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Manatū Ahu Matua

Options to include all chickens in the poultry NMD programme

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Options to include additional classes of chickens in the poultry NMD

This options paper addresses the possible amendment to the Animal Products (National Microbiological Database Specifications) Notice 2015 (NMD) under the Animal Products Act 1999 to expand the scope of the poultry NMD programme to include all chickens that are processed for human consumption. The Ministry for Primary Industries (MPI) emphasises that the views and recommendations outlined in this paper are preliminary and are provided as a basis for consultation with stakeholders.

MPI will analyse submissions and amend the National Microbiological Database specification after due consideration of the feedback received. Once the amendment is finalised it will be issued by MPI and posted on the MPI website. Hard copies will be available on request.

SUBMISSIONS

MPI welcomes written submissions on the proposals contained in this document. All submissions must be received by MPI no later than 4 December 2015.

Written submissions should be sent directly to:

Chemical and Microbiological Assurance
Ministry for Primary Industries
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25 The Terrace
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Wellington 6140

or emailed to nmd@mpi.govt.nz

RELEASE OF SUBMISSIONS

MPI expects to release all submissions. If you have specific reasons for wanting to have your submission or personal details withheld, please set out your reasons in the submission. All submissions are also subject to the Official Information Act 1982 and can be released (along with the personal details of the submitter) under the Act. MPI will consider those reasons when making any assessment under the Act.

1 Executive Summary

Regulatory monitoring requirements for the verification of microbiological controls on broiler chickens at the end of primary processing have been included in the Animal Products (National Microbiological Database Specifications) Notice (National Microbiological Database or NMD) since mid-2001 for *Salmonella* and from 2008 for *Campylobacter*.

The current requirements for the *Salmonella* Performance Standard (SPS) are based on the 1996 United States Department of Agriculture Food Safety and Inspection Service (USDA FSIS) requirements for *Salmonella* in carcasses of young chickens.

The poultry NMD programme (MPI, 2015a) applies to boiler chickens which are defined as:

> "broiler chicken means a male or female chicken kept primarily for meat production, but does not include poussins."

This definition captures the vast majority of the chickens consumed as meat within New Zealand, i.e. broiler chickens and head-on feet-on chickens. However, there are other types of chickens that are processed for human consumption which are not included with this definition. These types of birds include poussin, small breeds of chickens, breeder chickens and spent laying hens (or end-of-lays). Processors of these minor chicken classes have previously argued that these types of birds present a lower risk to cases of human campylobacteriosis and salmonellosis because there are smaller volumes processed and that the types of *Salmonella* and/or *Campylobacter* found may not cause illness in humans. However, there is limited current data to support either of these hypotheses.

Poultry premises may sample and test the other chickens for *Campylobacter* and *Salmonella*, however this information is not reported through the NMD. As a result there is a lack of consistency in the application of the poultry NMD programme for chickens and for those processed for human consumption. This creates a gap in the current knowledge of prevalence and concentration of *Salmonella* and *Campylobacter* in all chickens.

MPI's preferred options are to:

1. Expand the scope of the poultry NMD monitoring programme to include all chickens that are processed for human consumption

2. Apply the requirements of the *Campylobacter* Performance Target and *Salmonella* Performance Standard to targeted chickens; broilers, poussin/spring chickens small breeds, capons, etc. All chickens with the exception of breeder and end-of-lay chickens would be included.

3. Include breeder chickens and end-of lay hens in the poultry NMD programme for an estimated period between 12 and 24 months to provide data on the current status of *Salmonella* and *Campylobacter* contamination in these classes of birds. The programmes will be reviewed after 12 months and sampling will continue until a sufficient number of samples have been gathered to determine the associated risk and to inform any risk management options. One of the options may be to include breeder and end-of-lays in the programme permanently and to establish microbiological limits for *Salmonella* and *Campylobacter*.

2 Introduction

The Ministry for Primary Industries (MPI) is reviewing the Animal Products (National Microbiological Database Specifications) Notice 2015 (MPI, 2015a). As part of the review process MPI is proposing to separate the specific requirements in the Schedule for poultry from those of red meat and ratites detailed. As part of this process, MPI is taking the opportunity to review, revise and simplify the current requirements and application of the poultry NMD programme.

