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# **Broiler Growing Biosecurity Manual**

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## 1.1 INTRODUCTION

This Manual is the agreed standard between New Zealand broiler growing companies and the New Zealand Food Safety Authority. It describes the recommended minimum standards to be used in New Zealand's broiler production systems and is aimed at ensuring that products meet food safety and suitability requirements and consumer needs. These standards can be built on to include recommended best practice.

### Legal Status

This document is intended as a guide for New Zealand broiler growing companies, except where specific references are made to mandatory requirements.

### **Acknowledgement**

While this document applies to all New Zealand broiler growing companies, the Poultry Industry Association of New Zealand (PIANZ) has been instrumental in constructing this document for the poultry industry. PIANZ will be the key co-ordinator of this Manual and responsible for its maintenance, in consultation with the New Zealand Food Safety Authority and all grower representatives.

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## 1.2 REVISIONS OF THIS MANUAL

The Manual will be reviewed at least annually. However, New Zealand broiler growing companies, PIANZ and/or NZFSA may request review of any part of the Manual at an earlier frequency if the need arises, and with due consultation with all parties.

Agreed changes, in consultation with grower representatives, NZFSA and PIANZ, will be issued from time to time. Broiler companies will be required to delete redundant sections from the manual and replace them with new sections as advised.

Suggestions for improvement to the manual are welcome and should be forwarded to PIANZ in writing. PIANZ will ensure that the appropriate people are consulted before any changes are made. PIANZ can be contacted at:

The Poultry Industry Association of New Zealand (Inc).  
96D Carlton Gore Road  
Newmarket  
AUCKLAND  
Phone: (09) 520-4300  
Fax: (09) 520 1553  
Email: [info@pianz.org.nz](mailto:info@pianz.org.nz)

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### **1.3 DISTRIBUTION OF MANUAL UPDATES TO COMPANIES**

Due to logistical issues when dealing with companies and:

- a) distributing manual updates
- b) keeping manuals up to date and in an orderly manner
- c) not creating excess travel and postage,

the manual will be distributed in its entirety annually to all holders of the Manual. This may be by web-link, e-mail or by physical means.

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## 1.4 PURPOSE

This manual is intended to be used as a guide to the recommended minimum standards that company biosecurity manuals must contain. Those sections indicated in *italics* should be incorporated into company manuals.

The recommended minimum standards in this manual should be included in the company standard operating procedures.

Where some suggested programmes need significant detail (e.g. catching, clean-out, water management, vermin control) the program should contain:

- purpose and scope (reason for procedure, range of application)
- authorities and responsibilities (responsibilities for monitoring, corrective action and internal verification)
- materials and equipment (specific tools required to carry out a procedure)
- training
- actual procedure:
  - o control measures
  - o monitoring of control measures to ensure they are effective (what, how, when, where)
  - o corrective action taken when control measures go wrong (what, how, where, for restoration of control, prevention of recurrence)
  - o internal verification (what, how, when, where) covering review/audit calibration and further micro testing

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## **1.5 SCOPE**

This manual will cover all the elements of on-farm biosecurity as it impacts on food safety, suitability and animal health, including areas of responsibility of the growers, the processor, the catchers, the cleaners, and other associated personnel.

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## **1.6 DEFINITIONS**

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

*Clean litter: wood shavings or other suitable material placed on the floor of a poultry shed prior to chick entry.*

*Dirty litter: wood shavings or other suitable material placed on the floor of a poultry shed, soiled with a proportion of faecal matter.*

*Farm: the boundaries of the property on which the poultry site is located.*

*End pads: a defined sealed area external to the shed, used for the loading and unloading of birds and materials.*

*Site: the area within a farm specifically designated for poultry farming.*

*Whole health flock scheme: in relation to a flock of farmed birds, means a documented programme of health surveillance and includes, where applicable:*

- a) disease control or eradication, and*
- b) the management of agricultural compounds and veterinary medicines according to any general or specific conditions of use*

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## **1.7 MANDATORY REQUIREMENTS**

*Below is a summary of the legislation under the Animal Products Act 1999 that is most applicable to poultry industry broiler growers. Web links for documents current at the date of the issue of this Code are given. These may become out of date and the summary is not exhaustive. To access all current legislation, go to the general link:*

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

### **Animal Products Act 1999**

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

### **Animal Products Regulations 2000**

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

### **Animal Products (Specifications for Products Intended For Human Consumption) Notice 2004**

*The particular sections of relevance are Human Consumption Specifications 40, 41, 70 and 71, as described below.*

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

### **Human Consumption Specification 40: Supplier Statements for Farmed Animals**

*Suppliers of poultry must provide a completed and signed supplier statement to the primary processor on presentation of the animal material for primary processing.*

*Where a processor is part of a supplier guarantee programme, no supplier statement is required for poultry.*

*The supplier must complete the statement to the best of their knowledge, and using any supplier statements supplied by previous persons in control of the animal material.*

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*The supplier may supply the supplier statement to the processor by electronic transmission.*

*A copy of the supplier statement must be kept by the supplier for a period of one year after the supply of the animals is completed, and it must be made available for audit.*

*The supplier must keep any records and other information used to complete the supplier statement while the animals are under the control of that person. These records must be kept for one year after the animal movement is completed, and must be made available for audit.*

*If a supplier ceases to be engaged or employed at a premises or property, the supplier statement records must be kept at the premises or property to which the statement relates.*

