the options (see section 9.2.8).
Bartter Enterprises L. Morrison	Maintaining 6% MPU and the present HACCP standards will cause the frozen whole bird market to cease. The 6% limit can only be maintained by lowering dwell time in spin chillers and dropping out inline sprays – leading to increased salmonella and campylobacter levels in both fresh and frozen chickens. The 8% MPU limit averaged over 20 birds enables industry to meet MPU levels and maintain present HACCP procedures for the production of safe food. The 8% MPU calculation should include an adjustment for weight above the sale weight. This will enable the installation of additional bird cleaning procedures to plants without the limitation resulting from the present methods of MPU calculations which does not credit excess weight added above the sale weight.	This information was considered as part of the assessment of the options (see section 9.2.8).
Condina Chicken Farms Pty Ltd Summertime Chicken Pty Ltd	Questions the benefits noted for the 6% level. Processors would more likely not make any such savings. Given that equipment is already in place, there would be a reluctance to compromise standards by reducing water usage during evisceration and spin chilling processes. Water would have to be removed, post spin chilling egg. longer dwell time, which would increase carcass temperatures. This outcome is self defeating as it compromises product standards. Notes that frozen chicken is a small % of total production, therefore to achieve a questionable outcome for this category, one is compromising the optimum result for the overwhelming majority of poultry production.	This information was considered as part of the assessment of the options (see section 9.2.8).

Q6. Is the current method of determining fluid loss appropriate? Would changing the method of determining fluid loss be appropriate? How should the method be changed?		
Submitter	Comments	Response
Dept of Health, WA. Jim Dodds	The current method of detecting fluid loss is appropriate. Some flexibility in determining a sample lot is needed to move away from a reliance on one off sample results. Results should also be expressed as an average of the samples tested (i.e. an average of x birds over x period of time).	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.

Q6. Is the current method of determining fluid loss appropriate? Would changing the method of determining fluid loss be appropriate? How should the method be changed?		
Submitter	Comments	Response
Golden Cockerel, R. Turner	MPU during water chilling varies greatly from bird to bird due mainly to the time birds spend in the chilling water [excluding any problems with trapped water]. The water chill time varies because some birds may travel through the water quickly while others move more slowly – due to design and setup of water chillers. This causes variations in fluid loss on thawing. Thus fluid loss should be averaged over a number of birds to ensure a better estimate of fluid loss. The number of birds to be tested should be a minimum of 5 but 10 would give a better indication. Consideration should be give as to whether all birds tested are the same size or varying sizes.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Aust Chicken Meat Federation Inc. V. Kite	Variables such as bird size, sex etc result in a range of MPU levels. The previous MPU standard of 20 units is appropriate. The current method is inappropriate and not consistently achievable. There will always be a significant range in thaw loss between individual carcasses.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Red Lea farm fresh chickens An Mai	As above response from ACMF.	
Poultry Industry Association of NZ (Inc) J. Midwinter	The current method of determining water content of frozen poultry is cumbersome but accurate. The measure should be over 20 carcasses against the average – not a solitary specimen. While poultry processing has been industrialised the basic product, the bird, is a variable that cannot be wholly accounted for. Variations in bird size lead to differing MPU through processing, producing a variable product for sale that should be reflected in the testing method.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Ingham’s Enterprises NZ. B. Jones	Incoming flock variables result in a range of MPU levels. A standard is appropriate, but this should be based on an average. The current method is inappropriate due to the variability.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Bartter Enterprises . L. Morrison	The present method of calculation does not give credit for birds being sold above the advertised sale weight and not being averaged over a number of birds. The method should be changed to overcome present shortcomings. Suggests the following calculation method: Amount of drip loss in gm minus (actual weight of the chicken less the marked weight of the chicken) divided by the actual weight of the chicken. E.g. for a bird in a size 18 package which in fact weights 1.84 kg and had a drip loss of 180 gm the calculation would be $180 - (1840 - 1800)$ divided by $1840 \times 1000 = 80$ ml per 1000 gm instead of being 100 mL based on the present methods. At present, consumer can receive more that the declared weight and the processor can still be fined for excess drip loss. This calculation should be averaged over 20 birds .	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.