Information on sources of *Campylobacter* in the food chain requires continual updating and will be necessary to inform MPI's *Campylobacter* Risk Management Strategy 2015-20 (under development). While data are widely available for whole broiler carcasses, data on the prevalence and numbers of *Campylobacter spp*. and *Salmonella spp*. on spent breeder and end-of-lay carcasses, at the end of primary processing, are limited in New Zealand. There is no National Microbiological Database (NMD) programme for these poultry classes from which contamination data could be extracted, collated and analysed.

2.1 ISSUE AND CONTEXT

Regulatory monitoring requirements for the verification of microbiological controls on broiler chickens at the end of primary processing have been included in the Animal Products (National Microbiological Database Specifications) Notice (National Microbiological Database or NMD) since mid-2001 for *Salmonella* and since 2008 for *Campylobacter*. The *Salmonella* Performance Standard (SPS) requirements are based on the 1996 United States Department of Agriculture Food Safety and Inspection Service (USDA FSIS) requirements for *Salmonella* in carcasses of young chickens.

In the NMD programme young chickens are referred to as broiler chickens and poussin are excluded. A broiler chicken is typically defined based on the age of the bird at the point of primary processing, this is a range of values and differs between countries, consumer preferences, breeds, weights and husbandry practices. For example, free-range chickens take longer to reach the required size than those fully housed during growing. There is no common definition for what constitutes a broiler chicken in New Zealand, for either the lower or upper age range, as a result there may be a lack of clarity as to what birds should be included in the NMD programme and the contribution of the other classes of chicken to cases of human salmonellosis and campylobacteriosis. This discussion document addresses the proposal to include all chickens within processed for meat within the scope of the NMD programme. The document also considers the *Campylobacter* Performance Target (CPT) and the *Salmonella* Performance Standard (SPS) should apply to all or only some classes of chickens.

This options paper forms a package of documents that address proposals from MPI to amend the poultry NMD programme. Other documents cover the introduction of ducks and turkeys to the poultry NMD, a review of the SPS for chickens, and the outcome following a review of the *Campylobacter* Performance Target in May 2015 (MPI, 2015b).

2.1.1 Classes of chicken

There are number of different classes of chicken that are commercially slaughtered for human consumption, the differences are typically based on the age or weight of the bird. The classes under consideration include:

- Broiler chicken means a chicken that is bred and specifically raised for meat.
- Head-on, feet-on means a chicken that retains its head and feet at the end of primary processing
- Poussin (also known as a coquelet a young chicken less than 28 days old at slaughter and not weighing more than 750g
- Spring chicken means a chicken weighing no more than 850g and may be classed as a poussin
- Small chicken breeds such as Silkie (or Silky) or Bantam.
- Capon is a castrated male chicken that is raised for meat. There is no commercial production of capons in New Zealand
- Breeder birds means the spent parent and grandparent birds from poultry farms that produce fertile eggs for the broiler poultry companies' hatcheries for chick production or breeder laying operations
- End-of-lay birds means a spent hens culled from layer flocks at egg production farms

Most commercial broilers reach slaughter-weight at between five to seven weeks of age, although slower growing breeds reach slaughter-weight at approximately 14 weeks of age. Poultry that are processed in a different way to other chickens, e.g. those subject to halal or kosher slaughter are not considered to be a different class of chicken, similarly those chickens that are raised in different ways, intensive or extensive farming practise, should be included in the NMD programme.

2.2 RISK MANAGEMENT QUESTIONS

MPI is seeking to address the following risk management questions in this options paper:

1. To determine whether all young chickens slaughtered for human consumption should be included in the NMD programme, and if the results should count towards the broiler chicken class or if they should be placed in a category of their own?
2. To determine what the prevalence and concentration (where appropriate) of *Salmonella* and *Campylobacter* is at the end of primary processing for end-of-lays and breeder chickens intended for human consumption?
3. To determine whether there is a change in risk profile between the different classes of chickens processed for meat?

4. To determine whether it is necessary to apply the *Campylobacter* Performance Target and/or *Salmonella* Performance Standard to all classes of chickens slaughtered for human consumption?

5. To provide information about an appropriate monitoring programme for these birds and the effectiveness of current control measures?

3 Background

3.1 THE NEW ZEALAND POULTRY INDUSTRY

There are sixteen registered risk management programmes (RMPs) for the primary processing of broiler chickens for human consumption. This represents 11 different poultry companies of which eight are members of PIANZ (as at 6th October 2015). The larger companies tend to be vertically integrated and manage all aspects of poultry meat production within their separate companies from feed production to breeding, primary production, primary processing and (secondary and further) processing of value-added products (King *et al*., 2011).