### **Human Consumption Specification 41: Supply of Farmed Poultry**

*Suppliers of farmed poultry must ensure that all poultry intended for primary processing are subject to an effective Whole Health Flock Scheme (that includes the control of veterinary medicines, feed contaminants and environmental contaminants) to ensure that only birds that are suitable for processing are supplied to the primary processor. See*

*<http://www.nzfsa.govt.nz/animalproducts/publications/consultation/drafts/rmp/rmp-draft-broilers.pdf>*

### **Human Consumption Specification 71: Ante-Mortem Examination**

*The processing plant is required to carry out ante-mortem examination on each consignment of birds prior to slaughter. The requirements are given below. Farmers will get feedback from the premises if the number of birds that are sick, dying, dead or unsuitable for processing are higher than the company limits.*

### **Animal Products (Specifications for the Ante-Mortem and Post-Mortem Examination of Poultry Intended for Human or Animal Consumption)**

#### **Notice 2005**

*The processing plant is required to carry out post-mortem examination of the birds. The requirements can be viewed at:*

*<http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/poultry/poultry-specs.pdf>*

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***Animal Products (National Microbiological Database Specifications)***

***Notice 2007***

*The processing plant is required to carry out sampling at processing for Campylobacter and Salmonella. This will assist in providing information back to broiler growers on the Campylobacter and Salmonella status of their flocks. See*

*[http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/nmd/Animal\\_Products\\_\(NMD\\_Specifications\)\\_Notice\\_2007\\_signed.pdf](http://www.nzfsa.govt.nz/animalproducts/legislation/notices/animal-material-product/nmd/Animal_Products_(NMD_Specifications)_Notice_2007_signed.pdf)*

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## 1.8 RESPONSIBILITIES

It is the responsibility of the individual companies to ensure implementation and the internal auditing of the requirements of this manual.

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## **1.9 NON-COMPLIANCE**

*Broiler companies should have a procedure in place to deal with non-compliance with any recommended minimum standard within this Manual.*

*This should include basic corrective actions expected, i.e.:*

- *restoration of control*
- *disposition, if relevant*
- *follow-up*
- *prevention of recurrence*
- *records*

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## 2. BIOSECURITY

### 2.1 INTRODUCTION

#### 2.1.1 PURPOSE

Biosecurity is an integral part of any successful poultry production system. It refers to those measures taken to prevent or control the introduction and spread of infectious agents to a flock. Such diseases, whether clinical or sub-clinical, significantly reduce the productivity and profitability of a poultry operation.

Particular attention is paid to minimising the risk of contamination and/or infection by food borne pathogens.

The New Zealand poultry industry's approach is to design, implement and maintain biosecurity systems to ensure that the health, welfare and food safety of the country's commercial livestock is maintained or improved.

#### 2.1.2 OBJECTIVES OF BIOSECURITY PROGRAM

The health status of the New Zealand poultry industry is unique within the world. To maintain this status, it is important that poultry broiler companies take all reasonable steps to ensure that the risk of introduction of disease to their operations is minimised.

The objectives of our biosecurity program are as follows:

- To minimise the risk of the introduction of disease agents into our livestock (that may have a measurable impact on performance)
- To prevent the spread of disease from an infected area to an uninfected area
- To limit the general environmental pathogenic load, so that birds do not have to expend energy in responding to environmental pathogenic challenges
- To minimise the incidence and spread of organisms of public health concern, e.g. *Salmonellae*, *Campylobacters*, haemolytic *E. colis*, etc.
- To ensure New Zealand's unique avian health status is maintained, thus protecting our native species from disease. This directly impacts on the stringency of protocols for imported poultry products.

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Some diseases impact us through direct financial loss such as mortality, reduced productivity and medication costs. Other diseases cause no direct bird effect, but impact is due to the effects of these diseases on human health – for example, *Salmonella* and *Campylobacter*.

It is vital that New Zealand's unique animal health status is maintained. This will ensure that importation protocols which provide some protection against poultry meat importation are justifiable.

### 2.1.3 OVERVIEW OF BIOSECURITY PRACTICES

Biosecurity quite simply means protecting flocks from any type of infectious agent – viral, bacterial, fungal or parasitic.

Biosecurity requires:

1. Control of human traffic
2. Control of rodents, insects and wild birds
3. Control of vehicular traffic
4. Control of equipment movement
5. Control of stock movement
6. Control of inputs (e.g. feed, water)
7. Efficient clean-down and sanitation procedures
8. Use of a suitable vaccination/medication programme
9. Use of a suitable sampling and testing programme
10. Implementation of a suitable action plan, should any infectious agent become evident in a flock

Sources or carriers of diseases or disease agents include:

- **Livestock**
  - Transfer of birds from farm to farm
  - Dead bird disposal
- **Chicks**
  - Vertical transmission of many diseases is an important consideration.
- **Animals**
  - All species of both domesticated and wild birds, and their by-products
  - Pets, and feral or domestic animals (including livestock), as well as their by-products

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- Insects, e.g. flies, litter beetles
- Rodents – rats/mice
- **People**
  - All people moving onto and within the site, including contractors, maintenance personnel, neighbours, service people, friends, site visitors, etc
  - Disease can be transmitted by hands, boots, clothing, dirty hair etc.
- **Equipment and materials**, including maintenance equipment, toolboxes, wheelbarrows, buckets etc.
- **Vehicles**
  - All vehicles entering and moving within the site, e.g. farmer, feed delivery, chick delivery, dead bird pickup, dirty litter removal, etc.
- **Wind/air**
  - Transmission as an aerosol or dust
- **Water**
  - Untreated water
  - Surface water attracts water fowl
- **Clean litter material**, source of litter, litter delivery
- **Contaminated feed**, e.g. *Salmonella*
- **Waste and waste treatment operations**
  - Pooling of water, mud
- **Laboratories used by companies**
- **The site environment**