Q7. What are the implications of weight and measures requirements? What other measures are in place to protect consumers from misleading and deceptive practices? Would these adequately address the issue negating the need for a standard for fluid loss from thawed poultry in the Code?		
Submitter	Comment	Response
Dept of Health, WA. Jim Dodds	Weights and measures should accurately account for the weight expected by consumers for fair trading purposes. The price issue raised by industry is a marketing issue.	Comments noted.
Golden Cockerel Chicken. R. Turner	Frozen birds sell for less than fresh birds and cost more to produce due to freezing and packaging costs. Weights and measures relates to products as sold, providing MPU is controlled and fluid loss is monitored/legislated. Company does not see problems with existing system even if it were to be raised to 8% fluid loss. Frozen birds comprise a small % of current production and are governed by requirements of fresh chicken. For fresh birds, fluid loss over 3-4 days of chiller storage can be around 3%. Processors have to allow for this when pre-packing birds/chicken meat, so it is not in their interest to achieve large MPU. If the MPU is too great in fresh birds, substantial fluid is lost during storage, leading to customer dissatisfaction. Even if the weight is still correct. Company is governed by customers' expectations and the product/presentation.	Comments noted.
Aust Chicken Meat Federation Inc. V Kite	Conformance with Weights and Measures regulations is achieved by allowing sufficient tare for the MPU and loss to ensure correct weight is delivered to the consumer. Consumers can be protected by a regulatory thaw loss standard of 80g/kg averaged over 20 carcasses.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Poultry Industry Association of NZ (Inc) J. Midwinter	Consumers would be protected by the regulatory thaw loss standard of 80g/kg averaged over 20 carcasses. This issue is covered by other regulations including fair trading legislation in both Australia and New Zealand. PIANZ believes implications for weights and measure requirements are the subject of negotiations between the New Zealand Poultry Industry and the NZ Ministry of Consumer Affairs.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2. Option 3 (see section 9.2.8.3) discusses deferring this issue to fair trading legislation.
Ingham's Enterprises NZ B. Jones	Implications for weights and measure requirements is subject of negotiations between the New Zealand Poultry Industry and the NZ Ministry of Consumer Affairs – with discussions between the poultry industry and the Ministry due to commence late 2005. Consider the issue of thaw loss should be regulated by a standard to protect consumers. A standard of 80g/kg would be appropriate and reflect current practice provided this is based on an average.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.

Bartter Enterprises L. Morrison	Most processors endeavour to compensate for excessive moisture by adjusting up the tare weight. Suggested changes to the method of MPU calculation will protect the consumer in that birds with higher than the regulated MPU can be compensated for by the processor increasing the weight above that of the advertised sale weight.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
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Q8. What other ways could this issue be addressed (e.g. labelling of the percentage of water content)?		
Submitter	Comments	Response
Dept of Health, WA. J Dodds	Establishing an average percentage water content of poultry carcasses by industry and labelling that content is an optional mechanism that WA would strongly support.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2. Option 5 (see Section 9.2.8.5) discusses labelling.
Golden Cockerel Chicken R. Turner	Existing legislation and labelling laws are adequate and labelling for added water content is not necessary. Air chilled birds give a better presentation and thus it is not in the interest of the processor to achieve excess water pickup.	Option 5 (see Section 9.2.8.5) discusses labelling.
Aust Chicken Meat Federation Inc. V. Kite	An alternative would be to label carcasses with the percentage of water content, although the industry preference is for a thaw loss standard of 80g/kg averaged over 20 carcasses. All poultry processed in Australia complies with the Australian Standard for the Construction of Premises and Hygienic Production of Poultry Meat for Human Consumption (2nd Edition) (SCARM Report No. 3), which specifies many of the conditions that must be complied with during the processing of poultry - see particularly Section 15 (Operational Hygiene Requirements) and compliance with this standard also limits the extent to which industry could amend many of the processing conditions which might otherwise impact on MPU.	Option 5 (see Section 9.2.8.5) discusses labelling.
Red Lea farm fresh chickens An Mai	Labelling fluid loss from thawed poultry under approved thawing conditions in Australian Standard (see above) Sections 15.111, 15.112, 15.113. However, prefer a standard of 80g/kg averaged over 20 carcasses or more. Supports submission from the Australian Chicken Meat Federation Inc.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Poultry Industry Association of NZ (Inc)	Labelling the percentage of water may be of little value to consumers. PIANZ questions the need for specific and highly prescriptive measures as the issue is subject to fair trading legislation in both Australia and New Zealand. These measures target frozen poultry while not issuing similar requirements for other types of meat product.	Option 5 (see Section 9.2.8.5) discusses labelling. Option 3 (see section 9.2.8.3) discusses deferring this issue to fair trading legislation.
Ingham's Enterprises NZ B. Jones	Not in favour of labelling processed birds with the percentage water content. All companies in New Zealand use a similar process and their products will have a similar water content. Thus labelling will offer the consumer limited additional purchasing information. Industry preference is for a thaw loss standard of 80 g/kg averaged over 20 carcasses.	Option 5 (see Section 9.2.8.5) discusses labelling.

Q8. What other ways could this issue be addressed (e.g. labelling of the percentage of water content)?		
Submitter	Comments	Response
Bartter Enterprises L. Morrison	Would help stop adverse publicity and enable processors to comply. Prefers an 8% MPU level averaged over 20 birds. Recommends an adjustment to the formula to allow processors to compensate for procedures that improve bacterial control which may lead to increased MPU. A formula for MPU that gives credit for birds over the sale weight, allows industry to adopt new methods for improved bacterial control without the concerns created by a method of calculation which does not take into account the extra weight added by the processor to compensate the consumer for the extra MPU.	This information was considered as part of the assessment of the options (see section 9.2.8).
Condina Chicken Farms Pty Ltd Summertime Chicken Pty Ltd Mr John Condina	Considers it neither practical nor sensible to label carcasses with the percentage water content. Supports the recommendation of the ACMF above.	Option 5 (see Section 9.2.8.5) discusses labelling.