To help inform the review of the poultry NMD programme, MPI prepared a questionnaire to gather descriptive information about the poultry industry and in particular husbandry practices, numbers and species of birds processed and additional microbiological testing conducted. Ten primary processors responded to the questionnaire covering chickens, ducks, turkeys and/or other types of poultry. Of the RMP operators that responded, four premises process breeder chickens and another operator processes end-of-lay chickens (Note, the questionnaire did not ask whether these chickens were processed for human or animal consumption).

3.1.1 Breeder and End-of-Lay

The MPI website lists 12 RMPs that include the processing of chickens for animal consumption (pet food) within the scope of their registration; 5 process layer hens (different operators to those who responded to the questionnaire). In total there are 10 RMP operators that slaughter and dressing layer chickens within the scope of the RMP recognition for either human and/or animal consumption. There is no separate category to select those RMP operators that process breeder chickens.

3.1.2 Poussin

The MPI website lists two operators who have registered RMPs for the slaughter and dressing of poussin. Neither of these operators is currently participating in the NMD programme.

3.2 OTHER CHICKENS NOT COVERED BY THE NMD

Consultation Question

As part of this consultation, MPI is requesting information from the poultry industry to help to determine the different classes/types of chickens (*Gallus gallus*) that are grown and raised in New Zealand but do not currently participate in the NMD poultry programme.

Question: If MPI changed the definition of chicken with the NMD to "Chicken means all birds of the species *Gallus gallus* that are processed for human consumption" what other types of chickens would you sample and test as part of the NMD poultry programme?

In addition, MPI is interested in the number of each class type processed per annum, the frequency of primary processing (whether it is a special run or if they are processed with other chicken classes, whether they are processed for human and/or animal consumption, the proportion of human consumption to animal consumption and the intended end-products of other classes of chickens (not broilers)?

Class of chicken (poussin, silkie, broiler, end-of-lay or breeder), etc	Number processed per annum	Frequency of processing	Processed as a special run or with other chicken classes	Human consumption and/or Animal Consumption and proportion of split	Intended end product
Example – breeder	*500,000*	*Once per month*	*Special run*	*Human consumption*	*MSM, retorted products*

4 Current data

4.1 NEW ZEALAND RESEARCH AND SURVEYS

The Risk Profiles *Salmonella* in Poultry (King *et al*., 2011) and *Campylobacter* in Poultry (Lake and Cressey, 2013) provide a summary of the research and surveys undertaken in New Zealand to determine the prevalence of *Salmonella* and *Campylobacter* in poultry products respectively. MPI[3], (2015) summarises the details from at least seven surveys of poultry products for *Salmonella* in New Zealand. The survey results together with the low percentage of *Salmonella* detected in the NMD provide a picture of the prevalence of *Salmonella* throughout the poultry supply chain.

4.1.1 Breeders and End-of-Lays

Other studies have provided a snap shot of the prevalence of *Salmonella* and *Campylobacter* in breeder, end-of-lay and broiler flocks. A project examined the combined contents of 10 caeca samples obtained from each flock of slaughtered birds, using the NMD protocol. The *Campylobacter spp*. and *Salmonella* spp. status of each flock was determined by performing a presence/absence determination of these pathogens in the combined caecal contents. In addition, pathogen levels were enumerated in each carcass rinsate in a set of five from each flock, in accordance with the NMD protocol. The results of the survey by Wong and Hudson (2006) indicate a higher prevalence of *Salmonella* (24.5%) than that recorded in the NMD programme. *Salmonella* was detected in 3.5% and 2.1% of broiler chicken carcasses in 2005 and 2006 respectively.

Caecal samples were tested from 16 flocks of breeder birds, with 13 flocks (81.3%) positive for *Campylobacter spp*. and three flocks negative for *Campylobacter spp*. (Wong and Chung, 2010). *Campylobacter spp*. were isolated from the caecal contents of end-of-lay birds in 11 out of 13 (84.6%) flocks screened in the same study.