#### **2.1.4 TRAINING**

*Training is an important part of understanding and implementing the Biosecurity programme. All company personnel involved with livestock, livestock contractors (including clean litter suppliers, dirty litter contractors, catching crews, shed cleaning crews, electricians etc) and growers will undergo the necessary training required to understand and implement what is in this Manual every year. This can take the form of a formal presentation, workshop, discussion group, or individual visit (see below).*

*Training can also take place on the farm in a one-on-one session with the grower. These individual sessions may cover a range of topics, including issues associated with or arising out of an audit. Records of training sessions will be kept. Growers need to sign off on training sessions.*

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### 2.1.5 DISCRETIONARY STATEMENT

The biosecurity procedures within this manual are regarded as recommended **minimum standards**. However, there will be times when emergencies, bird welfare or logistical problems will arise, and will take primary concern over biosecurity issues. At these times, deviations to procedures may be authorized by the appropriate representatives within broiler companies.

Any deviations to the recommended minimum standards should be documented and authorized by appropriate poultry broiler company representatives.

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## 2.2 LEVELS OF BIOSECURITY

### 2.2.1 3 LEVELS OF BIOSECURITY

The prevention of diseases in commercial poultry operations is based upon the following four pillars:

- prevention of vertically transmitted pathogens by using suitable breeding stock and management practices
- appropriate biosecurity programs to ensure adequate barriers to the introduction and dissemination of pathogens.
- Increasing the poultry population resistance to diseases or reducing the multiplication of the organism, e.g. vaccination (active and passive immunity), genetic selection, competitive exclusion, probiotics, good nutrition
- early detection of diseases by monitoring programs, daily health checks and treatment programs.

One way of analyzing biosecurity programs is to divide biosecurity into three hierarchical elements with each element influencing both the cost and effectiveness of the program, i.e. conceptual, structural and operational biosecurity.

Conceptual Biosecurity	Structural Biosecurity	Operational Biosecurity
<p>Primary level of disease prevention: forms basis of program.</p> <p>Includes selection of the location of the operation. Examples of factors that are considered are biodensity of region, public roads, location of facilities such as hatcheries, feed mills, processing plants, layout of farm.</p> <p>Generally defects in Conceptual Biosecurity cannot be changed in response to disease emergence without considerable financial implications.</p>	<p>Second level of biosecurity includes considerations such as bulk feeding systems, water storage and reticulation, fences, drainage, shed design. These elements can be improved in the medium term with some capital investment.</p> <p>Remedial action may be possible with the sudden emergence of a disease but often will be too late.</p>	<p>The third level of biosecurity comprises the daily management steps to reduce introduction and dissemination of organisms that may cause disease. These activities can be adjusted at short notice in response to a disease challenge.</p> <p>This level of biosecurity requires ongoing staff training and review of procedures, as well as participation of all levels of staff.</p>

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## 2.2.2 SUSPECTED EXOTIC DISEASE – FLOW CHART



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## 2.3 LIST OF BROILER SITE CONTACTS

**Intent:** To ensure that all personnel associated with farms can be contacted if necessary, and to ensure that these contacts have been educated in the area of on-farm biosecurity.

A list of contacts needs to be maintained for all broiler farms. Below is a suggested example. This list will be held by the Broiler Manager of each industry broiler company and updated every six months. All contractors should sign the visitor's form (see Section 2.4.2.1: Broiler Farm Visitor's Form).

Farm: ..... Date Compiled.....

Contact	Name, Address, Phone Number	What other poultry or risk areas are serviced by this contractor?	Have they been made aware of industry biosecurity requirements?
Electrician			
Plumber			
Builder			
Dead Bird Disposal Contractor			
Clean Litter Supplier			
Clean Litter Spreader			
Software Servicing Contractor			
Rubbish Removal Contractor			
Dirty Litter Removal Contractor			
Where Dirty Litter Goes To			
Dirty Litter Transport			
Sanitiser Contractor			
Washing Contractor			
Fumigation Contractor			
Gas/Fuel Supplier			
Chick Delivery Drivers			
Feed Delivery Drivers			

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## **2.4 PERSONNEL**

### **2.4.1 GROWER RESTRICTIONS**

*Intent: to ensure that the biosecurity risk posed by the growers activities are minimised.*

*All growers and employees in regular contact with poultry livestock will not be engaged in any of the following activities:*

- *keeping of any avian or porcine species for any purpose whatsoever at their place of residence*
- *the operation of any retail outlet where such activity would mean contact with pet birds or poultry*
- *regular contact with or ownership of cage birds or racing pigeons*
- *regular contact with any operation that uses poultry or animal manure in bulk*
- *regular contact with any diagnostic laboratory which carries out biological work on animals or animal products*
- *regular contact with any external poultry operations including feed-milling, livestock or processing*

*There is a total ban on all pet birds, other poultry or pigs on site AND in grower's places of residence. There is a total ban of all livestock (including domestic pets) on-site (excluding places of residence).*

*Duck shooting is a high-risk activity and broiler chicken companies need to manage this risk by including restrictions in visitor requirements (see 2.4.2.1: Broiler Farm Visitor's Form) and in grower's contracts. Contractor risk should also be managed.*

### **2.4.2 RESTRICTIONS ON VISITORS (INCLUDING CONTRACTORS)**

*Intent: to ensure that the biosecurity risk posed by visitors and contractors is minimised.*