Additional comments received		
Submitter	Comments	Response
Poultry Industry Association of NZ Inc J. Midwinter	In the current competitive environments of New Zealand and Australia changes in production costs will be passed on to the consumer through market pressure. Any savings in production costs would not be of financial benefit to poultry producers and the consumers remain protected. Considers an acceptable limit for fluid loss at 80 g/kg would be appropriate for the Australian and New Zealand poultry industries and submits that measuring this regulation should be averaged over 20 birds. The limit for fluid loss at 80 g/kg represents good manufacturing practice enabling the Australian and New Zealand poultry industries to provide a safer product that meets regulations and customer demand.	While the preferred option is not to set a fluid loss limit, the difficulty of setting an absolute limit is acknowledged in Sections 9.2.8.1 and 9.2.8.2.
Safefood Qld, Kerry Bell	Does not consider fluid loss in thawed poultry is a food safety provision, notwithstanding the objectives of the FSANZ Act. Considers this matter is best addressed through Fair Trading provisions. However, considers that in relation to Question 4 above, the current limit of 60g fluid loss per kg weight is not appropriate given current processing technology.	Option 3 (see section 9.2.8.3) discusses deferring this issue to fair trading legislation.

Additional comments received		
Submitter	Comments	Response
Tegel Foods Ltd NZ R. Biggs	<p>Supports comments in the PIANZ submission, and considers that the effects of processing on individual carcasses leads to variability in MPU. Reiterates reasons for variability included in other submissions, including: size of birds, plucking measures, skin damage, evisceration equipment set for average sized birds, residence times in chill/wash etc.</p> <p>Notes that MPU is measured routinely at some plants, with 900 samples taken at one Tegel plant over 3 months showing a range of 1% to 14.9%. Measurements were obtained by weighing and tagging birds pre-chill wash, recording the retention time in the chill wash, draining the birds for 20 minutes after chill wash and re-weighing them. The mean of the 900 samples was 5.5%; the Standard Deviation was 2.26%. This test only measured MPU from the chill wash process; inevitably birds would have picked up water from scalding, plucking, washing and evisceration before the pre-chill wash weighing. The amount of water used in chicken processing in the Tegel processing plants has increased over the last few years, the major driver being food safety and wholesomeness as captured in HACCP based Risk Management Programs, increasing the volume, pressure and contact time of birds with water. Inevitably this will cause greater MPU. Submission supports the stance by NZFSA in querying whether a standard is necessary for fluid loss on thawed raw poultry. If a limit is deemed necessary, it should be based on the average of a number of samples, as the variability of individual samples is very high and one sample could not be construed to be representative. If a limit is required submission supports the PIANZ proposal of an average of 20 samples to be less than or equal to 8%.</p>	<p>This data was considered as part of the assessment of the options (see section 9.2.8).</p>
ACA Clare Hughes	<p>The discussion paper states MPU is designed to protect consumers from misleading and deceptive practices. ACA understands a limit of 6% previously existed in NZ while in Australia it was 8%. When the standard was revised the lower figure (6%) was adopted, presumably in the best interests of consumers. ACA considers that if NZ producers can meet the 6% figure and produce a safe product, Australian manufacturers should be able to do this. ACA realises more comprehensive data will be provided in the draft assessment report, however ACA does not believe FSANZ has sufficient information to justify raising the level to 8% at this stage. A better understanding of the extent to which manufacturers in other states and in NZ are meeting the 6% level, is needed. While the poultry industry has presented a range of arguments on why fluid level should be raised to 8%, ACA considers there is insufficient evidence to determine the cause of the problem and the difficulty in meeting the 6% level. ACA believes more information is needed on the NZ situation and whether or not NZ producers have difficulty reaching the 6% figure. If adequate data does not exist, more research should be conducted in NZ before any recommendation is made to raise the level to 8%.</p>	<p>Increasing the fluid loss limit is not the preferred option for various reasons including the conflicting advice received from industry and the Dept of Health, WA.</p>