Table 1: Summary of Poultry Surveys Conducted During Processing in New Zealand

Year	Location	Product	Number of samples	Number of *Salmonella* positive samples	*Campylobacter spp*. results	Reference
~2009	End of primary processing	Breeder	16 breeder flocks	0/16 breeder flocks (caecal contents and carcass rinse)	13/16 breeder flocks (81.3%) 10.5% *Campylobacter* ≥ 2.48 Log_{10} CFU $carcass^{-1}$	Wong and Chung, (2010)
		End-of-lay chicken carcasses	13 end-of-lay flocks	4/13 (31%) end-of-lay flocks (caecal contents and carcass rinse)	11/13 (84.6%) end-of-lay flocks 62% carcass rinsates *Campylobacter*	

Year	Location	Product	Number of samples	Number of *Salmonella* positive samples	*Campylobacter spp*. results	Reference
					non-detected	
2005 - 2006	Four commercial processing plants (two in the South Island and two in the North Island)	Broiler chickens immediately post-stunning and ex-sanguination, but prior to scalding	200	1 caecal swab 49 (24.5%) whole carcase rinse		Wong and Hudson, (2006).

The results from 2009 study (Wong and Chung, 2010) show a high prevalence of *Campylobacter* spp. in the caecal contents of spent breeder and end-of-lay poultry flocks, but the cell concentrations in the carcass rinsates after primary processing are low, usually below the limit of detection of the spread plate method. Occasionally carcasses may contain higher counts after primary processing. *Salmonella*. was not isolated from breeder carcass rinsates after slaughter and post primary processing, but from the caecal samples and rinsates of end-of-lay flocks. These results provide *Campylobacter* spp. and *Salmonella* spp. data from spent breeder and end-of-lay poultry which could be used in quantitative risk assessments of these pathogens in the food chain and for ongoing attribution studies.

Another study of poultry meat samples sourced from suppliers (in a ready for sale form) or from supermarkets in the Manawatu between December 2008 and May 2009 determined the prevalence of presumptive *Campylobacter spp*. in end-of-lay chickens, turkeys and ducks (French *et al.*, 2009). The method involved enrichment and the *Campylobacter* prevalence reported:

- End-of-lay carcasses (48/48, 100%)
- Duck (73/75, 97%)
- Turkey (52/63, 83%)

The median number of *Campylobacter spp*. isolated from end-of-lay meat breeders was 2.1 logs. The study also compared the MLST genotypes found in human cases and poultry sources. The *Campylobacter spp*. isolates from broiler chicken sources are closely related to human isolates. The majority of isolates from ducks and turkeys formed distinct clusters that are not associated with human disease. The end-of-lay meat breeder isolates belong to a small number of serotypes that group more closely with the chicken isolates than the duck and turkey isolates.

4.1.2 Broiler chickens

The poultry NMD programme currently includes chickens produced primarily for meat, or broiler chickens. Broiler chickens are subject to the targets within the NMD poultry programme, the CPT and SPS (MPI, 2015a). There has been a decrease of the percentage of broiler chickens with counts greater than the Enumeration Limit 3.78 Log_{10} cfu *Campylobacter* spp. and also the percentage of carcass rinsate samples that exceed the Detection Limit 2.30 Log_{10} cfu (MPI, 2015a).

4.1.3 Other classes of young chickens

There is a lack of data on the current status of *Campylobacter* and *Salmonella* in other classes of young chicken in New Zealand, for example poussin and small breeds of chickens. Poussins currently do not need to comply with the requirements of the NMD and have not been included in recent surveys.

4.1.4 Summary

Possible explanations for the difference between the results recorded between broiler chickens and breeder/end-of-lays include the age of the birds at slaughter, the difference in biosecurity on-farm and whether whole sheds of birds are slaughtered at the same time.

Despite the considerable improvements that have been put in place by the New Zealand poultry industry since the introduction of the CPT, chicken meat remains an important source of human foodborne campylobacteriosis (MPI, 2015b and Marshall, *et al*., 2015).

5 Effect on public health

5.1 POULTRY MEAT AS A SOURCE OF HUMAN FOODBORNE ILLNESS

The two main foodborne pathogens associated with poultry meat are *Campylobacter spp*. and *Salmonella enterica* subspp. Human cases of campylobacteriosis and salmonellosis are associated with a number of different sources, foodborne and non-foodborne.

5.1.1 Human salmonellosis

An MPI-commissioned expert consultation (Cressey, 2012) estimated that 62.1% (95th percentile credible interval: 35.2% to 86.4%) of all human salmonellosis cases were food-related. It was further estimated that approximately 19% of foodborne transmission acquired domestically was due to transmission via poultry.