*Only essential visits will be made to broiler farms. Such visits need to be approved by the contractor/site manager.*

*A record should be kept of the name, date, time, reasons for visits, and date and place of last contact with poultry and other avian species for all visitors to broiler farms. Visitors should also state whether they are going to be entering the sheds. All visitors should sign the*

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*Visitor's Book on arrival at the site. For an example of a Visitor's Book, see 2.4.2.1: Broiler Farm Visitor's Form. It will be made clear to all visitors that signing the Visitor's Book means they understand the industry biosecurity restrictions (including stand-down periods) and that they are abiding by them.*

*The site manager is responsible for all personnel and visitors being aware of and understanding biosecurity procedures. It is the responsibility of the site manager to ensure that non-company visitors adhere to the broiler company's biosecurity procedures and stand-down periods. Site managers will not allow entry if they are not fully satisfied that biosecurity procedures have been met. Regular visitors, growers and personnel should sign an annual declaration that they will comply with biosecurity restrictions.*



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## 2.4.3 STAND-DOWN PERIODS

### 2.4.3.1 DOMESTIC VISITORS

*Intent: to ensure that there is an adequate break between activities which have a biosecurity risk associated with them and contact with broilers.*

*Stand-down times for domestic visits to broiler farms will be as follows:*

- any external company operation (including livestock and processing) – **overnight**
- any pig farms – **overnight**
- any bird shops/aviaries – **overnight**
- any quarantined broiler or breeder site – **overnight**
- zoos – **overnight**
- any operation that uses poultry or animal manure – **overnight**
- any places of residence with poultry – **overnight**
- any laboratories processing poultry/pig samples – **overnight**
- any contact with avian species (including duck shooting) - **overnight**

### 2.4.3.2 INTERNATIONAL VISITORS

*Intent: to ensure that the risk of introduction of exotic disease or more pathogenic strains of diseases currently in New Zealand is controlled.*

*All overseas visitors will need to get their visits approved and authorised by an appropriate responsible person.*

*Overseas visitors and company personnel/growers who have, whilst overseas:*

- made visits to or had contact with commercial avian farms, including processing facilities, hatcheries, live bird markets (of any sort), featuring ducks, chicken, ostriches, emus, geese, turkey and quail, etc.
- visited any pig farms
- visited any bird shops/aviaries
- visited any quarantined broiler or breeder sites
- visited any zoos
- visited any operations that use poultry or animal manure
- visited any places of residence with poultry
- visited any laboratories processing poultry or pig samples
- had contact with any avian species

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*should have a 4 day break before visiting company livestock (this can be done overseas).  
Any worn footwear and clothing needs to be thoroughly cleaned.*

*In countries where there has been recent disease episodes (e.g. avian influenza, Newcastle Disease), further restrictions may apply.*

*Company personnel or New Zealanders visiting overseas should be discouraged from visiting countries with active Avian Influenza infections. Growers who visit poultry operations overseas need to be especially vigilant when returning to their sites, to ensure that exotic diseases are not introduced on their person or clothing. Specific requirements regarding returning to work should be discussed with the relevant company authorities.*

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## **2.5 SITE SET-UP**

### **2.5.1 SIGNAGE**

*Intent: to alert visitors that there are restrictions on entry into the site.*

*All farms are to have a sign at the entrance to the site, stating that this site is a biosecurity area and that all visitors are to contact the poultry broiler company or site manager before entry. All sites will be clearly marked to prevent unauthorised entry.*

### **2.5.2 EXCLUSION OF ANIMALS**

*Intent: animals can carry unwanted organisms, and their presence on farm needs to be controlled.*

*A total ban of all livestock on site (including domestic pets) should be in place. Places of residence are excluded from this restriction. Prevent animals, including pets and their waste, from passing onto the poultry site, with a physical barrier between the poultry site and other animals.*

*A fence should enclose all broiler sites, with the site boundaries clearly defined. Livestock should be a minimum of two metres from the sheds - the aim is to have a two metre buffer around the shed. Pathways and traffic areas are to be free of livestock.*

*Reduce attractiveness of areas to other species within and in close proximity to the poultry site, e.g. remove trees, wet areas, organic material, and maintain good housekeeping.*

*No farm or domestic animals may enter sheds or service rooms. For free-range broilers, grazing animals and domestic pets should be excluded completely from the free-range areas and the farm area surrounding the range.*

### **2.5.3 DRAINAGE REQUIREMENTS**

*Intent: to maintain drainage systems to prevent pooling of water, which can harbour unwanted organisms and attract insects or birds.*

*Drainage systems are required on the site to prevent pooling of water, as well as overflow onto defined pathways. Drains should be regularly maintained so water can flow freely*

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*through them and does not accumulate. Drains should be kept clean, free-flowing and free of vegetation.*

*If shed guttering is used, then it should be kept clean and free-flowing.*

#### **2.5.4 DEFINED PATHWAYS**

**Intent:** *to ensure that annexes and sheds are kept as clean as possible, thus helping to prevent shed contamination.*

*Roadways, foot pathways and traffic areas are to be constructed of hard-packed material to avoid water pooling and mud/contamination being trampled into sheds. These routes should be concreted in the construction of new paths and farms.*

#### **2.5.5 SHED ANNEX/SERVICE ROOM**

**Intent:** *annexes are the point at which clean and dirty areas are differentiated. Therefore, this area should be kept as clean as possible.*