Additional comments received		
Submitter	Comments	Response
Condina Chicken Farms Pty Ltd Summertime Chicken Pty Ltd John Condina	Questions the benefits noted for the 6% level. Processors would more likely not make any such savings, given that equipment is already in place, there would be reluctance to compromise standards by reducing water usage during the evisceration and spin chilling process. Water would have to be removed, post the spin chilling, e.g. with a longer dwell time, which would have the effect of increasing carcass temperatures. This outcome is self-defeating as it compromises product standards.	These comments refer to a very early draft of the fluid loss section, which has now been substantially amended.
Dept of Human Services Victoria Victor Di Paola	Considers that whilst there may be merit in raising the limit on fluid loss from large birds, the paper does not provide a convincing argument for the amount of fluid loss to be increased for all sized birds. Considers merit in exploring alternate methods of dealing with the problem through current HACCP Programs and other practices, as opposed to altering the Standard to increase the limit of fluid loss. Notes that preparation of the Draft Assessment Report for the Primary Production and Processing Standard for Poultry Meat by FSANZ, will include the issue of fluid loss in thawed poultry with a proposal for its resolution, although retaining it in Chapter 2.	This information was considered as part of the assessment of the options (see section 9.2.8).
New Zealand Food Safety Authority (NZFSA). Carole Inkster	Supports the review of the requirements for fluid loss from thawed poultry as set out in the Food Standards Code under Standard 2.2.1, and agrees these limits are intended to help prevent deceptive or misleading practices. However, questions the need for specific and highly prescriptive measures for practices that are now subject to the fair trading legislation in both Australia and New Zealand. Limits for frozen poultry were originally introduced in New Zealand in the early 1970s and predate fair trading legislation. Notes that these limits only apply to frozen poultry with no such requirements for other types of poultry or other types of products including meat, fish etc. Notes the general provisions under Standard 1.2.4 clause 3 relating to declaring added water apply.	This information was considered as part of the assessment of the options (see section 9.2.8).
Food Technology Association of Victoria Inc. Comment provided from the FTA Technical Sub Committee by David Gill, President FTA Victoria	Technical Sub Committee raised the issue of the limit on fluid loss being reduced from 80g/kg to 60g/kg based on one submission which was the New Zealand limit at the time and yet 5 submissions had supported retention of the higher and current limit at that time. This decision was not based on published rationale, was against the majority, and hence defies current logic except to presume that a more stringent limit was preferred or the inference that the previous Australian industry procedures were not based on good manufacturing practice.	The difficulties of setting a fluid loss limit are discussed within options 1 and 2 (see Sections 9.2.8.1 and 9.2.8.2).

Additional comments received		
Submitter	Comments	Response
Worcestershire Scientific Services UK. Country Analyst. Bob Stevens	Notes this issue has caused debate and analysis in Europe, the challenge being to distinguish authentic poultry from poultry or poultry cuts that have been deliberately treated to massage in water, which can then be sold (if undetected) at poultry prices. Notes science is aiming to help poultry flesh retain the added water. Fears that simply setting a limit on fluid loss, will only encourage the development (and import) of technologies designed to prevent fluid loss and retain the added water in the meat. Fluid loss is a symptom, not the disease. Technologies exist ranging from simple starch inclusion to colloids such as gelatine to sophisticated protein hydrolysates. Unless a minimum level is set for poultry content of what appears to be poultry, or conversely set a maximum content for water extraneous to the poultry, one will not prevent such food debasement happening in Australia. Australia presumably has access to EC methodology for analysis of 7 carcasses to assess the water content. States it is recognised that safe processing of frozen poultry will incur some water uptake, depending on the processes used, but 6% has been shown to be a workable ceiling for such water uptake in the EC. Does not know how Australia's food enforcement system works, but the test described in the discussion paper seems intended for a fairly basic laboratory. Truss FSANZ will receive input from food scientists with interests in consumer protection and will be pleased to help with further background should this be required.	The difficulties of setting a fluid loss limit are discussed within options 1 and 2 (see Sections 9.2.8.1 and 9.2.8.2).

Summary of the Benchmark Research on the Poultry Meat Industry

Following is a copy of the executive summary from the Benchmark Research on the Poultry Meat Industry. Colmar Brunton Social Research conducted this research for FSANZ. The final report was completed in June 2005 and is available from the FSANZ website.

EXECUTIVE SUMMARY

The major objective of government food safety standards is to protect public health and safety by reducing the risk of food borne illness and contamination in the food chain. In Australia, FSANZ works together with State and Territory governments and other organisations, to achieve its mission of helping to maintain a safe food supply, thereby protecting public health and safety.

FSANZ is currently preparing to implement a new chapter to the Australia New Zealand Food Standards Code, which will see national food regulation extend across all parts of the food chain, including primary production, processing and retail – in essence from paddock to plate. One of these new standards due to be introduced in 2006 is the Primary Production and Processing Standard for Poultry Meat (PPSPM). This standard will complement the existing Chapter 3 Food Safety Standards.

In order to assist in the evaluation of the implementation of this standard in the future, FSANZ have identified the need for benchmark data on awareness, knowledge and behaviour of poultry meat businesses, government enforcement officers and consumers in relation to food safety issues. These benchmark data will provide FSANZ with information about the poultry meat industry before the standard is implemented in all States and Territories in Australia.