An attribution study (French et al, 2013) collected a total of 939 non-typhoidal *Salmonella* enterica isolates from separate human samples from May 2011 to April 2012. Attribution models estimated that 16% (95% CI 1-44%) of human salmonellosis cases were attributable to *Salmonella* strains previously associated with poultry sources. However this study only investigated the source rather than the pathway of infection and did not investigate the role that the consumption of poultry meat played in the infection of humans with foodborne salmonellosis.

5.1.2 Human campylobacteriosis

An unacceptably-high rate of foodborne campylobacteriosis was seen in New Zealand in 2006. Attribution studies estimated that more than 50% of human cases were attributed to the consumption of poultry meat (MPI, 2015b). This led to the implementation of a risk management strategy for *Campylobacter* in broiler chicken meat with a target of 50% reduction in New Zealand human foodborne cases of campylobacteriosis over a five year period, 2008 -2012. Control measures were applied by the poultry industry to primary production and processing, and the target was achieved over this period and this level of public health protection has been maintained throughout 2012-2014.

The results of NMD testing show that the New Zealand poultry industry has made significant improvements in control of *Campylobacter* since the programme began. Trend analysis of the broiler chicken carcass rinsate results and human cases have shown a strong association between the introduction of the CPT and a significant reduction in human foodborne campylobacteriosis in New Zealand.

Recently completed *Campylobacter* attribution studies (French, *et al*. 2014 and Marshall, et al., 2015) show that poultry is still a major contributor to foodborne campylobacteriosis. Data collected consistently over time has provided a basis for evaluating the impact of poultry-focused interventions: before implementation of interventions, over 70% of human cases were attributable to poultry, and in follow-up years 2008-2010 this estimate had declined to less than 50%. MPI therefore needs to ensure that the *Campylobacter* levels on broiler chicken meat continue to decrease (MPI, 2015b).

6 Option identification and assessment

The options identified and assessed are those that MPI believes will aid in improving the clarity, consistency and to harmonise the application of the poultry NMD programme. The options consider whether all chickens processed for human consumption should be included in the poultry NMD programme, and if so whether the requirements of the *Salmonella* Performance Standard and *Campylobacter* Performance Target should apply.

6.1 INCLUSION OF ALL CHICKENS PROCESSED FOR HUMAN CONSUMPTION IN THE POULTRY NMD PROGRAMME

MPI has identified the following options with respect to the proposal to include all chickens within the scope of the poultry NMD programme:

- Option 1 Maintain the status quo – the NMD requirements will only apply to broiler chickens
- Option 2 Introduce a requirement for *Salmonella* and *Campylobacter* testing for all chickens in the NMD

6.1.1 Option 1 = Maintain the status quo

Under this option there would be no change and that only broiler chickens would be included in the NMD programme for the testing of *Salmonella* and *Campylobacter* and application of the SPS and CPT:

Pros:

- Maintaining the current status quo will not have any effect on poultry premises and will not result in any costs brought about by any additional sampling and testing
- Industry knows what it is doing and would not need to change

Cons:

- There may not be any reduction in the notification of the human campylobacteriosis and salmonellosis cases
- There would remain a lack of data about the prevalence and concentration of *Salmonella* and *Campylobacter* in non-broiler classes of chickens
- There would continue to be a lack of clarity about the definition of a broiler chicken and whether the requirements of the NMD programme apply

6.1.2 Option 2 = Introduce a requirement for *Salmonella* and *Campylobacter* testing for all chickens in the NMD

This option requires that all chickens are subject to the same testing requirements in the NMD programme for *Salmonella* and *Campylobacte*r. Note – this option does not consider whether the requirements of the *Salmonella* Performance Standard and *Campylobacter* Performance Target should apply to all, some or none of the chicken classes.

Pros:

- There would be a consistent approach for all chickens processed for human consumption within the NMD
- This may act as an incentive for the industry to improve their slaughter and dressing processes for all chickens
- Would provide information on the current status of *Salmonella* and *Campylobacter* prevalence and concentration for all chickens

Cons:

- A decrease in the number of chicken derived cases of campylobacteriosis and salmonellosis may not eventuate
- Increased sampling and testing costs for operators processing multiple classes of chickens
- There are a small number of RMP operators for whom the requirements of the poultry NMD programme has not applied to previously, i.e. those primary processing poussin, end-of-lays or breeder flocks. These operators would incur additional NMD programme set up costs associated with familiarisation with the database and costs associated with the training of a NMD Controller, Certified Trainers and Approved Samplers, in addition to sampling and testing costs.