*All sheds should have an annex for personnel entry.*

*Shed annexes will not be used as storage areas for anything other than clean, essential equipment for day to day running of the sheds. This equipment is to be stored off the floor, to allow sufficient cleaning of the annex. Anything stored in the annex should be cleaned and disinfected as part of the shed cleaning process, and protected from dust.*

*Floors in shed annexes will be kept clean during the run and should be disinfected weekly, or more frequently if required.*

#### **2.5.6 END PADS**

**Intent:** *to help prevent the transmission of dirt or organic matter into the shed.*

*All sites should have sealed end pads, of sufficient size to allow loading of trucks and trailers.*

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*End pads should be washed and sanitised immediately prior to clean litter and chick entry on site.*

*End pad quality is to be regularly maintained.*

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## **2.6 SHED ENTRY**

### **2.6.1 GENERAL**

**Intent:** to ensure that entry procedures are adequate to prevent contamination of sheds, between sheds and from other external sources.

The area around sheds can be contaminated by the droppings of a number of different animals (e.g. rats, mice, ducks etc). These droppings can be potentially harmful to the birds (e.g. IBD) or can introduce organisms important in food safety (e.g. Salmonella in rat/mice droppings, or Campylobacter).

A written procedure prescribing the biosecurity steps that should be taken before entering the shed, and the order in which these steps should progress, should be placed on the wall of the shed annex in plain view.

### **2.6.2 FOOT BATH REQUIREMENTS**

**Intent:** to ensure that foot baths, where used, are used effectively.

Where foot baths are used, companies should have a detailed procedure as to how the usage and maintenance of foot baths is performed. This procedure should cover:

- cleanliness of footwear prior to entering the foot bath
- cleanliness of the foot bath itself
- where the bath is located
- the frequency of changing the bath contents
- what approved chemicals are to be used and how

### **2.6.3 CLOTHING REQUIREMENTS**

**Intent:** to minimise the risk of shed contamination resulting from contaminated clothing and hair.

All visitors (including contractors) who go into the shed will wear dedicated clean clothing (preferably overalls) and head cover. The outer protective clothing will completely cover both hair and inner clothing. Dedicated clothing will not be worn off-site.

Operations that are not all-in, all-out should provide clothing that is shed-specific.

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*Clothing should be stored in a clean area and laundered or replaced after each use or on a daily basis. Clean and dirty clothing should be kept separately to prevent cross-contamination.*

#### **2.6.4 HAND HYGIENE**

**Intent:** *to minimise the risk of shed contamination resulting from unclean hands.*

*All people should wash their hands with water and soap, or hand sanitiser, immediately prior to entering the shed from the shed annex. Hands should also be washed or sanitised:*

- *Before starting work, and before and after breaks*
- *Before handling food, eating, drinking or smoking*
- *After handling rubbish, birds or any litter*
- *Before and after using the toilet*

*If washing facilities are provided which require the use of water, drying facilities should also be made available.*

#### **2.6.5 FOOTWEAR REQUIREMENTS**

**Intent:** *to minimise the risk of shed contamination resulting from contaminated footwear.*

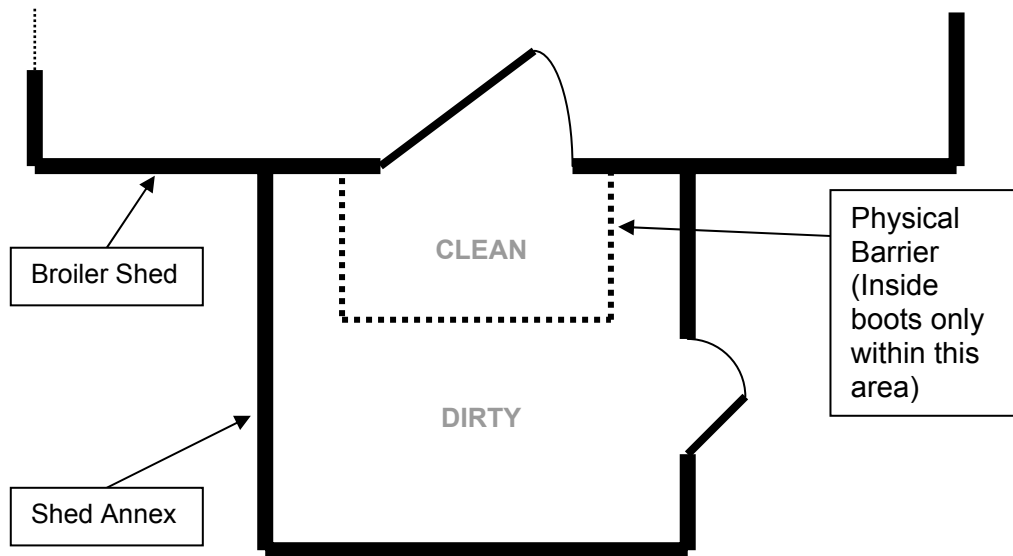
*The objective of footwear hygiene is to exclude the entry into broiler sheds of certain organisms carried by footwear.*

*Where footbaths are not used, footwear worn outside sheds should be covered (or preferably changed) in the annex before entering a shed. Dedicated shed-boots are recommended, preferably of a different colour to outside boots.*

*To ensure that footwear change is done effectively, a strict routine needs to be followed. Dirty and clean areas should be clearly marked in annexes. A physical barrier is required in ensuring separation. On some sites where the annex doorway is next to the shed door, the barrier can be incorporated into the shed entrance.*

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An example is included below:



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## **2.7 VEHICLES AND EQUIPMENT**