FSANZ identified three key stakeholder groups for the research: the poultry meat industry including poultry growers, processors, and wholesalers and retailers; government enforcement officers at the state and local government level; and consumers. Computer assisted telephone interviews (CATI) surveys were conducted for all three stakeholder groups. Questions were asked of all stakeholders about their awareness and knowledge of food safety practices and sources of information on food safety issues. For the food industry and enforcement officers additional questions were asked on the potential for different stages in the food chain to lead to food-borne illness, on awareness of the FSANZ Food Standards Code (Chapter 3 Food Safety Standards and the proposed Chapter 4 standards) and about the regulations and guidelines currently used by each sector. Enforcement officers were also asked about their current responsibilities with respect to the poultry meat industry, where the gaps in regulations were with regards to preventing food-borne illness and how their responsibilities may change once the Chapter 4 PPSPM is implemented.

This report comprises a short Executive Summary of the research project, an Interpretative Summary of the main findings for each of the three stakeholder groups and the main report with the methodology used for each stakeholder group and full results. It should be noted that research findings based on the CATI surveys report on people's opinions, awareness and knowledge of food safety issues not on actual practices.

Food safety

Overall, food safety was found to be important by managers of businesses throughout the poultry meat industry. Only four percent of growers and one percent of wholesalers and retailers do not report food safety as important to them. Growers, processors, wholesalers and retailers all provide varying examples of the practices they employ to reduce the risk of food-borne illness, however maintaining good employee hygiene and pest controls are commonly mentioned by all three sectors (details of these practices are given in the Interpretive Summary and Full Report).

Businesses in all sectors consider several stages of the poultry meat supply chain may lead to food-borne illness if appropriate precautions are not taken, however, a significant proportion of food businesses do not know about the risks of food-borne illnesses in their sector or other related sectors. Most businesses in the industry believe growers, processors or supermarkets are doing enough to control food safety risks in their businesses. Take-away food businesses are seen as the stage within the industry more likely to lead to food borne illness, while live bird transport is seen as the stage least likely to lead to food-borne illness. Only wholesalers and retailers believe it is 'likely' that failure to apply appropriate precautions at the growing stage could lead to food-borne illness in the end product. Consumers are commonly seen by poultry meat businesses as not doing enough to control food safety risks from poultry meat and the most likely stage to lead to food-borne illness.

LGA, State and Territory Officers also believed the preparation of poultry meat for consumption by consumers to be the stage leading to the greatest risk of food-borne illness. After consumers, take-away businesses are seen as the next most likely to lead to food-borne illness. LGA officers see the poultry retail stage as the next most likely to lead to food-borne illness. State and Territory Officers, however, believe current practices in poultry processing could lead to food-borne illness, followed by poultry retailing, de-boning and the poultry growing stage. These answers may reflect the current role of State and Territory officers and LGA officers. While the role of enforcement officers varies according to jurisdiction, LGA officers are typically involved with poultry retailers and take-away food service businesses only. State and Territory officers work mainly with poultry processors, wholesalers and retailers.

In terms of the potential risk of chicken versus non chicken meat, overall, two-thirds of State and Territory Officers believe the risk of food poisoning is the same from all types of poultry meat, while a third believe the risk is greater in the chicken meat sector. This is higher than for LGA officers with almost half believing the risk of food poisoning is the same from all types of poultry meat, while a third believe the risk is greater in the chicken meat sector. Despite the views reported from the poultry meat industry and enforcement officers about consumer practices and handling of poultry meat, the vast majority of consumers report safe practices in transporting, handling and storing raw poultry meat, indicating a high level of awareness and knowledge regarding food safety.

For example, consumers typically purchase raw poultry meat from major supermarkets and usually transport this meat home in a shopping bag within 20 minutes of purchase. Those who use a cooler bag to transport raw poultry meat, typically do so in less than 20 minutes, while those who use an esky are more likely to take longer. Very few use potentially unsafe storage methods.

Consumers also demonstrate knowledge of safe and healthy practices in preparing raw poultry meat for consumption, usually thawing the meat (if frozen) prior to cooking, and the majority report using safe thawing practices. Consumers are careful to avoid practices that may lead to cross-contamination of raw poultry meat and other food items, and also report a good understanding of how to determine when chicken is cooked.

The vast majority of consumers also report safe practices in transporting, handling and storing pre-cooked poultry meat, indicating a high level of awareness and knowledge regarding food safety. The most popular type of pre-cooked poultry meat is a whole chicken, and is typically purchased hot and transported home in a shopping bag within a safe period of time. Pre-cooked poultry meat is typically eaten immediately or stored safely.

Sources of information on food safety issues

With regards to sources of information on food safety issues utilised, poultry growers appear the most likely to rely on industry information sources, while processors and wholesalers/retailers are more likely to nominate government sources of food safety information. Enforcement officers mention FSANZ as the most common source of information and other government departments, whilst the majority of consumers refer mainly to magazines or cooking books, the television and butchers or retailers for information on safe handling and cooking of poultry meat.

Standards and regulations used in the poultry meat industry

The standards, codes of practice and/or guidelines used in the poultry meat industry, and the extent of government and self-regulation in the poultry meat industry is very much aligned to the sector of the industry. Poultry growers are most likely to be self-regulated, with large proportions adhering to contractual obligations, industry guidelines and HACCP plans, with less than one-quarter aware of the Chapter 3 Food Safety Standards and fewer aware of the proposed Chapter 4 standard.