6.2 OPTIONS FOR THE APPLICATION OF THE *SALMONELLA* PERFORMANCE STANDARD AND *CAMPYLOBACTER* PERFORMANCE TARGET TO CHICKENS IN THE POULTRY NMD PROGRAMME

These options consider whether the *Salmonella* Performance Standard and *Campylobacter* Performance Target should apply to all or some classes of chickens processed for human consumption in the NMD programme.

The following options have been considered

Option 3 Maintain the Status Quo

Option 4 Requirements of the *Salmonella* Performance Standard and *Campylobacter* Performance Target apply to each class of chickens

6.2.1 Option 3 = Maintain the Status Quo

In this option, the *Salmonella* Performance Standard and *Campylobacter* Performance Target would continue to only apply to broiler chickens processed for human consumption.

Pros:

- No additional costs for the poultry industry incurred through any additional sampling and testing

Cons:

- There would continue to be a lack of clarity about the definition of a broiler chicken and whether the requirements of the NMD programme apply
- There would continue to be a lack of data on the current status of *Salmonella* and *Campylobacter* prevalence and concentration in chickens processed for human consumption
- Premises may not be driven to look for improvements in their processes

6.2.2 Option 4 = Apply the requirements of the *Salmonella* Performance Standard and *Campylobacter* Performance Target to each class of chickens

This option requires that the *Salmonella* Performance Standard and *Campylobacter* Performance Target apply to each class of chickens processed for human consumption. The application of the SPS and CPT has been considered for each individual class of chickens however the option consideration considers the option in groups

6.2.2.1 Other meat chickens:

Option 4a = Introduce a requirement for the SPS and CPT to apply to poussin and spring chickens

Option 4b = Introduce a requirement for the SPS and CPT to apply small chicken breeds

Pros:

- This approach would provide MPI and industry with a complete current *Salmonella* and *Campylobacter* status of all classes of chickens except end-of-lay and breeder
- This approach would ensure consistency of approach across all classes of young chickens processed for meat
- This approach may act as an incentive for the industry to improve their slaughter and dressing processes for all chickens

Cons:

- For any operator that is not currently sampling the other classes of chickens there will be additional costs associated with sampling and testing

- Some of the processors of the chickens with a smaller market share have argued that these classes of chickens have a minor contribution to human foodborne illness.

- These classes of chickens only have a small proportion of the market share and there may not be any decrease in the number of cases of human campylobacteriosis

6.2.2.2 Chickens not produced primarily for meat:

Option 4c – Introduce a requirement for the SPS and CPT to apply to breeders (of meat chickens and egg laying flocks)

Option 4d = Introduce a requirement for the SPS and CPT to apply to end-of-lay chickens

Pros:

- This might be an additional incentive for poultry premises to improve the hygiene and operation of their process

- This approach would provide information on the current status of *Salmonella* and *Campylobacter* contamination

- All classes of chickens processed for meat would be covered by the poultry NMD programme

- Would address a current data gap and would inform any future risk management measures

Cons:

- There is a cost associated with the sampling and testing of breeders and end-of-lays

- Breeder and end-of-lay chickens may not enter the food supply chain as fresh poultry meat; it may be cooked or fully retorted. However, this may equally be used for minced or mechanically-separated meat which other studies have shown is likely to have a higher rate of *Salmonella* and *Campylobacter* contamination

- This might not result in a decrease in the number of human cases of foodborne illness associated with the consumption of chicken meat

- These only have a small proportion of the market share and there may not be any decrease in the number of cases of human campylobacteriosis

6.3 MPI'S PREFERRED APPROACHES

6.3.1 Inclusion of all chickens processed for human consumption in the poultry NMD programme

MPI's preferred approach is to expand the scope of the poultry NMD microbiological monitoring programme to include all chickens that are processed for human consumption (Option 2). All chickens processed would be required to be sampled and tested for *Salmonella* and *Campylobacter* according to

the requirements in the NMD poultry programme. This option would remove any ambiguity ensure consistency in the application of the poultry NMD programme requirements for chickens.

6.3.2 Application of the *Salmonella* Performance Standard and *Campylobacter* Performance Target to chickens in the poultry NMD programme

MPI's preferred approach is apply the requirements of the *Campylobacter* Performance Target and *Salmonella* Performance Standard should apply to all chickens with the exception of breeder and end-of-lays. The targeted chickens include broilers, poussin/spring chickens, small breeds, etc. (Options 4a and 4b).