### **2.7.1 VEHICLES COMING ON-SITE**

#### **2.7.1.1 GENERAL**

*Intent: to minimise the risk of cross-contamination from external areas to the farm, and between sites, as caused by vehicle exteriors.*

*Vehicle entry to sites will be kept to a minimum.*

*Any vehicles not associated with essential services (e.g. delivery of feed, clean litter, or chicks etc.) should be parked in a defined parking area. The parking area should be chosen with thought given to avoidance of dust and other contamination.*

#### **2.7.1.2 FEED TRUCKS**

*Intent: to minimise the risk of cross-contamination from external areas to the farm, and between sites caused by feed truck drivers.*

*Drivers should limit movements to the essential activities of feed delivery. Documentation covering feed delivery should not be taken into sheds.*

#### **2.7.1.3 CHICK DELIVERY TRUCKS**

*Intent: to minimise the risk of contaminating sheds caused by the chick delivery process.*

*The end pad will be sprayed with sanitiser immediately prior to delivery of chicks.*

*Drivers should limit movements to the essential activities of chick delivery. If entering sheds, chick delivery truck drivers will wear protective clothing. Boots can be changed on entry to the site; overboots may be worn or boots cleaned and sprayed with disinfectant.*

#### **2.7.1.4 CLEAN LITTER DELIVERY TRUCKS**

*Intent: to minimise the risk of shed contamination caused by the delivery of clean litter.*

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*Vehicles that deliver clean litter should not be used for carrying poultry manure. All equipment (e.g. tractors, spreaders, etc.) used to distribute new litter will be thoroughly cleaned and disinfected before entering the shed being prepared.*

*Loading pads and traffic areas used in the process of transferring clean litter into sheds should be cleaned and sprayed with sanitiser immediately prior to placement of clean litter.*

## **2.7.2 EQUIPMENT SANITATION**

### **2.7.2.1 GENERAL**

***Intent:** to minimise the risk of shed contamination from used and on-farm equipment.*

*Purchase and installation of any imported second-hand poultry equipment (e.g. feeders etc.) should be notified to and cleared by the appropriate representatives of the broiler growing company.*

*Any second-hand imported equipment should have a ten day break, a thorough cleaning and sanitising before leaving the overseas country, and a thorough cleaning and sanitising once again before entry onto the site. The equipment should also be examined for cleanliness prior to introduction onto any site.*

*Equipment used in sheds should not be stored outside of sheds, unless there is a program to clean and sanitise prior to taking it into the shed.*

### **2.7.2.2 CLEAN LITTER TRANSFER EQUIPMENT**

***Intent:** to minimise the risk of shed contamination through clean litter transfer equipment.*

*All equipment (e.g. tractor and blade, spreader, etc) used in transferring and/or spreading clean litter or paper into sheds should be physically cleaned and sanitised before clean litter handling. The standard is removal of all dirt, mud, feathers, manure, litter etc. and the thorough wetting of all surfaces with sanitiser.*

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## **2.8 WATER SUPPLY**

### **2.8.1 STANDARD**

*Intent: to minimise the risk of introducing organisms into the shed via the drinker system. Also, to limit the spread of any organisms at drinker level.*

*A water management programme should be detailed, and include an action plan in appropriate detail.*

*All water is to be sanitised with a product that will have a residual sanitising effect at the drinker.*

*The water supply available to broilers should also meet the following standard: E. coli should not be present in the drinking water. (This is derived from the Drinking Water Standards for New Zealand 2005). Annual testing for compliance to the bacteriological standard mentioned above should be performed to ensure that the drinker water supply conforms to this standard. This test should be performed at the point the water source enters the farm or immediately after treatment.*

### **2.8.2 MAINTENANCE OF WATER STANDARD**

*Intent: to ensure that the aforementioned intent (2.8.1: Standard) is maintained.*

*Testing of the residual sanitising effect at the drinker will be checked weekly by the grower and documented. This testing will be done at bird level in the shed. If the test fails, then an investigation is necessary as to why the sample failed. This will include re-testing as well as a report on the state of the water supply and treatment system if applicable, from a qualified person. An appropriate action plan needs to be implemented.*

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## **2.9 VERMIN AND WILD BIRD CONTROL**

### **2.9.1 GENERAL**

*Intent: to ensure that the biosecurity risk posed by vermin and wild birds is minimised.*

*A vermin and wild bird control program should be in place, including baiting for rodents and discouragement measures.*

### **2.9.2 SHED CONSTRUCTION**

*Intent: to control the risk associated with ingress of wild birds and vermin into sheds.*

*Sheds should be constructed to control the ingress of wild birds and vermin. Attention should be given to air inlets and other possible entry points.*

*Sheds should also be constructed to minimise roosting and nesting sites on the shed itself.*

### **2.9.3 VEGETATION EXCLUSION**

*Intent: to discourage the presence of rodents and wild birds.*

*Site and shed surrounds will be kept clean, tidy and free of weeds and debris.*

*Around the immediate vicinity of the shed, vegetation is to be kept short or cleared with herbicide where it is not possible to be kept short.*

*Grassed areas should be mowed regularly.*

### **2.9.4 STORAGE SHED EXCLUSION**

*Intent: to ensure that equipment and supplies used in sheds are not contaminated with wild bird or vermin droppings.*

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*Sheds and areas used for storing equipment and supplies used within sheds (e.g. brooders, brooder paper etc) should be constructed to exclude wild birds and vermin to the best possible extent.*