The most commonly mentioned obligations for processors to adhere to are those in HACCP plans, followed by State and Territory government food hygiene or safety regulations and Australian Standard obligations. A large majority of processors are aware of Chapter 3, however only a small proportion is aware of Chapter 4. Wholesalers and retailers are the least likely sector within the poultry meat industry to be exposed to self-regulation. The most commonly mentioned obligations for wholesalers and retailers to adhere to are local and state government regulations, the Food Standards Code and a HACCP plan. A majority are aware of Chapter 3, and at least one-third are aware of Chapter 4.

The specific legislation, standards and codes of practice used by enforcement officers typically reflects the different sectors of the poultry meat industry that enforcement officers are working in. State and Territory governments are seen as having the main responsibility for developing food safety requirements for all stages of the poultry meat supply chain, while the responsibility for enforcing standards is less clear.

Most State and Territory officers believe that current standards and regulations are effective for the poultry processing, de-boning, transportation, wholesale and retail stages of the food chain.

However, a significant proportion of these officers indicate they do not know about the effectiveness of Standards and/or regulations of the poultry growing and live bird transportation stages of the food chain. State and Territory officers are most likely to identify gaps in processing, growing and retail standards and regulations. They are also likely to believe there is not enough training in the application of the standards and regulations. The majority (two-thirds) of government officers believe the introduction of a PPPSPM will have a positive impact on the risk of food-borne illness from poultry meat by providing more information and/or better education for applying standards for enforcement officers; and allowing for an overall approach to be introduced, thereby improving consistency across the industry and jurisdictions.

Requirements for poultry meat and poultry meat products in the *Australia New Zealand Food Standards Code*

The *Australia New Zealand Food Standards Code*³⁷ (the Code) applies to all foods produced or imported for sale in Australia and New Zealand. The Code is the compilation of food standards and includes standards on food composition, labelling and contaminants, microbiological limits and food hygiene among other things. FSANZ is responsible for developing, varying and reviewing these standards, whereas State and Territory Governments are responsible for the enforcement of these standards.

Food standards in the Code are divided into one of four chapters. Each chapter is described briefly below with emphasis on the standards that pertain to poultry meat and poultry meat products. The specific standards in each chapter that could relate to poultry meat products are listed in Table 3.1.

Chapter 1 – General Food Standards

The general food standards apply to all food, including poultry meat products, sold or traded at retail or wholesale level in Australia. Such general standards include labelling requirements and compositional standards. The labelling requirements in Chapter 1 provide general product information such as food identification, date markings, nutrition information panels and directions for use and storage. The compositional standards in Chapter 1 define the additives, vitamins, minerals and processing aids permitted to be added to food products. Some food safety aspects, such as chemical and microbiological limits for poultry meat products are also included in this chapter.

Chapter 1 also describes the processing requirements for some poultry meat products, for example eviscerated poultry, dried meat, fermented comminuted meat products and semi-dry heat-treated processed meat (Standard 1.6.2).

Chapter 2 – Food Product Standards

Chapter 2 of the Code defines, for particular classes of foods, the labelling and compositional requirements. In this chapter, poultry is defined under the ‘Meat and Meat products’ class. Specific to poultry, this chapter sets a maximum limit of fluid loss from thawed poultry.

Chapter 3 – Food Safety Standards

The Food Safety Standards in Chapter 3 of the Code specify food safety control measures for each food handling step and requirements for notification of food businesses, food handlers to have skills and knowledge of food safety, health and hygiene of food handlers and the cleaning, sanitising and maintenance of food premises, equipment and food vehicles. The Food Safety Standards also specify design and construction outcomes for food premises, equipment and vehicles to facilitate compliance with the food safety requirements.

³⁷ Can be obtained from the FSANZ website <http://www.foodstandards.gov.au>

The Food Safety Standards apply to food businesses other than those engaged in primary production of food (includes the primary production of poultry). Chapter 3 does not apply in New Zealand.³⁸

Chapter 3 of the Code also contains Standard 3.2.1— Food Safety Programs that sets out requirements for food safety programs that are based on Hazard Analysis Critical Control Point (HACCP) principles.³⁹ This Standard takes a risk-based and preventative approach to managing food safety. The Standard is currently voluntary except where mandated under specific State or Territory legislation. It does not apply to primary production and does not apply in New Zealand.

Chapter 4 – Primary Production and Processing Standards

Chapter 4 of the Code contains the Primary Production and Processing Standards. At present this chapter only contains the requirements for wine production, however any Primary Production and Processing Standard for Poultry Meat developed would be included in this chapter. Chapter 4 standards do not apply in New Zealand.