It is not proposed to apply the *Salmonella* Performance Standard or the *Campylobacter* Performance Target to either breeder or end-of-lay chickens processed for human consumption (Option 3) at the present time.

7 Incorporation of all chickens into the NMD

7.1 AMENDMENT OF THE NMD SPECIFICATION

7.1.1 Definition

To include all chickens within the NMD programme it is proposed that the definition of chicken is amended from:

> "broiler chicken means a male or female chicken kept primarily for meat production, but does not include poussins."

To:

> "chicken means all *Gallus gallus* processed for human consumption"

7.1.2 Young chickens

The requirements of the CPT and SPS will apply to young chickens; broiler, poussin/spring chickens, small breeds, etc. The *Salmonella* and *Campylobacter* contamination profiles in these birds are unlikely to be different between each class of young chickens given their age. MPI did consider whether the CPT and SPS should apply to each individual class of chickens however it was decided that this would be an increase in costs for all operators. However RMP Operators would be required to record the class of chicken sampled in the NMD database.

7.1.3 Breeders and End-of-Lay Chickens

It is proposed that breeder and end-of-Lay chickens would be included in the interim within the NMD programme for a period estimated to not exceed 24 months in order to collect data to inform the current status of *Salmonella* and *Campylobacter* contamination. The results from the first 12 months will be reviewed to help to determine how many more samples should be collected and that this programme would not exceed 24 months. The data will help to determine whether there is a risk associated with end-of-Lays and breeder chickens, and if there is a risk then to inform whether and how it should be managed, e.g. continued inclusion in the NMD programme.

7.2 DATE OF COMMENCEMENT

7.2.1 Chickens

The majority of operators that process targeted chickens (except breeder and end-of-lay) will already apply the requirements of the NMD poultry programme. However there may be a small number of the RMP operators that not currently participate as they only slaughter poussin, end-of-Lays or breeder chickens. Therefore it is proposed that there is a staggered commencement in the Notice and that RMP operators not currently included in the NMD programme will be required to comply with the requirements from 4 April 2016.

For operators processing poussin and small breeds of chicken, the NMD programme would commence on the first Monday in April 2016 where they are not currently participating. This would enable the operator to register with the NMD Coordinator, gain access to the database, appoint an NMD controller, contract a laboratory and attend any MPI run training courses for NMD Controllers, and either a Certified Trainer or Approved Samplers. RMP operators may begin to undertake sampling and testing of ducks and turkeys and report the results to the NMD prior to the date of commencement.

7.2.2 End-of Lays and Breeder Chickens

It is proposed that the requirements for end-of-Lays and breeder Chickens within the poultry NMD programme will commence after a 4 month transition period. MPI is aware that there may be a small number of primary processors of chickens who may not currently participate in the NMD poultry programme. All operators processing end-of-Lays and breeder chickens should commence sampling from the same day to ensure that a consistent data set is collected.

The NMD programme for the monitoring of end-of-lays and breeder chickens would commence on the first Monday in April 2016. This would enable RMP operators who are not currently participating in the NMD monitoring programme to register with the NMD Coordinator, gain access to the database, appoint an NMD controller, contract a laboratory and attend any MPI run training courses for NMD Controllers, and either a Certified Trainer or Approved Samplers. RMP operators may begin to undertake sampling and testing of End-of-Lays and Breeder chickens and report the results to the NMD prior to the date of commencement.

7.3 SAMPLING PROGRAMME

7.3.1 Chickens (except breeder and end-of-lay)

MPI proposes that all chickens (except breeder and end-of-lay) should form a single sample set for the purposes of random sampling and application of the SPS and CPT. This would ensure that each class of young chicken has the same probability of being randomly selected for sampling on any day processed.

7.3.2 End-of-Lay and Breeder Chickens

MPI proposes that breeder and end-of-lay chickens should form discrete sample sets and should be sampled and reported independently of each other and the other young chicken results. In other words, that where an operator is processing both end-of-lays and breeder chickens that these should be subject to the independent random sampling and testing requirements as for all chickens.

7.4 SAMPLING FREQUENCY

MPI is proposing that the sampling frequency for all chickens remain aligned with the current sampling frequency for broiler chickens in the NMD Poultry Programme (MPI, 2015a).