### **2.9.5 WILD BIRD DISCOURAGEMENT**

**Intent:** *to discourage the presence of wild birds.*

*Wild birds should be discouraged from gathering in and around sheds by ensuring the following measures are met:*

- *any feed spills from feed deliveries are immediately cleaned up and disposed of*
- *any feed leaks from silo auger boots are immediately repaired when noticed*
- *any potential nesting sites on and around sheds and feed sites should be prevented, and where found, eliminated*
- *during clean-out, shed end doors are not to be left open, allowing the entry of wild birds.*

### **2.9.6 INSECT DISCOURAGEMENT**

**Intent:** *to discourage the presence of flies and other insects.*

*Flies are known to carry Campylobacter and the introduction of this organism to flocks by means of flies is a possibility. Insect discouragement programmes should include fly control measures to minimise their presence in sheds, as detailed below.*

*Flies and other insects should be discouraged from gathering in and around sheds by ensuring the following measures are met:*

- *feed spills from feed deliveries are immediately cleaned up and disposed of*
- *feed leaks from silo auger boots are immediately repaired when noticed*
- *pooling of water on-site should be avoided*
- *potential breeding grounds for flies should be cleaned up. These include areas of rubbish and areas of dirty litter.*
- *dead birds are to be handled appropriately (see 2.10: Dead Bird Disposal).*
- *a procedure needs to be in place for when litter beetles are identified.*

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## **2.9.7 RODENT CONTROL PROGRAM**

### **2.9.7.1 GUIDELINES**

*Intent: to ensure that the rodent control program is effective.*

*An effective documented rodent control program should be cover the whole site, and should be maintained during the lifecycle of the sheds, including clean-out.*

*All sites should have a Rodent Control Site Plan, which records the following information:*

- *A site plan showing where baits and bait stations are placed*
- *Name and contact details of operator (where applicable)*
- *What baits are in use, and when they have been checked and replenished*
- *The name of the bait and the active ingredient*
- *Inspection dates*
- *Any noted signs of rodent activity, and any action taken*
- *Any additional comments*

*Rodent control also involves keeping the premises and environment clean and tidy, and keeping vegetation from around sheds.*

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## **2.10 DEAD BIRD DISPOSAL**

***Intent:** to ensure that dead birds are disposed of in a manner that is hygienic and does not encourage the presence of rodents and insects.*

*Dead bird disposal methods should not attract rodents, cats and/or dogs, or insects, and should comply with environmental requirements. Dead birds are to be removed from sheds whenever they are seen.*

*Containers used for dead bird collection and transfer to central storage facilities on-site should be sanitised before re-entry into the shed. These containers should be shed-dedicated.*

*Where birds are taken off-site, the vehicle used to remove dead birds from the site will be washed daily to a standard that shows no visible soiling and be disinfected using an approved chemical and method. The collector's truck will be constructed such that the birds within are out of sight (i.e. high-sided truck and trailer) and that allows no spillage of liquid contents.*

*The collector will not enter the sheds or shed annexes. Where freezers are in annexes, then bagged birds will be taken out to the collection area, at the site boundary. No physical contact is to be had with the collector or the vehicle.*

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## **2.11 HARVEST**

### **2.11.1 VEHICLES AND EQUIPMENT**

**Intent:** *to minimise cross-contamination between sites caused by vehicles and equipment.*

*All equipment used during harvest - trucks, other vehicles, crates, forklifts and modules - will be physically cleaned and sanitised between sites to a visibly clean standard. Trucks, crates, modules and forklifts are to be washed to a standard where there is no faecal material, litter or feather, then completely wetted with sanitiser. Truck and vehicle interiors will also be kept clean.*

### **2.11.2 CATCHING CREW CLOTHING REQUIREMENTS**

**Intent:** *to minimise cross-contamination between sites caused by clothing, footwear or hair.*

*Catching crews are to change into clean clothes, including hats, boots, and, if used, gloves, prior to each site visited, or between sheds on multi-age farms.*

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## **2.12 CLEAN-OUT**

### **2.12.1 GENERAL PRINCIPLES**

*Intent: to ensure that poultry companies have a clear, prescriptive procedure to prevent carryover infection from one flock to the subsequent flock.*

*All repairs, maintenance and building will be done at intercrop (emergencies excepted), before cleaning and sanitation (including the replenishing of bait stations). Sheds and annexes will be checked for bird proofing, and repairs performed if necessary.*

*All dirty litter should be removed from the site before sanitation of the sheds commences. All equipment brought on to any broiler site to clean out dirty litter will be thoroughly cleaned and disinfected before entering the site. The standard will be the washing off of all manure, dirt, feathers and dirty litter, and the complete wetting of all areas with sanitiser. Dirty litter will be removed in a covered container and taken from the site. Dirty litter should not be spread on the farm closer than 100m to sheds.*

*All poultry broiler companies should have a detailed clean-out procedure, which should cover the following elements:*

1. *Dirty litter removal and containment of dirty litter, as well as procedures to clean up any areas of dirty litter spilled during removal.*
2. *Cleaning and sanitation of all shed equipment*
  - Feeders and removal of feed*
  - Drinkers*
  - Equipment taken out of sheds (e.g. brooding curtain)*
  - Brooders and heaters*
  - Shed dividers*
3. *Cleaning and sanitation of annexes.*
4. *Cleaning and sanitation of internal shed surfaces.*
5. *Cleaning and sanitation of air intakes and vents.*
6. *Cleaning and sanitisation of header tanks and drinker lines.*
7. *The removal of biofilm from header tanks and pipes on an annual basis.*
8. *The control of litter beetle where seen.*
9. *Sheds should be dry prior to the introduction of clean litter.*
10. *Maintenance of integrity of shed floor and walls.*
11. *Prevention of site contamination from wet cleaning*
12. *Cleaning and sanitising checklist (an example of a checklist can be found below in Section 2.12.1.1)*