Table. Standards in the Code that apply to poultry meat products, as of September 2005

Standard	Title	Requirements	Application to the poultry meat industry
1.1 Preliminary			
1.1.1	Preliminary Provisions – Application, Interpretation and General Prohibitions	Sets out the preliminary provisions which apply generally to the Code, including general application and interpretation provision. Regulates the general operation of the Code in its entirety, and includes definitions which have general application to the Code.	Applicable to all food sectors. No requirements specific for poultry meat or poultry meat products.
1.1A Transitional Standards			
1.1A.2	Transitional Standard for Health Claims	Specifies that health claims are not permitted, except where prescribed.	Applicable to all food sectors. No health claims are prescribed for poultry meat or poultry meat products.

³⁸ The treaty that was signed between the Australian and New Zealand Governments in 1995 to develop joint food standards did not include standards relating to food hygiene, for example the Food Safety Standards in Chapter 3. Thus these standards do not apply in New Zealand.

³⁹ The Codex Alimentarius Commission (Codex) defines HACCP as a system that identifies, evaluates, and controls hazards that are significant for food safety. It describes HACCP as a tool to assess hazards and establish control systems that focus on prevention rather than relying on end-product testing. Food Safety Programs, as defined by Standard 3.2.1 are based upon the HACCP system adopted by Codex and encapsulate the seven principles of the Codex HACCP system: conduct a hazard analysis; determine the critical control points (CCP); establish critical limit(s); establish a system to monitor control of the CCP; establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control.; establish procedures for verification to confirm that the HACCP system is working effectively; and establish documentation concerning all procedures and records appropriate to these principles and their application.

Standard	Title	Requirements	Application to the poultry meat industry
1.1A.3	Transitional Standard for Country of Origin Labelling Requirements	Clauses 1 and 2 detail the general country of origin labelling requirements for packaged foods.	Applicable to all food sectors. No requirements specific for poultry meat or poultry meat products.
1.2 Labelling and Other Information Requirements			
1.2.1	Application of Labelling and Other Information Requirements	Sets out labelling requirements for all foods.	Applicable to all food sectors. No requirements specific for poultry meat or poultry meat products.
1.2.2	Food Identification Requirements	Specifies three types of information that must be included on a food label to identify the food in question – name of food, lot identification, name and address of supplier.	Applicable to all food sectors. Poultry meat and poultry meat products have to be labelled according to this standard.
1.2.4	Labelling of Ingredients	Specifies requirements for labelling and naming of ingredients and compound ingredients.	Applicable to all food sectors. Poultry meat products have to be labelled according to this standard.
1.2.5	Date Marking of Packaged Food	Prescribes a date marking system for packaged food and the form in which these foods must be date marked.	Applicable to all food sectors. Poultry meat and poultry meat products have to be labelled according to this standard.
1.2.6	Directions for Use and Storage	Requires either directions for use and/or directions for storage of food, to be included on the label, where, for reasons of health and safety, the consumer should be informed of specific use or storage requirements.	Applicable to all food sectors. Poultry meat and poultry meat products have to be labelled according to this standard.
1.2.8	Nutrition Information Requirements	Sets out nutrition information requirements in relation to food that is required to be labelled under the Code and for food exempt from these labelling requirements. Prescribes when nutritional information must be provided, and the manner in which such information is provided. Nutritional information is only required to be provided on products that contain more than one type of ingredient.	Applicable to all food sectors. Poultry meat products that contain more than one ingredient have to be labelled according to this standard.
1.2.9	Legibility Requirements	Sets out general and specific legibility requirements for the labelling of packaged foods (i.e. format of text etc).	Applicable to all food sectors. Poultry meat and poultry meat products have to be labelled according to this standard.

Standard	Title	Requirements	Application to the poultry meat industry
1.2.10	Characterising Ingredients and Components of Food	Specifies requirements for the declaration of the percentage of characterising ingredients and components of food products.	Applicable to all food sectors. Poultry meat and poultry meat products have to be labelled according to this standard. For example the percentage of chicken in chicken soup would need to be declared.
1.3 Substances Added to Food			
1.3.1	Food Additives	Defines food additives, and regulates their use in the production and processing of food. Food additives not specified in this standard are not permitted to be added to foods.	Applicable to all food sectors. There are listings for specific additives permitted in poultry meat and poultry meat products.
1.3.2	Vitamins and Minerals	Regulates the addition of vitamins and minerals to foods, and the claims which can be made about the vitamin and mineral content of foods, with some exceptions listed. Specific vitamins and minerals are permitted for extracts and analogues of meat.	Applicable to all food sectors. Maximum claim permitted for vitamins and minerals in meat and meat products (including poultry meat)
1.3.3	Processing Aids	Regulates the use of processing aids in food manufacture, prohibiting their use in food unless there is a specific permission within this standard. Covers processing aids permitted generally; across all foods.	Applicable to all food sectors. Some of the processing aids could be used in the processing of poultry meat and poultry meat products.
1.3.4	Identity and Purity	Ensures that food additives, processing aids, vitamins and minerals and other added nutrients meet appropriate specifications for identity and purity.	Applicable to all food sectors. Processing aids used in the processing of poultry meat and poultry meat products have to meet the specifications in this standard.
1.4 Contaminants and Residues (As listed in Table 2)			
1.4.1	Contaminants and Natural Toxicants	Sets out the maximum levels (MLs) of specified metal and non-metal contaminants and natural toxicants in specific foods.	Applicable to all food sectors. Defines MLs for poultry meat products.
1.4.2	Maximum Residue Limits (Australia only)	Lists the maximum permissible limits for agricultural and chemical residues present in food.	Applicable to all food sectors. Defines maximum residue limits and extraneous residue limits for poultry meat products.