- Standard throughput premises: 3 carcasses from each species shall be sampled on each processing day –
    - 3 carcasses shall be analysed for *Campylobacter*;

    - 1 carcass shall be analysed for *Salmonella*
- Very low throughput premises: 3 carcasses from each species shall be sampled each processing week –
    - 3 carcasses shall be analysed for *Campylobacter*;
    - 1 carcass shall be analysed for *Salmonella*.

7.5 TECHNOLOGICAL AMENDMENTS

A technological amendment will also be required to include the additional classes of chickens into the NMD. A further amendment will be required to adjust the calculations for the *Salmonella* Performance Standard and *Campylobacter* Performance Target for all chickens (except breeder and end-of-lay).

7.6 COSTS

It is expected that chicken processors will replace any existing *Salmonella* and *Campylobacter* sampling programmes with those specified in the NMD programme. MPI is aware that poussin, end-of-lays and breeders may be processed in the same premises as broiler chickens currently, and that the inclusion of the other chicken classes in the NMD programme will add the cost of testing additional species to their business.

However a small number of RMP operators processing poultry (end-of-lays, breeder and/or poussin) for human consumption are not currently participating in the NMD programme and will need to comply with all the requirements of setting up. These costs are detailed in the following sections. The set up costs are variable depending on if they are already doing routine laboratory testing of product.

7.6.1 Management and technological costs

7.6.1.1 NMD set-up

A premises will need to complete the administrative set-up associated with the database, and have MPI Verification Services review and confirm participation. This will come at an hourly cost of $165/hour as per the Animal Products (Fees, Charges, and Levies) Amendment Regulations 2015 (MPI, 2015c).

The NMD is supplied via the internet for no fee. If the operator does not have access to the internet or to a computer there would be an initial capital outlay and ongoing monthly internet charges, but this would be expected to be covered under general business operating expenses. No additional software is required as the NMD web portal performs all statistics and calculations.

There are costs for the operator associated with setting up management protocols to review NMD data, including management meetings, staff training, and ensuring time is made available for their NMD controller to become familiar with the NMD web portal and to go on-line to the NMD web portal each processing day to observe results and determine if corrective actions are required.

7.6.2 Training

7.6.2.1 Certified Trainer

Any processor of chickens that is new to the NMD programme will need to ensure staff are competent to take samples. To do this, staff that are sampling carcasses for the NMD must be either a NMD certified trainer or an approved sampler. There is a cost for the operator associated with training samplers. Whilst MPI currently offers Certified Trainer courses at no charge to the RMP operator there is a cost incurred to the operator through the loss of an employee for the day, loss of productivity plus transport/travel and any necessary accommodation costs for getting that employee to the course ~ $500 travel: accommodation, plus the lost productivity cost. However this does deliver a benefit to the operator in that there is an increase in knowledge gain for them.

Alternatively approved samplers may be trained by a certified trainer from another poultry processor, or a laboratory where the cost would be an hourly figure (decided by the contractor) for half a day and transport.

7.6.2.2 NMD controller

A premises will need to nominate an NMD controller. There is a cost associated with training the NMD Controller. Whilst MPI currently provides NMD Controller courses for free there is a cost for the operator associated with the loss of the employee for the day, the loss of productivity plus costs for travel and accommodation. There would also be a further cost to the operator associated with providing the employee with time to become familiar with the NMD and the programme. There would ongoing costs associated with analysing data and meeting the monitoring requirements of their RMP.

7.6.3 Sampling and testing

If the operator is not already doing routine laboratory testing they will need to engage with a laboratory that is either a MPI Laboratory Accredited Scheme (LAS) approved or Recognised Laboratory Programme (RLP) recognised for NMD testing. The cost of the testing is 3 samples per sampling day for *Campylobacter*, plus one *Salmonella* which is estimated to be around $200 per set of tests plus the costs to courier the samples to the laboratory.

If the *Salmonella* test comes back with a positive result, the processor will need to pay an additional $50 for the *Salmonella* to be molecularly typed.

7.6.4 Other costs

7.6.4.1 General

Any other costs associated such as capital expenditure, maintenance costs, costs of hiring advice to improve their processes to meet standards is a cost associated with maintaining an RMP, and not directly a NMD programme cost.

7.6.4.2 Operators processing chickens (except breeder and end-of-lay)

For operators processing chickens (except breeder and end-of-lay) for human consumption there will be an additional cost associated with complying with the actions required if the results fail either the *Salmonella* Performance Standard and/or the *Campylobacter* Performance Target (MPI, 2015a).

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