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### 2.12.1.1 EXAMPLE OF CHECKLIST

*Intent: to ensure that all clean-out procedure tasks have been performed.*

PREPARATION	YES	NO
Have you sprayed for beetles (if present)?		
Have you removed all dead birds from sheds?		
Have you cleaned out the annex?		
Are the sheds ready for clean-out?		
Have you carried out any planned maintenance?		
Have you emptied the cross auger, feed lines and pans of feed?		
Comments:		

DIRTY LITTER CLEAN-OUT	YES	NO
Has all dirty litter been removed from sheds?		
Have dirty litter spillages off pads and traffic areas been cleaned up?		
Is there any damage to sheds?		
Have sheds been cleaned out to the aforementioned standards?		
Comments:		

WASH-DOWN	YES	NO
Have brooders and chick equipment been cleaned and sanitised?		
Have drinker lines/header tanks been flushed out with appropriate sanitiser?		
Have sheds and equipment been cleaned, and if so, with what?		
Have floors, walls and ceilings been cleaned?		
Have all fans and vents, including vent cavities, been cleaned?		
Have feeders and drinkers been dismantled?		
Have annexes been cleaned?		
Have silos, silo boots, feed hoppers, and auger head drives been cleaned?		
Have shed doors been closed after cleaning?		
Are clean gumboots and fresh foot-baths (if used) in place?		
Are the sheds and annexes maintained as bird-proof?		
Have any repairs and maintenance required on sheds or traffic areas been completed?		
Have sheds been washed to standard?		

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<b>SANITISING</b>	<b>YES</b>	<b>NO</b>
Were shed and annex doors closed prior to sanitising, but after washing out?		
Have all internal surfaces of sheds and annexes been sanitised (including vent cavities)?		
Has all equipment been sanitised?		
Have all end pads been sanitised?		
Have all silos been sanitised?		
Have sheds and annexes been closed after sanitation?		
Are silo boots and augers completely drained and dry?		
Has the shed been sanitised to standards?		
Are clean footbaths (if used) and sanitised gumboots in place?		
Comments:		

<b>INSECTICIDE</b>	<b>YES</b>	<b>NO</b>
Have all surfaces inside sheds and annexes been sprayed with insecticide?		
Has all equipment been sprayed with insecticide?		
Comments:		

<b>CLEAN LITTER INTAKE</b>	<b>YES</b>	<b>NO</b>
Have the end pads been sanitised prior to delivery?		
Has the tractor been cleaned and sanitised?		
Have spillages of clean litter been cleaned up and disposed of (not in shed)?		
Have silo lids and boots been closed up?		
Have all doors been kept shut after clean litter has been put in?		
Comments:		

<b>FOGGING (IF NECESSARY)</b>	<b>YES</b>	<b>NO</b>
Have sheds and all equipment used during the run been fogged to standard?		
Has terminal fog been used?		
Has the annex been fogged?		
Comments:		

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### **2.12.2 INSECT CONTROL DURING CLEAN-OUT**

*Intent: to minimise the biosecurity risk posed by insects in transmitting organisms between subsequent flocks.*

*Insecticide should be applied immediately after the birds have been removed from the shed (if beetles are seen during the run, use appropriate chemicals).*

### **2.12.3 FEED CARRY-OVER**

*Intent: to minimise the biosecurity risk posed by feed in transmitting organisms between subsequent flocks.*

*Feed held over between batches should be stored in such a way to prevent contamination during shed clean-out. Only feed that was contained within the storage systems can be carried over – any feed open to the shed environment (e.g. feed pans) or contained within the augers should be disposed of.*

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## **2.13 FEED SUPPLY**

**Intent:** *to minimise the risk of micro-organism transmission to flocks through feed.*

*The New Zealand Code of Good Manufacturing Practice for Compound Feeds, Premixes and Dietary Supplements, as issued by the New Zealand Feed Manufacturer's Association (Inc) and approved under the Agricultural Compounds and Veterinary Medicines Act, provides good guidelines for the control of microbiological contamination of feed. Feed should be sourced from manufacturers who meet this Code, where possible.*

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## **2.14 CONTROL OF CHEMICALS**

*Intent: to ensure the appropriate and effective use of chemicals on-site.*

*Companies should have a list of all approved chemicals used on and around sites. This list should detail the chemical, where it will be used and for what purpose.*

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## **2.15 FREE-RANGE SYSTEM BIOSECURITY**

***Intent:** to minimise the biosecurity risks represented by features unique to free-range farming systems.*

*Free-range farms should be sited away from areas which attract wild water fowls.*

*Wild birds should be discouraged (see 2.9.5: Wild Bird Discouragement).*

*Grazing animals and domestic pets should be excluded completely from the free-range areas and the area surrounding the range. There should be a physical boundary between grazing animals/domestic pets and the birds.*

*Ranges should be constructed to provide good draining and avoid pooling of water.*

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## **2.16 AUDITING**

*Intent: to ensure that biosecurity procedures are maintained on farm.*

*Companies should have a planned audit system in place, including specified frequency of audits and directions on how corrective actions should be taken.*

*Independent, external audits may be undertaken, as considered appropriate to maintain the robustness of the system, and as agreed between NZFSA and the New Zealand poultry industry.*