Standard	Title	Requirements	Application to the poultry meat industry
1.4.3	Articles and Materials in Contact with Food	Provides permission for articles and materials (packaging material) to be in contact with food if they are not capable of being swallowed or of obstructing any alimentary or respiratory passage or would otherwise likely to cause bodily harm, distress or discomfort. The Code does not specify which materials are permitted to be used for packaging product etc, rather this is set out in the Australian Standard for Plastics Materials for Food Contact Use (AS2070;1999).	Applicable to all food sectors. Articles and materials in contact with poultry meat and poultry meat products have to meet the requirements of this standard.
1.5 Food Requiring Pre-Market Clearance			
1.5.1	Novel Foods	Lists the six novel foods that are currently permitted for use in foods, and their condition of use. The novel foods permitted are: <ul style="list-style-type: none"> • DHA – rich dried marine micro-algae; • DHA – rich oil derived from marine micro-algae; • γ-cyclodextrin; • phytosterol esters; • tall oil phytosterols; and • trehalose. 	Applicable to all food sectors. Poultry meat and poultry meat products are permitted to contain these novel foods.
1.5.2	Food Produced Using Gene Technology	Regulates the sale of food produced using gene technology, other than additives and processing aids. At present only genetically modified (GM) crops have been permitted for use in food.	Applicable to all food sectors. Although there is the possibility that GM crops will be used as poultry feed, FSANZ and the OGTR have agreed not to allow a GM crop that is unapproved for human consumption to be used for poultry feed. Food derived from poultry fed GM feed is not required to be labelled as containing GM ingredients.
1.6 Microbiological and Processing Requirements			
1.6.1	Microbiological Limits for Food	Lists the maximum permissible levels of food-borne micro-organisms that pose a risk to human health in nominated foods, or classes of foods. Includes mandatory sampling plans to test for the presence of micro-organisms.	Applicable to all food sectors. Microbiological limits for poultry meat products.
1.6.2	Processing requirements (Australia only)	Sets out the requirements for processing of specific foods.	Sets out processing requirements for poultry meat and poultry meat products.

Standard	Title	Requirements	Application to the poultry meat industry
2.2 Food Product Standards – Meat, Eggs and Fish			
2.2.1	Meat and Meat Products (Clause 11 is an Australia only provision)	Includes definitions, compositional and labelling requirements for meat and meat products.	For poultry meat products there are requirements relating to: <ul style="list-style-type: none"> • Limit on fluid loss from thawed poultry • Composition of sausages • The presence of offal in food • Fat declaration for minced meat • Raw meat joined or formed into the semblance of a cut of meat • Inspection brands • Labelling of fermented comminuted processed meat • Labelling of fermented comminuted manufactured meat • Labelling of unpackaged fermented comminuted meat and fermented comminuted meat products
3 Food Safety Standards (Australia only)			
3.1.1	Interpretation and Application	These apply to the other food safety standards set out in Chapter 3 of the Code.	Applicable to all food sectors.
3.2.1	Food Safety Programs	Sets out requirements for food businesses to implement a food safety program based upon the HACCP concepts. The Ministerial Council provided guidelines to FSANZ to mandate food safety programs for four high-risk sectors. The high risk sectors identified were: <ul style="list-style-type: none"> • bivalve molluscs; • food for catering purposes; • food for vulnerable populations; and • manufactured and fermented meats. 	Applicable to all food sectors. All food services that provide catering or food to vulnerable populations will be required to have food safety programs. This includes those organisations serving poultry meat and poultry meat products. Processors involved in the production of manufactured and fermented poultry meat products will also be required to have a food safety program. ⁴⁰
3.2.2	Food Safety Practices and General Requirements	Sets out specific requirements for food businesses and food handlers that, if complied with, will ensure food does not become unsafe or unsuitable.	Depending on the State/Territory, this standard applies to establishments involved in processing and/or sale of poultry meat products.

⁴⁰ The application of Standard 3.2.1 to this sector is under development, however will apply to ready-to-eat manufactured and fermented poultry meat products.

Standard	Title	Requirements	Application to the poultry meat industry
3.2.3	Food Premises and Equipment	Sets out requirements for food premises and equipment that, if complied with, will facilitate compliance by food businesses with the food safety requirements of Standard 3.2.2.	Depending on the State/Territory, this standard applies to establishments involved in processing and/or sale of poultry meat products.